



# Graduate School

***2012-2013 Graduate School Catalog***



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# University of Missouri Leadership

## University of Missouri Board of Curators

David R. Bradley, St. Joseph, Board Vice Chairman

Donald L. Cupps, Cassville

Don M. Downing, Webster Groves

Warren K. Erdman, Kansas City, Board Chairman

Wayne Goode, St. Louis

Judith G. Haggard, Kennett

Doug Russell, Lebanon

David L. Steward, St. Louis

Craig A. Van Matre, Columbia

Laura Confer, Missouri University of Science and Technology, Student Representative

## University of Missouri System (UM)

<http://www.umsystem.edu>

Stephen J. Owens, interim UM president

Gary K. Allen, UM vice president for information technology  
and MU chief information officer

Steven Graham, senior associate vice president for academic affairs

Steven C. Knorr, vice president for government relations

Natalie “Nikki” Krawitz, vice president for finance and administration

Michael F. Nichols, vice president for research and economic  
development

Cindy Pollard, associate vice president for strategic communications

Elizabeth “Betsy” Rodriguez, vice president for human resources

Kathy Miller, chief of staff

Cindy S. Harmon, secretary to the Board of Curators

Phillip J. Hoskins, acting general counsel

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## University of Missouri (MU)

Columbia, Missouri

<http://www.missouri.edu>

### **Brady J. Deaton, chancellor**

Chancellor's Staff:

Michael F. Alden, director, Intercollegiate Athletics

Robert Duncan, vice chancellor for research

Brian L. Foster, provost

Thomas Hiles, vice chancellor, Development and Alumni Relations

Jacquelyn "Jackie" Jones, vice chancellor, Administrative Services

Christine H. Koukola, assistant to the chancellor, University Affairs

Todd A. McCubbin, executive director, Mizzou Alumni Association

Michael Middleton, deputy chancellor

Michael Quart, vice provost for extension, MU Extension

Tim R. Rooney, director of budget

Catherine C. Scroggs, vice chancellor, Student Affairs

Harold "Hal" A. Williamson, MD, vice chancellor, Health System

### **Brian L. Foster, Provost**

Provost's Staff:

Jacquelyn "Jackie" Jones, vice chancellor for administrative services

Tim R. Rooney, director of budget

Terry L. Barnes, assistant to the provost, director of community college partnerships

Kenneth D. Dean, deputy provost

Steve Wyatt, vice provost for economic development

Ann J. Korschgen, vice provost for enrollment management

George L. Justice, vice provost for advanced studies and dean of the Graduate School

Gary K. Allen, UM vice president for information technology and MU chief information officer

Mardy Eimers, director of Institutional Research

Handy Williamson, vice provost for international programs

Annette Sobel, assistant to the provost for strategic opportunities

Robert V. Duncan, vice chancellor for research

Catherine Scroggs, vice chancellor for student affairs

James N. Spain, vice provost for undergraduate studies

Michael Quart, vice provost and director of cooperative extension

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**Deans and Directors**

Thomas L. Payne, vice chancellor and dean, College of Agriculture, Food and Natural Resources

Mark R. Ryan, director, School of Natural Resources

Michael J. O'Brien, dean, College of Arts and Science

Robert S. Shay, director, School of Music

Joan T.A. Gabel, dean, Robert J. Trulaske, Sr. College of Business

Vairam Arunachalam, director, School of Accountancy

Daniel Clay, dean, College of Education

John Wedman, director, School of Information Science and Learning Technologies

James E. Thompson, dean, College of Engineering

George L. Justice, vice provost for advanced studies and dean of the Graduate School

Barton J. Wechsler, dean, Harry S Truman School of Public Affairs

Richard E. Oliver, dean, School of Health Professions

Stephen R. Jorgensen, dean, College of Human Environmental Sciences

Marjorie R. Sable, director, School of Social Work

Dean Mills, dean, School of Journalism

Gary Myers, dean, School of Law

Robert Churchill, dean, School of Medicine

Judith Fitzgerald Miller, dean, School of Nursing

Neil C. Olson, dean, College of Veterinary Medicine

James A. Cogswell, director, Libraries

**MU Graduate School**

George L. Justice, vice provost for advanced studies and dean of the Graduate School

Master of Public Health

MU Informatics Institute

Nuclear Science and Engineering Institute

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# Dean's Letter



As Vice Provost for Advanced Studies and Dean of the Graduate School, I am constantly amazed by the brilliance, hard work, and enthusiasm of the University of Missouri's graduate students. Time and again, these future practitioners, scientists, researchers and teachers have told me how they are eager to become engaged citizens and contribute their many talents to the benefit of our society.

The Graduate School holds the campus-wide responsibility to promote, facilitate, and support graduate education, scholarship, and creative achievement. Our 95 graduate programs work in concert with undergraduate instruction, providing support for MU's mission of teaching, research, outreach, and economic development. Across schools and colleges, MU faculty and staff share the values of:

- unparalleled graduate teaching, advising, and mentoring;
- students' mastery of content and other degree requirements; and
- students' professional development and successful career placement.

In part, many students come to MU because of the highly collaborative, interdisciplinary nature of our programs. They know they will have access to some of the finest collegiate research facilities in the nation. Still others enroll with the confidence that they will enter the workforce with current disciplinary knowledge, problem solving abilities, and state-of-the-art technical skills.

MU graduates will be our next generation of business, government, creative, and educational leaders; their contributions will be vital to sustain our dynamic and increasingly global society. Learn more about their research, teaching and service achievements under the "About Us" tab of the Graduate School website: <http://gradschool.missouri.edu>

Thank you for your interest and support of the MU Graduate School. Please don't hesitate to contact us with questions, suggestions or ideas. The next time you visit MU, please stop by 210 Jesse Hall. We would be very happy to see you!

Sincerely,

**George L. Justice**

*Vice Provost for Advanced Studies and Dean of the Graduate School*  
University of Missouri

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# About the University of Missouri

The University of Missouri (MU), established in 1839, is the oldest state university west of the Mississippi River, and it is an original land grant institution. Located in Columbia, MU is the largest of the four campuses of the University of Missouri System. Other campuses are in St. Louis, Kansas City and Rolla.

MU is one of only 35 public U.S. universities, and the only public institution in Missouri, to be selected for membership in the [Association of American Universities](#). MU is designated as “comprehensive doctoral with medical/veterinary” and “very high research activity” by the [Carnegie Foundation for the Advancement of Teaching](#) and is a member of the [Association of Public and Land-Grant Universities](#). MU is one of only six public universities in the country with medicine, veterinary medicine, law, engineering and agriculture all on one campus. Thus, graduate students find many rich opportunities for collaborative research and scholarship within and across disciplines.

MU’s schools and colleges (links to websites):  
[College of Agriculture, Food and Natural Resources](#)  
[School of Natural Resources](#)  
[College of Arts and Science](#)  
[School of Music](#)



Our distinct mission is to provide all Missourians the benefits of a world-class research university. We are stewards and builders of a priceless state resource, a unique physical infrastructure and scholarly environment in which our tightly interlocked missions of teaching, research and service work together on behalf of all citizens. Students work side by side with some of the world’s best faculty to advance the arts, the humanities, the sciences, and the professions. Scholarship and teaching are daily driven by a sense of public service—the obligation to produce and disseminate knowledge that will improve the quality of life in the state, the nation and the world.

<http://www.missouri.edu/about/mission.php>

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[Robert J. Trulaske, Sr. College of Business](#)  
[School of Accountancy](#)

[College of Education](#)  
[School of Information Science and Learning Technologies](#)

[College of Engineering](#)

[Graduate School](#)

[School of Health Professions](#)

[College of Human Environmental Sciences](#)  
[School of Social Work](#)

[School of Journalism](#)

[School of Law](#)

[School of Medicine](#)

[Sinclair School of Nursing](#)

[Harry S Truman School of Public Affairs](#)

[College of Veterinary Medicine](#)

[2012-2013 Provost's Academic Calendar \(web link\)](#)

Please check with your department of interest to obtain deadlines for application, enrollment, etc.

It is the policy of the University of Missouri to respect the diversity of our students. The faculty is reminded that students might want to observe [religious holidays](#) and days of special commemoration and is encouraged to accommodate students who have a conflict with a class period, test or activity because of these obligations.

The MU Calendar of Events is at <http://calendar.missouri.edu>.

The Graduate School Calendar of Events is at <http://gradschool.missouri.edu/calendar/>.

Approved by the MU Faculty Council on November 3, 2005.



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# About the MU Graduate School

The Graduate School at University of Missouri (MU) administers one of the most comprehensive set of programs in the United States: 71 doctoral and 96 master's programs across a wide range of disciplines including science, technology, engineering and mathematics (STEM) fields; the social sciences; business and education; and the humanities and arts. The broad scope of MU degree programs promotes interdisciplinary research, scholarship, and dialogue among scholars from diverse disciplinary backgrounds.

For Fall Semester 2011, MU enrolled 6,545 graduate students, coming from every state in the U.S. and 101 foreign countries. This includes 1,254 international graduate students, with China (479), India (157) and the Republic of Korea (104) having the largest contingents of international graduate students attending the University of Missouri.

An additional 1,236 students were enrolled in a professional degree program in Fall Semester 2011. A total of 7,781 students, or approximately 23% of the MU total student population, was enrolled in a graduate or professional degree program.

Beyond its administrative functions and support of graduate programs across campus, the MU Graduate School is also an academic unit, offering several graduate courses and a certificate program. Providing oversight and leadership are the graduate dean and two associate deans, who work with staff members to provide a range of services and programs. Initiatives, such as the national PhD Completion Project, Responsible Conduct of Research, and Preparing Future Faculty, also fall under its purview. The associate deans also serve as liaisons with Graduate Faculty Senate, the Postdoctoral Association, and several graduate student groups. [The schema in this section \(click here\)](#) helps to depict the Graduate School's many functions.

In 1846, MU granted its first master's degree, and the first doctoral degree followed 53 years later (1899). In Academic Year 2011, MU conferred 365 PhD degrees; 1,513 master's degrees; 306 first professional degrees; 162 graduate certificates and 53 educational specialist degrees. Today, MU has more than 26,000 graduate alumni in Missouri alone!

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MU graduate education is ultimately aimed at meeting the future needs of our society—familial, social, economic and environmental. Degree programs prepare students to become educators, government leaders, scientists, business managers, engineers, psychologists, entrepreneurs and social workers. Importantly, while students learn how to solve complex problems and advance knowledge, they also prepare to become engaged citizens.

MU graduate students have access to some of the finest [research facilities](#) in the nation: In addition to being the home of the oldest agricultural experiment station west of the Mississippi River, Sanborn Field (pictured), MU supports eight core research facilities, a nuclear reactor, research farms and several interdisciplinary research centers. Faculty in journalism, business, engineering, chemistry, education, health professions, public affairs, law and human environmental studies also offer research centers where graduate students may study and conduct research. Across disciplines, mentoring is a strong component of MU's graduate education.

Also supporting graduate study is the [MU library system](#), which includes more than 3 million volumes, almost 7 million microforms, 1.6 million government documents and more than 33,000 journal subscriptions. The main library houses special collections, as do several museums. The rich array of resources spans disciplines and helps serve the research needs of graduate students all across campus.

The MU Graduate School is a member of the Association of Graduate Schools and the Council of Graduate Schools.

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# University of Missouri Graduate School

**Dr. George Justice**

Vice Provost for Advanced Studies  
and Dean of the Graduate School

**Dr. Mannie Liscum**

Associate Dean,  
MU Graduate School

**Dr. Lee Wilkins**

Faculty Fellow,  
MU Graduate School

*Serving the MU Campus and the State of Missouri through:*

## Administrative Support Services

Recruitment  
Admissions  
Advising  
Support for MU Postdoctoral Association  
Grad Student Support Program + Insurance  
Graduate Faculty Senate

## Initiatives

EMERGE Fall Preview Weekend  
Glimpse into Graduate School program  
Graduate Education Week  
Graduate School *Matters* series  
Ronald E. McNair Scholars Program  
PhD Completion Project  
Amazing Graduate Students series

## Professional Development

Preparing Future Faculty  
Support for graduate student groups  
International Teaching Assistant Program  
Blackboard Site on Grantsmanship

## Academic Programs

Master of Public Health  
MU Informatics Institute  
Minor in College Teaching

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# University of Missouri Graduate Policies 2012-2013

This document available electronically at

<http://gradschool.missouri.edu/programs/catalog/>

## Notifications In This Section

- Accreditation
- Notice of Nondiscrimination
- Accommodations for Students with Disabilities
- Family Education Rights and Privacy Act (FERPA)
- Equity in Athletics Disclosure Act
- Policies manual is not an offer of contract

### ***Accreditation***

The University of Missouri is accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools. The University of Missouri is a member of the Association of American Universities, an association of 63 leading research universities in the United States and Canada. Various schools, colleges and departments are also accredited by their respective professional associations and accrediting agencies.

### ***MU's Notice of Nondiscrimination***

The University of Missouri does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, age, disability or status as a protected veteran. Any person having inquiries concerning the University of Missouri's compliance with implementing Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990 or other civil rights laws should contact one of the following:

Associate Vice Chancellor of Human Resource Services/Affirmative Action Officer  
University of Missouri  
1095 Virginia Avenue, Room 101  
Columbia, MO 65211  
(573) 882-4256  
<http://hrs.missouri.edu/>;

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Director of MU Equity/Title IX Coordinator  
University of Missouri, Memorial Union S303  
Columbia, MO 65211  
(573) 882-9069

Assistant Secretary for Civil Rights  
U.S. Department of Education.

### ***Accommodations for Students with Disabilities***

The University of Missouri does not discriminate on the basis of race, color, religion, sex, sexual orientation national origin, age, disability, or status as a Vietnam Veteran. Laws Applying to Disability Accommodations in the Classroom include Title II of the ADA and Section 504 of the Rehabilitation Act of 1973 and the ADA.

If you're an MU student and you have a documented disability, please register with the Office of Disability Services to receive accommodations.

Office of Disability Services  
S5 Memorial Union,  
Columbia, MO 65211

Office Hours: Monday-Friday, 8:00 a.m.–5:00 p.m.

Voice: 573-882-4696 | TTY: 573-882-8054 | Fax: 573-884-5002

E-mail: [disabilityservices@missouri.edu](mailto:disabilityservices@missouri.edu)

Web: <http://disabilityservices.missouri.edu/register/index.php>

### ***Family Education Rights and Privacy Act (FERPA)***

The Family Educational Rights and Privacy Act of 1974 is a federal law designed to protect the privacy of educational records; to establish the rights of students to inspect and review their education records; and to provide guidelines for the correction of inaccurate and misleading data through informal and formal hearings. The law applies to any individual who is or has been in attendance at an institution and regarding whom the institution maintains educational records.

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A student's primary rights under FERPA:

1. To inspect and review educational records
2. To seek to amend educational records through informal and formal hearings
3. To have some control over the release of information about educational records

Questions about FERPA should be directed to the University Registrar's Office in 125 Jesse Hall, Columbia, MO 65211.

Learn more <http://registrar.missouri.edu/policies/ferpa.php>

Once students have matriculated to the University of Missouri, i.e. enrolled in course work, FERPA rights transfer to the student, regardless of the student's age. To release information other than directory information, students must authorize access to non-directory information for third parties, including parents (<http://registrar.missouri.edu/forms/ferpa-release-form.pdf>).

Directory information may be shared, unless restricted. Students wanting to restrict their directory information from the University of Missouri Campus Telephone Directory must change their Privacy Settings, which restricts your directory information from being released, in myZou by September 15. Learn more at <http://registrar.missouri.edu/policies/ferpa.php>

### ***Equity in Athletics Disclosure Act***

The University of Missouri complies with the Equity in Athletics Disclosure Act of 1994, Section 360B of Pub.L. 103-382. This act and accompanying federal regulations require that certain information with regard to intercollegiate athletics, including operating expenses, revenue, salaries and participation rates, be made available to current and prospective students and the public. This report is available from the Department of Intercollegiate Athletics at (573) 882-6501.

### ***University of Missouri 2012-2013 Policies Manual is not an Offer of Contract***

All statements in this publication are announcements of present policies only and are subject to change without notice. They are not to be regarded as offers to contract.

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**Note on Policy Changes**

The archived version (PDF) of the policy document is a date-stamped document that cannot be altered. Therefore, policy and procedure changes enacted during the 2012-2013 academic year will be recorded in next year's academic catalog.

*This policy document was archived August 1, 2012.*

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# MU Graduate Degrees Available 2012-2013

The following official degrees are available to students who enroll during the 2012-2013 academic year. Please refer to the degree program descriptions for additional degree options, emphasis areas, focus areas, dean's certificates and dual degrees. Students should note that online degrees, designated graduate minors and graduate certificates are listed separately. Only official emphasis areas, designated minors and graduate certificates appearing on MU transcripts are included on this list. Go to <http://gradschool.missouri.edu/programs/catalog/index> for the latest degree program updates.

## Key to MU Graduate and Professional Degrees

**Dual master's degrees** – in select cooperating programs, two master's degrees may be pursued simultaneously, with some coursework in common. The student must be eligible and admitted into both degree programs.

**Joint graduate/professional degrees** – in select cooperating programs, a graduate student may concurrently pursue course work in a professional school (e.g., law, vet med, medicine). Examples include the MD/PhD and MS/JD. The student must be eligible and admitted into both degree programs.

**DNP** – Doctor of Nursing Practice

**DVM** – Doctor of Veterinary Medicine. In some programs, the DVM may be offered as a dual degree.

**EdD** – Doctor of Education

**EdSp** – Education Specialist

**JD** – Juris Doctor or Doctor of Jurisprudence (law). In some programs, the JD may be offered as a dual degree.

**LLM** – Master of Laws

**MA** – Master of Arts

**MD** – Medical Doctorate. In some programs, the MD may be offered as a dual degree.

**M Ed** – Master of Education

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**MS** - Master of Science

**M** (any other combination). The first “M” indicates a master’s degree. The letter(s) following the M represent a discipline or degree area. For example, M Acc is Master of Accountancy.

**PhD** – Doctor of Philosophy

**post** - means following. For example, post-master’s indicates that a student must first earn a master’s degree.

**A**

- Accountancy (M Acc, PhD)
- Agricultural and Applied Economics (MS, PhD)
- Agricultural Education (MS, PhD)
- Anatomy (Integrative Anatomy) – see Pathobiology Area Program
- Ancient Studies (graduate minor)
- Animal Science (MS, PhD)
- Anthropology (MA, PhD)
- Applied Mathematics (MS) – see Mathematics
- Architectural Studies\* (MA, MS)
  - Emphasis Area: Design with Digital Media (MA, MS)
  - Emphasis Area: Environment and Behavior (MA, MS)
- Art (MFA)
- Art History & Archaeology (MA, PhD)
- Astronomy – see Physics and Astronomy

**B**

- Biochemistry (MS, PhD, Dual PhD/MD)
- Biological Engineering (ME, MS, PhD)
- Bioinformatics – for MS see Health Informatics; for PhD see Informatics
- Biological Sciences (MS, PhD)
- Biomedical Sciences
  - Emphasis Area: Biomedical Sciences (MS, PhD)
  - Emphasis Area: Comparative Medicine (MS)
  - Emphasis Area: Pathobiology (MS)
  - Emphasis Area: Veterinary Medicine and Surgery (MS)
- Biostatistics (MA) – see Statistics
- Black Studies (graduate minor)

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Business Administration (MBA, PhD)

For Finance, Management or Marketing courses,  
see Business Administration

**C**

Chemical Engineering (MS, PhD)

Chemistry (MS, PhD)

Civil and Environmental Engineering (MS, PhD)

Classical Languages (MA) – see Classical Studies

Classical Studies (MA, PhD)

Communication (MA, PhD)

Communication Science and Disorders

Emphasis Area: Speech-Language Pathology (MHS, PhD)

Comparative Medicine – see Biomedical Sciences MS with emphasis area

Computer Engineering (MS, PhD) – see Electrical & Computer Engineering

Computer Science (MS, PhD)

**D**

Diagnostic Medical Ultrasound (MHS)

Dispute Resolution – Law (LLM; select dual degrees offered)

**E**

Economics (MA, PhD)

Educational Leadership (EdD)

Offered by the Department of Educational Leadership and Policy Analysis

Educational Leadership & Policy Analysis

Emphasis Area: Educational Administration (EdSp, PhD)

Emphasis Area: Educational Leadership (EdD)

Emphasis Area: Educational Policy Studies (PhD)

Emphasis Area: Higher Education (MA, M Ed, PhD)

Educational, School, and Counseling Psychology

Emphasis Area: Counseling Psychology (M Ed, EdSp, PhD)

Emphasis Area: Educational Psychology (MA, M Ed, PhD)

Emphasis Area: Health Education & Promotion (MA, M Ed, PhD)

Emphasis Area: School Psychology (EdSp, PhD)

Electrical and Computer Engineering (MS, PhD)

Engineering (ME; interdivisional; see specific engineering disciplines for MS  
and PhD degrees)

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English (MA, PhD)  
 Exercise Physiology – see Nutrition and Exercise Physiology

**F**

Fisheries & Wildlife Sciences (MS, PhD)  
 Food Science (MS, PhD)  
 Forestry (MS, PhD)  
 French - see Romance Languages & Literature  
     Emphasis Area: French Language Teaching (MA)

**G**

Genetics Area Program (interdisciplinary PhD)  
 Geography (MA)  
 Geological Sciences (MS, PhD)  
 Gerontology (graduate minor)  
 German (MA)

**H**

Health Administration\* (MHA; dual degrees)  
 Health and Bioinformatics (MS)  
     Emphasis Area: Bioinformatics  
     Emphasis Area: Health Informatics  
 History (MA, PhD)  
 Human Development & Family Studies  
     Emphasis Area: Administration of Human Service Programs (MA, MS)  
     Emphasis Area: Child Life (MA, MS)  
     Emphasis Area: Early Childhood Development (MA, MS)  
     Emphasis Area: Family and Community Services\* (MA)  
     Emphasis Area: Family Mediation (MA, MS)  
     Emphasis Area: Family Studies (MA, MS)  
     Emphasis Area: Gerontology\* (MA or certificate)  
     Emphasis Area: Law and Family Studies (MA/MS, JD dual degree)  
     Emphasis Area: Life Span Human Development (MA, MS)  
     Emphasis Area: Youth Development\* (MA or certificate)  
 Human Environmental Sciences (PhD)  
     Emphasis Area: Architectural Studies  
     Emphasis Area: Human Development & Family Studies

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Emphasis Area: Human Nutrition, Foods, and Food Systems – see  
Nutritional Science

Emphasis Area: Personal Financial Planning\*

Emphasis Area: Textile & Apparel Management

Human Nutritional and Food Systems Management (MS)

I

Industrial & Manufacturing Systems Engineering (MS, PhD, dual degrees)

Informatics (PhD)

Emphasis Area: Bioinformatics

Emphasis Area: Health Informatics

Information Science & Learning Technologies

Emphasis Area: Educational Technology (M Ed, EdSp)

Emphasis Area: Learning & Instruction (M Ed)

Emphasis Area: Library Science (MA)

Information Science & Learning Technologies (PhD)

International Development (graduate minor)

J

Journalism\* (MA, PhD)

L

Law (dual degrees with several graduate programs; for the JD, refer to  
<http://law.missouri.edu/students/>)

Law, Dispute Resolution (LLM)

Law and Conflict Resolution (graduate minor for Journalism doctoral students  
only)

Learning, Teaching and Curriculum

Emphasis Area: Art Education (M Ed, PhD)

Emphasis Area: Business and Marketing\* (M Ed)

Emphasis Area: Early Childhood Education\* (M Ed, PhD)

Emphasis Area: Elementary Education (M Ed, EdD, PhD)

Emphasis Area: English Education\* (M Ed, PhD)

Emphasis Area: Learning and Instruction\* (M Ed)

Emphasis Area: Literacy/Reading Education (M Ed, EdSp, EdD, PhD)

Emphasis Area: Mathematics Education (M Ed, EdSp, PhD)

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Emphasis Area: Music Education (MA, M Ed, EdSp, PhD)

Emphasis Area: Science Education (M Ed, EdSp, PhD)

Emphasis Area: Social Studies Education\* (M Ed, PhD)

Library Science – see Information Science & Learning Technologies

Linguistics (graduate minor)

## M

Mathematics (MA, MS, MST, PhD, dual degrees)

Mathematics, Applied (MS) – see Mathematics

Mechanical & Aerospace Engineering (MS, PhD)

Medicine (for MD, MD/MS, or MD/PhD refer to <http://som.missouri.edu>)

Medical Pharmacology & Physiology (MS, PhD)

Medieval and Renaissance Studies (graduate minor)

Microbiology (MS, PhD) – see Molecular Microbiology and Immunology

[Mizzou Online](#) (courses and degrees available via online learning)

Molecular Microbiology and Immunology (PhD offered by the School of Medicine)

Molecular Microbiology and Immunology (cooperative MD/PhD offered by the School of Medicine)

Multicultural Psychology (graduate minor)

Museum Studies (graduate minor)

Music (MA, MM)

Music Education (MA, M Ed, EdSp and PhD) – see Learning, Teaching and Curriculum

## N

Neuroscience Interdisciplinary Program (MS, PhD)

Nuclear Engineering (MS, PhD)

Emphasis Area: Health Physics

Emphasis Area: Medical Physics

Emphasis Area: Power

Nursing\* (PhD) †

Emphasis Area: Adult Health Clinical Nurse Specialist (MS, DNP)

Emphasis Area: Adult Mental Health Nurse Practitioner (MS)

Emphasis Area: Advanced Public Health Nurse (MS)

Emphasis Area: Advanced Public Health/School health Nurse (MS)

Emphasis Area: Family Mental Health Nurse Practitioner (MS, DNP)

Emphasis Area: Family Nurse Practitioner (MS, DNP)

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Emphasis Area: Leadership in Nursing and Healthcare Systems (MS)

Emphasis Area: Nurse Educator (MS)

Emphasis Area: Pediatric Clinical Nurse Specialist (MS, DNP)

Emphasis Area: Pediatric Nurse Practitioner (MS, DNP)

Nutrition and Exercise Physiology

Emphasis Area: Exercise Physiology (MS, PhD)

Emphasis Area: Nutrition (MS, PhD)

## O

Occupational Therapy (MOT)

Online courses - [see Mizzou Online](#)

## P

Parks, Recreation & Tourism (MS)

Pathobiology Area Program (PhD)

Pathology and Anatomical Sciences (MS)

Personal Financial Planning (MS, JD/MS dual degree in cooperation with the School of Law)

Emphasis Area: Consumer & Family Economics

Emphasis Area: Personal Financial Management

Pharmacology - see Medical Pharmacology & Physiology

Philosophy (MA, PhD)

Physical Therapy (DPT)

Physics and Astronomy (MS, PhD)

Physiology - see Medical Pharmacology & Physiology

Plant, Insect and Microbial Sciences (MS, PhD)

Political Science (MA, PhD)

Psychological Statistics and Methods (graduate minor)

Psychology (PhD)

Emphasis Area: Clinical Psychology

Emphasis Area: Cognition and Neuroscience

Emphasis Area: Developmental Psychology

Emphasis Area: Quantitative Psychology

Emphasis Area: Social/Personality Psychology

Emphasis Area: Dual Program: Child Clinical and Developmental Psychology

Public Affairs (MPA, PhD)

Public Health (MPH degree offered by Public Health)

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Emphasis Area: Health Promotion and Policy (MPH)

Emphasis Area: Veterinary Public Health (MPH)

Public Health (MS degree offered by Family and Community Medicine)

**R**

Religious Studies (MA)

Romance Languages & Literatures (MA, PhD)

Emphasis Area: French (MA)

Emphasis Area: Foreign Language Teaching (French or Spanish) (MA)

Emphasis Area: Spanish (MA)

Rural Sociology (MS, PhD)

Russian & Slavonic Studies (MA)

**S**

Social Work (MSW, PhD)

Sociology (PhD)

Soil, Environmental & Atmospheric Sciences (MS, PhD)

Spanish (MA) - see Romance Languages & Literatures

Special Education

Emphasis Area: Administration and Supervision (EdD, PhD)

Emphasis Area: Autism (MA, M Ed)

Emphasis Area: Behavioral Disorders (MA, M Ed, EdD, PhD)

Emphasis Area: Developmental Disabilities (Cognitive  
Impairments) (EdD, PhD)

Emphasis Area: Early Childhood Special Education (MA, M Ed, EdD,  
PhD)

Emphasis Area: General Special Education (Cross Categorical) (MA,  
M Ed, EdD, PhD)

Emphasis Area: Gifted Education (MA, M Ed)

Emphasis Area: Learning Disabilities (MA, M Ed, EdD, PhD)

Emphasis Area: Learning and Instruction (MA, M Ed)

Statistics (MA, PhD)

Emphasis area: Biostatistics (MA)

Statistics (graduate minor)

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**T**

Teaching (graduate Minor in College Teaching)  
 Textile & Apparel Management (MA, MS)  
 Theatre (MA, PhD)

**V**

Veterinary Biomedical Sciences – see Biomedical Sciences MS degrees with  
 Emphasis Areas  
 Veterinary Pathobiology (PhD) – see Pathobiology Area Program  
 Veterinary Medicine (for DVM, see [College of Veterinary Medicine](#))

**W**

Women’s & Gender Studies (Graduate Minor)

*\*Asterisk denotes that online courses are available for this degree. [See Mizzou Online.](#)*

*† Unlike the Master’s and DNP degree programs, the Nursing Ph.D. program does not have emphasis areas.*

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# Master's Degrees Requirements and Policies

The purpose of this section is to provide an overview of Graduate School's policies. Students considering a master's degree should read all of the information below to fully understand the requirements of advanced study (e.g., residency, plan of study and time lines for completion) at MU.

MU confers a variety of master's, [dual master's degrees](#) or **dual master's/professional degrees** to students who satisfy the general requirements of the Graduate School and the specific requirements of the degree-granting department or area program. Designated **graduate minors** and **certificates** are available in some academic fields. **Thesis and non-thesis options** are available for select plans of study; students must consult with individual degree programs for more information.

## Master's Residency Requirements

The faculty of each graduate program determines its own residency requirements for master's degrees, subject to initial review by the Graduate Faculty Senate. Consult with the academic program for requirements. For academic programs that choose to maintain the traditional regulation concerning residency for master's students, the following applies: the student must complete a minimum of 24 semester hours of MU graduate courses which are taught by MU faculty and which are approved by the academic program and the Graduate School. Students who cannot fulfill residency requirements are encouraged to consider Mizzou Online for available degrees.

## Graduation and Commencement Deadlines and Forms

It is recommended that students refer often to the [Graduation & Commencement Deadlines for Master's Students](#) to avoid missing any important graduation or commencement deadlines. In addition to various deadlines, student must also submit a variety of necessary paperwork. By the end of the first year of master's work at MU, a student must begin submitting degree program forms, which will aid the department and the Graduate School in planning an academically appropriate course of study and in tracking the student's progress toward degree completion. These forms include the following:

*Program of Study.* Outlines the course work to be included in the student's degree program. Due in the Graduate School by the end of the second

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semester unless the degree can be completed in two semester. In that case, the form is due by the end of the first semester. [Plan of Study \(M1\) form \(pdf\)](#) *Request for Thesis Committee (thesis option only)*. Is a membership proposal for the student's thesis committee. Due in the Graduate School by the end of the second term. [Request for Thesis Committee \(M2\) form \(pdf\)](#)

*Report of Master's Examining Committee*. Reports the results of the thesis defense, master's comprehensive exam, project presentation, portfolio review, etc. Due in the Graduate School two weeks prior to graduation. [Report of Master's Examining Committee \(M3\) form \(pdf\)](#)

### **Choosing an Adviser**

#### *Graduate Committee Membership for Jointly Appointed Faculty*

Chapter 320 of the Collected Rules and Regulations for the University of Missouri requires that all jointly appointed faculty members will have designated Primary Appointment and Primary Departments well as affiliation with one or more involved academic programs. These affiliations affect membership status of jointly appointed faculty on graduate student committees as follows:

- Faculty members may serve as adviser/committee chair when their Primary Appointment is in the graduate student's home academic program.
- When the graduate student's home academic program is the involved academic program for a jointly appointed faculty member, this person may serve as chair/adviser with the approval of the director of graduate studies from the student's home academic department.
- A faculty member can serve as an Internal Member only when their Primary Appointment is in the graduate student's home academic program.
- When a graduate student's home academic program is the involved academic program for a jointly appointed faculty member, he or she may serve as either an Internal or External Member of the committee.

#### *Graduate Committee Membership for Adjunct Faculty*

Adjunct Faculty may serve as a Committee Chair or Committee Member only in academic programs in which they are appointed and approved for Graduate or Doctoral Faculty membership as appropriate for the student's degree (Master's or Doctoral). Service on graduate committees outside the academic program in which they are appointed requires a recommendation by the director of

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graduate studies from the student's home academic program and approval by the vice provost for advanced studies and dean of the Graduate School.

## Master's Plan of Study

### Minimum Credit Hours for Degrees

The Graduate School has established a campuswide minimum of 30 hours of graduate credit beyond the bachelor's degree (or its equivalent) for a master's degree. Fifteen of the 30-hour minimum must be selected from courses numbered at 8000 or 9000 level. No more than 40 percent of the 30-hour credit requirement can be satisfied by a combination of special investigations, Research, Readings and / or Problems courses. <http://gradschool.missouri.edu/policies/masters/requirements/plan-study-requirements.php>

### Completing a Plan of Study Form

After performing satisfactorily for a minimum of one semester, the student, with the adviser's assistance, completes the [Plan of Study form \(pdf\)](#) that outlines the plan of study for the student's graduate program. The form is forwarded through the academic program's director of graduate studies to the Graduate School for approval. The Plan of Study form must be filed with the Graduate School by the end of the student's second semester of enrollment. Upon approval of the program by the Graduate School, the student is a candidate for the degree. If a change is necessary to a student's approved Plan of Study form, a [Plan of Study Substitution form](#) must be used.

**NOTE:** An academic program may have additional credit hour (or other) requirements. Check with the program of interest to confirm degree requirements.

### Transfer Credit Toward a Master's Degree

A maximum of 20 percent of the number of credit hours required for a student's degree may be graduate credits transferred from another university, including another campus of the University of Missouri system upon the recommendation of the adviser, the approval of the academic program director of graduate studies and the Graduate School.

**Note:** the above represents a change in policy and becomes effective for graduate students beginning their master's programs during the fall semester 2001. Students who began their master's programs prior to the fall semester 2001 have the option of using the above regulation or the regulation in place at the time they began their degree program. The MU Graduate School will review the transfer request to determine if the credit meets the minimum guidelines.

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If so then the Graduate School will process the request so that each transfer course will appear on the student's transcript.

*How to Request Transfer of Credit*

1. The request or transfer credit must first be approved by the student's adviser and the department's director of graduate studies.
2. Once approved the student submits his/her Plan of Study or Course Substitution form to add the transfer work to the Plan of Study along with an unopened, official transfer transcript if one is not currently on file with the Graduate School.
3. Once the Graduate School has received the request it will be reviewed to determine if minimum requirements have been met.
4. If approved then the Graduate School will process the request so that the transfer credit appears on the MU student record.

*Minimum Transfer Requirements*

Transfer course work:

- must be less than eight years old by the time the master's degree is conferred;
- was taken for graduate credit and clearly marked as such on the transfer transcript, complete with credit hours and a grade;
- is limited to no more than 20 percent of the total course work on the student's Plan of Study form;
- is from a regionally accredited institution in the U.S. or an overseas institution that is recognized by its country's Ministry of Education as a graduate degree granting institution; and
- is not extension or correspondence credit (see policy on correspondence credit above)

**Credit Toward a Second Master's Degree**

A student who has completed one master's degree at the University of Missouri or elsewhere may, upon recommendation of the adviser and approval by the academic program's director of graduate studies and the Graduate School, present a maximum of eight hours of credit earned in the previous program toward a second master's degree.

**Forming a Master's Thesis Committee**

When a thesis is required for completion of a master's degree, the student is required to submit a [Request for Thesis Committee \(M2 form\)](#) or a [dual-masters Request for Thesis Committee \(DM2 form\)](#) for approval by the academic program's director of graduate studies and the Graduate School by the end

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of the student's second semester. A thesis committee is composed of three members of the MU faculty: a major adviser from the academic program, a second reader from the academic program and an outside reader who is a member of the graduate faculty from a different MU graduate program.

After the Request for Thesis Committee form has been filed, any changes must be submitted through the [Change of Committee form](#).

### **Approval of a Non-MU Faculty Member**

Upon approval of the academic program's director of graduate studies, the student may petition the Graduate School to allow a person who is not a member of the MU graduate faculty to serve as the third reader. The petition should include a written justification for such a request and a copy of the person's curriculum vitae. The Graduate School maintains copies of curricula vitae previously received and approved, and if such a request is anticipated, the student should contact the Graduate School to see if the curriculum vitae of a particular person is already on file.

### **The Thesis Process**

If a thesis is required, it must be the student's own work and must demonstrate a capacity for research and independent thought. A student writing a thesis should refer to the [Graduate School's Guidelines for Preparing Theses and Dissertations](#). Academic programs may have additional requirements. The Graduate School sets [deadlines for master's students](#) for completion and submission of the thesis.

### **Thesis Acceptance**

A thesis must be approved by the major adviser, a second reader from the academic program and an outside reader who is a member of the graduate faculty from a different MU graduate program. Students need to supply committee members with copies for review/evaluation. After successfully defending the thesis, the student will make any needed adjustments in format and corrections, based on input from the committee. The thesis is then submitted as PDF file on a CD ROM to the Graduate School by the [established master's deadline](#).

Review the Graduate School's web pages for additional information on the [master's thesis process](#).

A searchable [thesis and dissertation archive](#) is maintained by the Graduate School.

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## Grades at the Graduate Level-Graduation Requirement

To become eligible for a master's degree, a student must have completed all MU graduate work attempted with a GPA of 3.0 (A=4.0) or higher. Review [grading policies](#) for more information.

## Examination Process

### *Thesis Option*

Where a thesis is presented in partial fulfillment of graduation requirements, students must form a thesis committee. In the final semester, the student must successfully present (defend) the thesis. Three members of the student's committee must sign the [Report of the Master's Degree Examining Committee \(pdf\)](#), which is then forwarded through the academic program's director of graduate studies to the Graduate School by the semester deadline.

### *Non-Thesis Option*

Where no thesis is presented by the candidate, a final examination committee, composed of three members from the academic program, is designated by the academic program's director of graduate studies with the approval of the Graduate School. During the final semester, the Report of the Master's Examining Committee (pdf), signed by the director of graduate studies, is forwarded to the Graduate School by the semester deadline. All candidates for the MA or MS degrees must complete either a thesis or a substantial independent project that cannot be coauthored.

## Enrollment at the Master's Level

For general master's enrollment requirements go to the Graduate School's web page on [master's enrollment requirements](#).

### **Enrollment**

The master's candidate must be enrolled at the University during the semester or session in which a thesis is defended, a master's project is presented, or the completion of a master's comprehensive exam is certified.

### **Scheduling Exams, etc.**

Comprehensive exams, thesis defenses, portfolio presentations and the like may be offered during the regular semester session. Dates that are excluded from graduation examinations include breaks between regular semester sessions, national holidays where the University is not in operation and weekends.

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## Enrollment for Graduate Examination

Master's and educational specialist degree candidates who have completed all requirements except the final examination or the defense of the thesis/project must be enrolled when the final examination is given or the thesis/project is defended. Students who do not wish to enroll in course work during this time can enroll in "Graduate Examination" hours only.

**Note:** Registration in the "Graduate Examination" does not count toward enrollment certification. Students enrolled in the "Graduate Examination" would not be considered full-time or part-time.

Graduate students must be enrolled in at least nine credit hours to be considered full-time students and at least four credit hours to be considered half-time students during fall and spring terms. For summer terms, graduate students must be enrolled in four hours to be considered full-time and two hours to be considered half-time students.

Students with financial aid or a visa should discuss plans with the [Student Financial Aid](#) office before registering for Graduate Examination hours. International students with a visa should discuss plans with [MU's International Center](#) before registering for the Graduate Examination. Failure to do so could cause serious consequences for a student's financial aid or visa status.

## How Enrollment Status Affects Access to Campus Resources

Students who enroll in the Graduate Examination will not have a valid student ID and thus will not have regular access to the Student Health Center, MU Libraries, the Student Recreation Center or campus computing centers. If a student needs to use any of these services, registration in a one-, two-, or three-hour course (including graduate research courses) is required. Extra fees apply for access too.

## Time Limit for Master's Degree Completion

The program for the master's degree must be completed within a period of eight years beginning with the first semester of enrollment in which the student is accepted to a degree program or from the date of the oldest coursework used on the plan of study. Individual academic programs may stipulate a shorter time period. Time spent in the armed services will not count toward the eight-year limit (see also [Active Duty Policy](#)). For any extension of this time limitation, the student must petition the Graduate School by submitting a request to the adviser who, in turn, submits a written recommendation to the Graduate School that is endorsed by the academic program's director of graduate studies. The

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Graduate School will notify the adviser in writing of the final decision.

For academic advice or assistance with degree program planning, students should contact their advisers. See <http://gradschool.missouri.edu/policies/masters/requirements/>

### **Reasonable Rate of Progress for Master's Students**

Reasonable rate of progress is governed by both the campus-wide policies of the Graduate School as well as academic program regulations which may be more restrictive. Failure to satisfy the Graduate School's rate of progress policies leading to dismissal is handled by the [Request for Extension](#) process.

### **Deadline for Submission of Thesis After Successful Defense**

After successful defense of the thesis or dissertation, students must comply with their academic program's and/or the International Center's enrollment requirements. Students are required to submit their final dissertation or thesis by the end of the following semester after a successful defense unless a letter asking for an extension is submitted to the Graduate Dean by the student's adviser and program's DGS.

### **Extension Requests for Master's Students**

Extenuating circumstances that inhibit a student's rate of progress are handled through the [Request for Extension](#) process.

### **Dismissal**

Dismissals arising from violation of academic program policies may be appealed using the Appeals Process. For additional details, graduate students should refer to the [Dismissal Policy](#) and the [Extension Requests and Appeals Process](#).

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# Dual Degrees: Master's Students

As the US workforce becomes increasingly interdisciplinary, some master's students elect to concurrently pursue two advanced study degrees. All dual-degree programs at the graduate level require Graduate Faculty Senate approval. Please refer to the [A-Z list of graduate degree programs](#) to learn what is currently available.

The two types of dual master's degrees are the dual master's degree and the dual master's-professional degree.

Degree Type	Dual master's degree	Dual master's-professional degree
<b>Description</b>	This is a cooperative degree, arranged between two graduate degree granting programs and approved by the Graduate Faculty Senate.	This is a cooperative degree arranged between a graduate degree granting program and a professional degree granting program (e.g., law or medicine) and approved by the Graduate Faculty Senate.
<b>Application Processes</b>	Students must simultaneously submit a <b>separate</b> application to both degree programs to be considered for admittance. Because some students may not be aware of an approved dual-degree program before their arrival at MU, the option to participate in an approved dual-degree program may be postponed until no later than the end of a student's second semester at MU.  Start your online application process at <a href="http://gradschool.missouri.edu/admission/">http://gradschool.missouri.edu/admission/</a>	The Graduate School oversees the master's degree portion of the dual master's/professional degree.  Students must apply to <b>both</b> the Graduate School and the professional program, notifying both of their interest in the dual program.  Start your online application process to the Graduate School at <a href="http://gradschool.missouri.edu/admission/">http://gradschool.missouri.edu/admission/</a>
<b>Forms and Policies</b>	Students must fill out an <a href="#">Application for Dual Enrollment (pdf)</a> no later than the end of a student's second semester at MU.	For Graduate School policies and forms pertaining to the master's portion of the dual master's/professional degree, refer to the Master's Degrees Requirements and Policies on the website.

## Note on Dual Degrees for Law Students

Dual-degree programs with the Law School enable students to earn the Juris Doctor (JD) concurrently with a Master's or PhD degree. Dual-degree students must fulfill entrance requirements for both schools, including the graduate school's entrance exam (if required) and the LSAT. Contact the [Law School](#) for more information on their dual-degree programs.

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## Note on Dual Degrees for Medical Students

Additional information concerning medical dual degrees for both master's and doctoral students can be found on the [doctoral dual degree](#) page.

## Counting Credits

A student must complete a minimum of 18 hours of graduate courses for each degree program respectively. A minimum of 3 hours must be 8000-level courses. Additionally, the student must complete 12 hours of shared 8000-level graduate credit, which can include thesis/project research credit, as applicable.

Thus,  $18 + 18 + 12 = 48$  hours of graduate credit which is the minimum total hours for a dual master's degree program.

For example, for a dual master's degree program in Applied Mathematics and Electrical Engineering, a student's plan of study must show 18 hours of Applied Mathematics graduate course work that applies only to the Applied Mathematics degree and 18 hours of Electrical Engineering graduate course work that applies only to the Electrical Engineering degree. The additional 12 hours of shared 8000-level graduate credit brings the total earned graduate credit hours to 48.

## Transfer Credit

Up to eight hours of transfer credit may be applied as follows: to one of the two degree programs, or divided between the two degree programs. The eight hours of transfer credit cannot be applied to each degree program separately.

## Advising & Committees

There will be a separate adviser and committee for each degree program.

*Dean's Note:* the option of a combined committee structure may be included in proposals for Graduate Faculty Senate consideration, e.g., co-advisers who would also serve as outside members, plus one additional member from each degree program, for a total of four committee members.

## Dual Degree Progress Forms

Special dual master's degree program forms will be used to certify plans of study, committee members and final defense/examinations. The forms are available from the [Master's Requirements Time Line](#).

## Conferral of Dual Degrees

The Graduate School will confer two separate diplomas upon completion of all degree program requirements.

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# Educational Specialist Degrees: Requirements and Policies

This degree, offered through the College of Education, is a 30-hour program of specialization built upon the education specialist degree, of which 24 hours must be taken with MU faculty. Six semester hours must be completed within one semester or summer session to provide an in-residence experience. Students have eight years to complete the degree from the time they are first admitted to the degree program. A student is required to take a final examination, and the report of the results must be approved by a majority of the candidate's advisory committee members and submitted to the Graduate School. For additional information on the [Educational Specialist degree](#), consult the [College of Education's site](#).

## Required Educational Specialist Forms

The Graduate School obtains students' official academic records as soon as they complete their first terms of enrollment. Each of the following forms is completed at the departmental/program level, routed for required signatures and forwarded to the Graduate School in 210 Jesse Hall.

Forms are reviewed by staff in the Graduate School, given the vice provost/dean's signature if approved, and a copy is returned to the academic program office. If changes/corrections are needed, or if any signatures are missing, the forms will be returned to the department for corrective measures. If any faculty signatures are illegible, we ask that departments print a correct spelling below any such signatures.

### [Request for the Educational Specialist Advisory Committee](#) (S-1 form, PDF)

The S-1 form serves as official documentation of who serves on a student's advisory committee. It should be submitted to the Graduate School by the end of a student's second semester.

### [Plan of Study for the Educational Specialist Degree](#) (S-2 form, PDF)

The S-2 form provides the student, academic program/department and Graduate School with a plan for all the course work that will comprise a plan of study. It serves as a general plan to follow. Changes on the plan of study can be made easily by submitting a [Course Substitution form](#), available from departments or the Graduate School. The S-2 form should be submitted to the Graduate School preferably by the end of a student's second semester and no later than the beginning of a student's second year of study.

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[Report of the Educational Specialist Examining Committee \(S-3 form, PDF\)](#)

This form is submitted by the academic program/department and reports the final results of a student's comprehensive examination. Students are encouraged to consult with their departments to make sure the departments submit the S-3 form shortly after the exam has been graded.

### **Transfer Credit toward the Education Specialist Degree**

A maximum of 20 percent of the number of credit hours required for a student's degree may be graduate credits transferred from another university, including another campus of the University of Missouri system upon the recommendation of the adviser, the approval of the academic program director of graduate studies and the Graduate School.

**Note:** The above represents a change in policy and becomes effective for graduate students beginning their education specialist programs during the fall semester 2001. Students who began their education specialist programs prior to the fall semester 2001 have the option of using the above regulation or the regulation in place at the time they began their degree program. The MU Graduate School will review the transfer request to determine if the credit meets the minimum guidelines. If so then the Graduate School will process the request so that each transfer course will appear on the student's transcript.

#### *How to Request Transfer of Credit*

1. The request or transfer credit must first be approved by the student's adviser and the department's director of graduate studies.
2. Once approved the student submits his/her Plan of Study or Course Substitution form to add the transfer work to the Plan of Study along with an unopened, official transfer transcript if one is not currently on file with the Graduate School.
3. Once the Graduate School has received the request it will be reviewed to determine if minimum requirements have been met.
4. If approved then the Graduate School will process the request so that the transfer credit appears on the MU student record.

#### *Minimum Transfer Requirements*

Transfer course work:

- must be less than eight years old by the time the education specialist degree is conferred;
- was taken for graduate credit and clearly marked as such on the transfer transcript, complete with credit hours and a grade;
- is limited to no more than 20 percent of the total course work on the student's Plan of Study form;

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- is from a regionally accredited institution in the U.S. or an overseas institution that is recognized by its country's Ministry of Education as a graduate degree granting institution; and
- is not extension or correspondence credit (see policy on correspondence credit above)

### *Special Types of Credit for the Educational Specialist Degree*

A maximum of six semester hours completed with a grade of B or better may be accepted in transfer from institutions accredited to offer doctoral degrees. Off-campus courses authorized for graduate credit and offered by MU faculty members and courses offered through the Center for Independent Study taught by MU faculty may be included in the program.

### **Grades at the Graduate Level-Graduation Requirement**

To become eligible for a education specialist degree, a student must have completed all MU graduate work attempted with a GPA of 3.0 (A=4.0) or higher. Review [grading policies](#) for more information.

### **Enrollment**

The educational specialist candidate must be enrolled at the University during the regular semester session in which comprehensive exams are taken, portfolio or project is presented, etc.

### **Time Limit for Education Specialist Degree Completion**

The program for the education specialist degree must be completed within a period of eight years beginning with the first semester of enrollment in which the student is accepted to a degree program or from the date

of the oldest coursework used on the plan of study. Individual academic programs may stipulate a shorter time period.

Time spent in the armed services will not count toward the eight-year limit (see [Active Duty Policy](#)). For any extension of this time limitation, the student must petition the Graduate School by submitting a request to the adviser who, in turn, submits a written recommendation to the Graduate School that is endorsed by the academic program's director of graduate studies. The Graduate School will notify the adviser in writing of the final decision.

For academic advice or assistance with degree program planning, students should contact their advisers.

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**Reasonable Rate of Progress for Education Specialist Students**

Reasonable rate of progress is governed by both the campuswide policies of the Graduate School as well as academic program regulations which may be more restrictive. Failure to satisfy the Graduate School's rate of progress policies leading to dismissal are handled by the [Request for Extension](#) process, and the decision of the vice provost for advanced studies and dean of the Graduate School in these matters is binding.

**Extension Requests for Education Specialist Students**

Extenuating circumstances that inhibit a student's rate of progress are handled through the Request for Extension process. The decision regarding an extension is made by the vice provost for advanced studies and dean of the Graduate School, and is binding.

**Dismissal**

Dismissals arising from violation of academic program policies may be appealed using the Appeals Process. For additional details, graduate students should refer to the [Dismissal Policy](#) and the [Extension Requests and Appeals Process](#) pages on the Graduate School website.

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# Doctoral Degrees Requirements and Policies

The Graduate School grants two types of doctoral degrees: the doctor of philosophy (PhD) and the doctor of education (EdD). Consult with individual departments to learn about the availability of degrees. To obtain either doctoral degree, a student must follow the [general regulations of the Graduate School](#) as well as special requirements of the degree program. It is the student's responsibility to adhere to all regulations and satisfy the graduation requirements of the Graduate School and the degree program. An individual who has held, at any time, a regular tenure-track appointment in an MU academic program is not eligible for a doctoral degree from that department or the area program in which that department participates.

## Doctoral Qualifying Examination or Process

Prior to official admission into a doctoral program, the student must pass a qualifying examination or process. A department or area program may limit the number of times this examination or process may be attempted. After the qualifying process is complete and the doctoral committee has been confirmed, the [Qualifying Examination Results and Doctoral Committee Approval \(D1\)](#) form should be submitted to the Graduate School, no later than the end of the second semester of enrollment.

## Selecting a Doctoral Adviser

The student selects an adviser or co-advisers, by mutual consent, from doctoral faculty members who are dissertation supervisors in the department or area program in which the major work is planned. In the event that an adviser retires or leaves MU, he/she may continue to serve as a student's adviser unless there is written academic program policy prohibiting such an arrangement. If an adviser is unable or unwilling to continue to serve, the academic program, with the leadership of the director of graduate studies, will assist to ensure that a replacement is found.

## Forming a Doctoral Program Committee

The doctoral program committee must be recommended by the student's adviser and approved by the academic program's director of graduate studies and the Graduate School before one year has elapsed following the student's first registration as a doctoral student. The [Qualifying Examination Results and Doctoral Committee Approval \(D1\)](#) form is due to the Graduate School office by the end of the student's second semester.

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*Committee Changes.* Changes to the committee must be submitted on the Change of Committee form.

*Duties.* All members of the doctoral program committee will be intimately involved and will actively participate in the activities of the doctoral student at all the stages of the student's career at MU, except in some cases in the qualifying examination/process. The committee also may participate in the assessment of a student's background and potential for success in the academic program's doctoral program. Committee members may call a meeting of the full committee at any time to discuss the student's progress.

*Membership Requirements for Doctoral Committees.* The doctoral program committee shall be composed of a minimum of four members of the MU graduate faculty and will include at least three members from the student's doctoral degree program and an outside member from a different MU program. At least two of the doctoral committee members must be MU doctoral faculty. (Note: This policy is effective for students who begin their doctoral programs during the Fall 2005 Term. For students who began their doctoral programs before the fall 2005 semester, consult the appropriate catalog or the Graduate School.)

Additional committee members with specialized expertise who do not meet the criteria for the MU graduate faculty or doctoral faculty may serve on a doctoral committees as a fifth or sixth member, with special permission of the dean of the Graduate School.

*Graduate Committee Membership for Jointly Appointed Faculty.*

[Chapter 320 of the Collected Rules and Regulations](#) for the University of Missouri requires that all jointly appointed faculty members will have a designated Primary Appointment and Primary Department as well as affiliation with one or more involved departments or units. These affiliations affect membership status of jointly appointed faculty on graduate student committees as follows:

*Committee Chair/Adviser.* A faculty member may serve as adviser/committee chair when his or her primary appointment is in the graduate student's home academic program. When the graduate student's home academic program is the involved academic program for a jointly appointed faculty member, the person may serve as chair/adviser with the approval of the director of graduate studies from the student's home academic program.

*Doctoral Committee Member.* A faculty member can serve only as an Internal Member when his or her Primary Appointment is in the graduate student's home

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academic program. When a graduate student's home academic program is the Involved academic program for a jointly appointed faculty member, he or she may serve as either an Internal or External Member of the committee.

*Graduate Committee Membership for Adjunct Faculty.* Adjunct faculty may serve as a committee chair or committee member only in academic programs in which they are appointed and approved for graduate or doctoral faculty membership as appropriate for the student's degree (master's or doctoral). Service on graduate committees outside the academic program in which an adjunct member is appointed requires a recommendation by the director of graduate studies from the student's home academic program and approval by the dean of the Graduate School.

### **Doctoral Plan of Study & Degree Requirements**

The doctoral program committee provides academic program approval of the student's Plan of Study which will prepare the student for research or scholarly investigation in the chosen field of study. The plan of study includes a list of the courses and the credit to be earned. By successfully completing the plan by deadlines, a doctoral student will:

- Prepare the student for research or scholarly investigation in the chosen field of study.
- Satisfy the credit-hour and residency requirement of the academic program.
- Satisfy any special requirements (proficiency in foreign languages, collateral field, doctoral minor, other special research skills) imposed by the department or area program.
- Satisfy the Graduate School's requirement for a minimum of 15 hours of MU coursework at the 8000/9000 level (exclusive of research, readings, and problems).

The committee also recommends to the dean of the Graduate School, as part of the Plan of Study, any request for transfer of graduate credit.

Changes to the plan of study should be submitted on the [Plan of Study Course Substitution form](#).

### **Doctoral Credit-Hour Requirement**

MU requires a minimum of 72 semester hours beyond the baccalaureate degree for the PhD and EdD degrees. The student's doctoral program committee must approve all course work used to satisfy the credit-hour requirement and may require additional course work beyond these minimums.

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## Transfer Credit

The doctoral committee may recommend up to 30 hours of post-baccalaureate graduate credit from an accredited university be transferred toward the total hours required for the doctoral degree. It is the responsibility of the doctoral committee to determine the appropriateness of course work for transfer credit. All requests for exceptions to this policy must be approved by the dean of the Graduate School.

*Note:* This policy applies to students who begin their enrollment during the Fall Term 2006 and subsequent semesters. For students who began their doctoral programs prior to the fall 2006 semester, consult the appropriate catalog or the Graduate School for policies pertaining to transfer of credit.

*Extension & Correspondence Credit in Doctoral Programs.* The doctoral committee may recommend that courses taken through MU's Extension division be counted toward the credit-hour requirement. Extension or correspondence course work from institutions other than MU may not be used to meet the total hours required for the doctoral degree.

*Time Limits on Transfer Credits.* All courses to be applied to the plan of study must be completed within eight years of filing the plan.

## Grades at the Graduate Level

To become eligible for a degree, a doctoral student must have completed all MU graduate work attempted with a GPA of 3.0 (A=4.0) or higher. Review [grading policies](#) for more information.

## Foreign Language Proficiency

In general, an English-speaking student may establish foreign language proficiency, if it is required, by demonstrating an ability to translate into English two foreign languages; or by demonstrating a high order of fluency in one language; that is the ability to read, write and converse in that language and to translate that language into English and English into that language.

## Plan of Study Completion before Doctoral Comprehensive Exam

The student must substantially complete the course work outlined in the Plan of Study to the satisfaction of the doctoral program committee and the Graduate School before being declared ready for the [comprehensive examination](#).

## Doctoral Comprehensive Examination

The student must be enrolled to take the [doctoral comprehensive examination](#). It is to be administered only when MU is officially in session. The

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comprehensive examination is the most advanced posed by MU. It consists of written and oral sections. It must be completed at least seven months before the final defense of the dissertation. The two sections of the examination must be completed within one month.

Written Section. The written section or sections of the examination may be conducted in one or both of the following two ways:

1. The written sections may be arranged and supervised by the major adviser, in which case questions are prepared and graded by the doctoral program committee.
2. The major adviser may delegate responsibility for arranging, preparing, supervising and grading the written sections of the examination to one or more departmental/program committees appointed for this purpose.

*Successful Completion.* For the comprehensive examination to be successfully completed, the doctoral program committee must vote to pass the student on the entire examination, both written and oral sections, with no more than one dissenting or abstaining vote. A report of examination results, carrying the signatures of all members of the committee, must be sent to the Graduate School and the student no later than two weeks after the comprehensive examination is completed.

*Exam Failure.* A failure of either the written or oral section of the exam constitutes failure of the comprehensive exam. If a failure is reported, the committee also must include in the report an outline of the general weaknesses or deficiencies of the student's work. The student and the committee members are encouraged to work together to identify steps the student might take to become fully prepared for the next examination.

*Request for Clarification.* If the student believes that the advice given by the committee is inadequate, the student may send a written request for clarification to the committee. A copy of this request should be sent to the Graduate School as well. The committee must respond to this request in writing within two weeks and a copy must be filed with the Graduate School.

*Retaking the Comprehensive Examination.* The student who fails may not take a second comprehensive examination for at least 12 weeks. Failure to pass two comprehensive examinations automatically prevents candidacy.

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## Doctoral Candidacy & Continuous Enrollment

Candidacy for a doctoral degree is established by passing the comprehensive examination. Status as a continuous enrollment doctoral student begins the term after the term in which the comprehensive exam was successfully completed. Students must maintain continuous enrollment during their candidacy (the period after successful completion of the comprehensive examination).

*Procedure for Continuous Enrollment.* Candidacy is maintained by enrolling in 9090 Research (or 9990 Research for some Engineering students) for two semester hours each fall and spring semester and for one semester hour each summer session up to and including the term in which the dissertation is defended. Continuous enrollment provides access to an adviser's support, doctoral program committee guidance and university research facilities for completion of the dissertation. Failure to enroll continuously in two hours of approved courses until the doctoral degree is awarded terminates candidacy.

*Reestablishing Candidacy After Time Off.* Candidacy may be reestablished by paying the registration and late fees owed and completing the requirements specified by the student's doctoral program committee. Registration fees owed may not exceed the amount owed for seven terms, regardless of the number of terms beyond seven for which the student failed to continuously enroll. The committee's requirements may include a second comprehensive examination or evidence of currency in the research field as suggested by publications in refereed journals. Candidacy is reestablished when the student's adviser and the departmental, area program or divisional director of graduate studies submits a written request to the Graduate School explaining the basis for the decision. Once approved, a [Request to Re-enroll form \(pdf\)](#) must be completed by the student and sent to the department/program for processing.

## The Doctoral Dissertation

The dissertation must be written on a subject approved by the candidate's doctoral program committee, must embody the results of original and significant investigation and must be the candidate's own work.

*Enrollment Status and Reporting.* The [candidate must be continuously enrolled](#) to defend the dissertation, which can only be defended when MU is officially in session. A report of the [dissertation defense](#), carrying the signatures of all members of the [committee](#), is sent to the Graduate School before the deadline preceding the anticipated date of graduation. For the dissertation to be successfully defended, the student's doctoral committee must vote to pass the student on the defense with no more than one dissenting or abstaining vote.

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*Required Dissertation Format.* Every doctoral candidate should review the Guidelines for Preparing Theses and Dissertations from the Graduate School and should consult the director of graduate studies for academic program style requirements. All dissertation defenses shall be open to the general faculty. Academic programs are encouraged to announce dissertation defense dates to academic program colleagues.

*Submission of Dissertation to the Graduate School.* The final copy of the dissertation must be submitted to the Graduate School as a PDF file on a CD-ROM. Specific instructions are provided in the Guidelines for Preparing Theses and Dissertations.

### **Reasonable Rate of Progress**

Reasonable rate of progress is governed by both the campuswide policies of the Graduate School listed below as well as academic program regulations which may be more restrictive. Failure to satisfy the Graduate School's rate of progress policies leading to dismissal is handled by the [Request for Extension process](#).

For academic advice or assistance with degree program planning, students should contact their advisers.

Dismissals arising from violation of academic program policies may be appealed using the [Appeals Process](#). Students should also refer to the section on the [Dismissal Policy](#) for additional details.

### **Time Limits for Doctoral Degree Completion**

Three Graduate School policies govern the [Reasonable Rate of Progress](#) established for doctoral students. To determine which is applicable to a particular student, see the policies below:

*Students Who Began Their Program in Fall 2000 to the Present.* Effective fall semester 2000, a doctoral student must successfully complete the comprehensive examination within a period of five years beginning with the first semester of enrollment as a PhD student. In addition, the program for the doctoral degree must be completed within five years of passing the comprehensive examination. Individual departments or area programs may stipulate a shorter time period. For an extension of this time the student must petition the Graduate School by submitting a request to the adviser who, in turn, submits a written recommendation to the Graduate School which has been endorsed by the department or area program director of graduate studies.

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*Doctoral Students Who Passed Comps Between Fall 1994 and Summer 2000.* Doctoral candidates who passed their comprehensive examinations between the beginning of the fall semester 1994 through summer session 2000 will have no more than five years after passing the comprehensive examination to complete the doctoral degree.

*Doctoral Students who Passed Comps Before Fall 1994.* Doctoral candidates who passed their comprehensive examinations before fall semester 1994 must complete their degree programs within eight calendar years beginning with the first semester of enrollment as a doctoral student.

### **Doctoral Degree Extension Request**

Regardless of when a student entered the program or passed the comprehensive exam, any candidate requiring additional time must submit a request for an extension. On petition of the candidate and the candidate's academic program, an extension of time may be granted by the Graduate School. Academic programs specifically reserve the right to recertify currency in the discipline. All requests for extensions should be endorsed by the academic program's director of graduate studies and accompanied by a description of the process whereby currency in the discipline is certified, if required by the academic programs. (See also [Active Duty Policy](#).)

## **Doctorate of Education (EdD): Special Requirements and Policies**

### **Admission**

To be admitted into a doctorate of education program, the student must have attained the degree of master of arts with a major in education, a degree of master of education, or the quantitative and qualitative equivalent of one of these degrees from an accredited college or university.

### **EdD Qualifying Exam**

If required, the qualifying examination must be successfully completed before the plan of study is determined by the adviser and the student in cooperation with the doctoral advisory committee. This program must constitute a well organized plan of professional specialization in one of the major fields of education, with one or more supporting fields.

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**EdD Plan of Study**

A minimum of 72 semester hours of graduate level course work beyond the bachelor's degree is required for the degree of doctor of education degree. The plan of study is specifically intended to meet the professional needs of the candidate. As well as pursuing course work in the professional areas of specialization, the student must take courses in educational statistics, advanced educational statistics, methods of educational research and one research elective course. Foreign languages are not required, except as may be determined by the student's doctoral advisory committee.

**EdD Advisory Committee**

The student's adviser officially recommends for the approval by the Graduate School a doctoral advisory committee of at least five members. For students admitted Fall 2006 and later, the requirement is at least four committee members. In addition to planning the doctoral program with the student, this committee may administer a qualifying examination, which helps to assess the student's general background and potential for the EdD degree. It also guides the planning of the plan of study.

**EdD Comprehensive Examination**

When the doctoral advisory committee determines that the needed course work has been completed with satisfactory grades, it plans the comprehensive examination (a written and oral examination that includes the candidate's major field of interest) for the degree. This examination must be taken no earlier than the second year of graduate work and be completed at least seven months before graduation. A student must be enrolled to take the comprehensive examination. It is not administered unless MU is officially in session.

For the comprehensive examination to be completed successfully, the committee must vote to pass the student with no more than one dissenting or abstaining vote. If failure is reported, the committee recommends suggested work or remedial measures. (See Comprehensive Examination under PhD Degree Regulations)

The student who fails may not take a second examination for at least 12 weeks. Failure on two comprehensive examinations automatically prevents candidacy.

**Continuous Enrollment**

EdD candidates are subject to the same policies and procedures as PhD candidates. Policies can be found at <http://gradschool.missouri.edu/policies/doctoral/requirements/candidacy-enrollment.php>

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## Dissertation Defense

EdD candidates are subject to the same policies and procedures as PhD candidates. The dissertation must be reviewed and approved by the doctoral program committee. Policies can be found at <http://gradschool.missouri.edu/policies/doctoral/requirements/dissertation.php>

## Time Limits for Doctoral Degree Completion

Effective fall semester 2000, a doctoral student must successfully complete

- the comprehensive examination within a period of five years beginning with the first semester of enrollment as a PhD student.
- the doctoral degree within five years of passing the comprehensive examination.

Individual departments or area programs may stipulate a shorter time period.

For time limit policies prior to academic year 2000-2001, consult the Graduate School Catalog archive

## Dissertation Format

EdD candidates are subject to the same dissertation formatting and submission requirements as PhD candidates. The dissertation must be reviewed and approved by the doctoral program committee. Policies can be found at <http://gradschool.missouri.edu/policies/doctoral/requirements/dissertation.php>

## Dissertation Submission

The final copy of the EdD dissertation must be submitted to the Graduate School as a PDF file on a CD-ROM. Specific instructions are provided in the [Guidelines for Preparing Theses and Dissertations](#).

## Deadline for submission of dissertation/thesis after successful defense

After successful defense of the thesis or dissertation, students must comply with their academic program's and/or the International Center's enrollment requirements. Students are required to submit their final dissertation or thesis by the end of the following semester after a successful defense unless a letter asking for an extension is submitted to the Graduate Dean by the student's advisor and program's DGS.

## Doctoral Degree Extension Request

Regardless of when a student entered the program or passed the comprehensive exam, any candidate requiring additional time must submit a request for an extension. On petition of the candidate and the candidate's academic program, an extension of time may be granted by the Graduate School.

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Academic programs specifically reserve the right to recertify currency in the discipline. All requests for extensions should be endorsed by the academic program's director of graduate studies and accompanied by a description of the process whereby currency in the discipline is certified, if required by the academic programs. (See also Active Duty Policy.)

## Doctoral Dual Degrees

### Dual Doctoral-Professional Degrees

As the US workforce becomes increasingly interdisciplinary, some graduate students elect to concurrently pursue a PhD (doctoral) degree in combination with a law or medical (professional) degree. Examples include the MD/PhD and the JD/PhD. Dual degrees are cooperatively arranged between a graduate degree granting program and a professional degree granting program. The Graduate School oversees the doctoral (PhD) degree portion of the dual doctoral/ professional degree. Dual degrees are approved by the Graduate Faculty Senate.

Students must apply to **both** the Graduate School and the professional degree program, notifying both of their interest in a dual program. Please refer to the [A-Z list of graduate degree programs](#) to learn what is currently available.

Because some students may not be aware of an approved dual-degree program before their arrival at MU, the option to participate in an approved dual-degree program may be postponed until no later than the end of a student's second semester at MU.

The governing policies for dual degrees are the same for master's and doctoral students. Please refer to the [dual-degree information for master's students](#) for more information.

### Dual Degrees for Medical Students

The MD/PhD program is for the student seeking a biomedical research career. Additional years are integrated into the medical curriculum to satisfy requirements for the PhD. (A MD/MS dual degree is another option). The graduate degree (MS or PhD) is typically accomplished after completion of the MD program. PhD programs are available in diverse areas at MU.

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Students are accepted to the joint program by a single committee. Students interested in this dual-degree program should inquire at the dean's office in the School of Medicine.

### **Financial Support**

Financial support may be provided for the graduate portion of the dual-degree program. Fellowship support may be provided for the PhD portion of this program, while loan and scholarship funds may be available for the MD curriculum.

### **Applying Credit**

Students participating in the MD/PhD Program at the University of Missouri may apply up to 30 hours of credit for courses taken during the preclinical phase of the MD program towards the 72 hour requirement for the PhD degree. These MD courses, however, cannot be used to satisfy the requirement for 15 hours of 8000/9000 of graduate level course work.

The following table lists the distribution of credits for the preclinical courses among areas of study that can be used by the student and their committee in determining how many credit hours should be applied toward the PhD.

<b>Course</b>	<b>Applicable Hours Toward the PhD</b>
Biochemistry	6 hrs
Microbiology	4 hrs
Immunology	3 hrs
Pharmacology	4 hrs
Physiology	4 hrs
Pathology	6 hrs
Neurosciences	3 hrs

### **Advising & Committees**

There will be a separate adviser and committee for each degree program.

*Dean's Note:* the option of a combined committee structure may be included in proposals for Graduate Faculty Senate consideration, e.g., co-advisers who would also serve as outside members, plus one additional member from each degree program, for a total of four committee members.

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# Doctoral Plan of Study & Degree Completion Requirements

## Dual Degree Progress Forms

Special dual degree program forms will be used to certify plans of study, committee members and final defense/examinations.

## Timelines for PhD Completion & Other PhD Requirements

Policies governing doctoral degree completion, including but not limited to examinations, forms, continuous enrollment, and dissertation format, defense and submission, are detailed in the doctoral degree requirements section of the Graduate Catalog and web site.

## Conferral of Dual Degrees

Upon completion of all degree program requirements, the Graduate School and the professional school will confer separate diplomas.

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# Graduate Academic Minors

Two kinds of minors are available: designated and nondesignated.

Both designated and nondesignated minors must be approved by the student's major adviser, the student's academic program director of graduate studies and the Graduate School. In addition, the inclusion and completion of a designated minor must be approved by the director of graduate studies (or academic program chair/program director) of the academic program or interdisciplinary group offering the minor.

## Designated Minors

Designated minors consist of 9–15 hours of course work approved as a graduate minor by a single academic program or interdisciplinary group and by the Graduate Faculty Senate.

[Plans of Study for Designated Graduate Minors](#) must be submitted to the Graduate School at least one term before the conferral of the minor. Designated Graduate Minors will be conferred when the major degree is conferred. Once a student officially graduates, the notation of the designated minor will appear on the student's official transcript.

## Designated Minors Available

- [Ancient Studies](#)
- [Black Studies](#)
- [College Teaching](#)
- [Gerontology](#)
- [International Development](#)
- [Law and Conflict Resolution for Journalism Doctoral Students](#)
- [Linguistics](#)
- [Medieval and Renaissance Studies](#)
- [Multicultural Psychology](#)
- [Museum Studies](#)
- [Psychological Statistics and Methods](#)
- [Statistics](#)
- [Women's and Gender Studies](#)

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**Nondesignated Minors**

Nondesignated minors consist of course work constituting a unified plan of study that includes a minimum of nine hours of graduate course work. These minors should be listed on a student's plan of study; however, they are not listed on a student's transcript.

**Obtaining Approval for a Minor**

Both designated and non-designated minors must be approved by the student's major adviser, the student's academic program director of graduate studies, and the Graduate School.

In addition, the inclusion and completion of a designated minor must be approved by the director of graduate studies (or academic program chair/program director) of the academic program or interdisciplinary group offering the minor.

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# Graduate Certificates

A graduate certificate is not a graduate degree. Rather, it is a document verifying the successful completion of a specified group of graduate courses. Certificates are intended to help students acquire (or enhance) discipline-related knowledge and skills. Upon completion of a designated set of courses and other requirements, the name of the graduate certificate will appear on the student's official University of Missouri Transcript.

To accommodate a variety of learners' needs, MU offers two types of graduate certificate programs:

- **Stand-alone graduate certificates** allow individuals to earn graduate credit hours without having to enroll in a specific degree program. Prospective students have an option to apply to the Graduate School as a *Certificate-Seeking Student* only. Degree seeking students may also pursue this type of certificate as complementary to (or independent of) their graduate degree program.
- **Degree-dependent graduate certificates** are designed for degree-seeking students only. Further, the students must be enrolled in the particular degree program offering the certificate. In other words, this type of certificate is intended for degree seeking students who wish to pursue specialized courses or related, complementary study.

## Federal Disclosure Requirements for Stand Alone Graduate Certificates

"Final regulations published in the Federal Register on October 29, 2010, require institutions to report certain information about students who enrolled in Title IV eligible educational programs that lead to gainful employment in a recognized occupation (GE programs). **Those regulations also provide that institutions must disclose to prospective students certain information about the institution's GE Programs.** Finally, the new regulations require institutions to notify the Department if they wish to add an additional GE Program to its list of Title IV eligible programs. All of these requirements are effective July 1, 2011. The Secretary published additional regulations related to the program eligibility metrics that will be calculated for gainful employment programs in the Federal Register on June 13, 2011."

Source: Federal Student Aid, see <http://www.ifap.ed.gov/GainfulEmploymentInfo/index.html>

At the University of Missouri, the Graduate School's Stand Alone certificates are subject to federal Gainful Employment disclosure requirements. A disclosure form for each Stand Alone certificate may be found in the last section of this catalog and on our web site.

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## Certificate Admission Information

**Stand-Alone Certificate Applicants.** All students enrolled in a stand-alone graduate certificate program will be classified as Graduate Certificate-seeking graduate students. As such, to qualify for admission, they must have successfully completed the baccalaureate degree at an accredited college/university. Specific graduate certificate programs may have admission standards that exceed those for post-baccalaureate graduate students. New graduate applicants wishing to pursue a stand-alone certificate only should complete the Graduate School's [online application for admission](#) and meet the Graduate School's [minimum admission requirements](#) for all programs.

**Degree-Dependent Certificate Applicants.** New applicants applying for a degree program should complete the Graduate School's [online application for admission](#) for the degree program. Once enrolled at MU, the [Application for Graduate Change of Division, Program, Degree Emphasis or Adviser Form \(pdf\)](#) should be completed to add a graduate certificate.

### **Financial Aid: Check eligibility on both types of certificates**

Degree-dependent graduate certificate programs are federal financial-aid-eligible. Students only enrolled in stand-alone graduate certificates are potentially eligible for federal financial aid. Read our disclosure pages to learn more about the costs (tuition & fees); time needed to complete the certificate; and future placement (e.g., degree programs, jobs) of certificate holders. Next, check with MU Student Financial Aid Office to determine eligibility. Students enrolled only in a stand-alone graduate certificates are not eligible for scholarships, fellowships, assistantships, tuition waivers, etc. from the Graduate School or University of Missouri.

### **Stand-Alone Certificate Admission Requirements for Non-Degree Seeking Students**

A non degree-seeking student who is admitted into a stand-alone certificate program will be officially classified as "certificate-seeking" graduate student. To be admitted, the student must have successfully completed a baccalaureate degree at an accredited college/university. Specific graduate certificate programs may have admission standards that exceed those for post-baccalaureate graduate students.

**Transfer credit for stand-alone certificate seekers.** A maximum of three graduate credit hours which correspond directly to the MU graduate certificate program course requirements may be used as transfer credit from another

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university to satisfy the requirements for the certificate program. An original transcript from the other university, verifying graduate credit received for the requested hours of transfer credit, must be submitted to the Graduate School when the Plan of Study form is submitted. Please refer to the certificate program's site for certificate policy updates.

### Credit Hours Necessary for Certificate Completion

Graduate certificates vary in completion requirements, including the minimum credit hours. Please refer to the certificate program's site for credit hour requirements.

Up to 12 hours of graduate credit earned for graduate certificate may be applied to degree requirements for a graduate degree upon approval of the degree program.

## 2012-13 Stand Alone Graduate Certificates\*

Graduate students do not have to be enrolled in a degree program to earn this type of certificate. Find the federal disclosure information on our site or in the last section of this catalog.

<p><a href="#">Analysis of Institutions and Organizations</a> (new 8/26/11)</p> <p><a href="#">Autism and Neurodevelopmental Disorders</a></p> <p><a href="#">Center for the Digital Globe (Interdisciplinary)</a></p> <p><a href="#">Community Processes (Interdisciplinary)</a></p> <p><a href="#">Education Policy</a></p> <p><a href="#">Food Safety and Defense</a></p> <p><a href="#">Geographical Information Science (Interdisciplinary)</a></p> <p>Geriatric Care Management (new 8/26/11)</p> <p><a href="#">Gerontological Social Work</a> (new 8/26/11)</p> <p><a href="#">Gerontology</a></p> <p><a href="#">Grantsmanship</a></p> <p><a href="#">Health Ethics</a></p> <p><a href="#">Health Informatics</a></p> <p><a href="#">Higher and Continuing Education Administration</a></p> <p><a href="#">Jazz Studies</a></p> <p><a href="#">Military Social Work</a></p> <p><a href="#">Multicultural Education</a></p> <p><a href="#">Neuroscience</a> (new 8/26/11)</p> <p><a href="#">Nonprofit Management</a></p> <p><a href="#">Nuclear Engineering</a></p> <p>Nuclear Safeguards Science and Technology</p>	<p><a href="#">Nursing</a> certificates:</p> <ul style="list-style-type: none"> <li>• Adult Health Clinical Nurse Specialist</li> <li>• Child/Adolescent Psychiatric &amp; Mental Health Clinical Nurse Specialist (not accepting applicants)</li> <li>• Family Mental Health Nurse Practitioner</li> <li>• Family Nurse Practitioner (not accepting applicants)</li> <li>• Maternal Child Health Clinical Nurse Specialist</li> <li>• Mental Health Nurse Practitioner</li> <li>• Pediatric Clinical Nurse Specialist</li> <li>• Pediatric Nurse Practitioner (not accepting applicants)</li> <li>• Psychiatric Clinical Nurse Specialist (not accepting applicants)</li> </ul> <p><a href="#">Organizational Change</a></p> <p><a href="#">Personal Financial Planning</a></p> <p><a href="#">Public Health</a></p> <p><a href="#">Public Management</a></p> <p><a href="#">Science and Public Policy</a></p> <p>Teaching High School Physics</p> <p><a href="#">Youth Development Specialist</a></p> <p><a href="#">Youth Development Program Management and Evaluation</a></p>
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\*New certificates are pending approval. Check the Graduate School's site for an updated list of graduate certificates.

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## 2012-13 Degree-Dependent Graduate Certificates\*

These certificates are designed for degree-seeking students only. Further, the students must be enrolled in the particular degree program offering the certificate.

<a href="#">Accounting Information Systems</a> <a href="#">Autism and Neurodevelopmental Disorders</a> <a href="#">Center for the Digital Globe (Interdisciplinary)</a> <a href="#">Conservation Biology (Interdisciplinary)</a> <a href="#">Dispute Resolution</a> <a href="#">Education Policy (Educational Leadership and Policy Analysis)</a> <a href="#">European Union Studies (Interdisciplinary)</a> <a href="#">Grantsmanship</a> <a href="#">Higher Education Administration</a> <a href="#">Information Systems (Accountancy)</a> <a href="#">Jazz Studies</a>	<a href="#">Military Social Work</a> <a href="#">Multicultural Education</a> <a href="#">Nuclear Engineering (Nuclear Engineering)</a> <a href="#">Nuclear Safeguards Science and Technology (Nuclear Engineering)</a> <a href="#">Science and Public Policy (Public Affairs)</a> Science Outreach (new 4/04/11) <a href="#">Society and Ecosystems (Agriculture, Food and Natural Resources)</a> <a href="#">Taxation (Accountancy)</a> Teaching High School Physics
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\*New certificates are pending approval. Check the Graduate School's site for an updated list of graduate certificates.

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# Non-Degree Graduate Study For Post-Baccalaureate Students

The Non-Degree Graduate Student Program allows post-baccalaureate students to complete graduate courses without being formally accepted into a degree-granting program. Many students use this enrollment option to explore a discipline, take courses for career advancement, prepare for application to a graduate degree program, or as personal enrichment. This program is administered by the Graduate School.

Once enrolled, the non-degree graduate student may take undergraduate- or graduate-level courses but hours earned are not credit toward a graduate degree. However, if the student is later admitted to a degree-granting program, up to 12 hours of earned graduate credit may be applied toward a graduate degree program, at the discretion of faculty in the admitting academic program.

Students admitted under the non-degree seeking status have access to MU libraries, museums, laboratories, and recreational and athletic facilities.

*Note:* To manage course enrollment, some academic programs may limit available courses to non-degree graduate students. Contact the academic program in which you wish to take courses for more information.

## **Eligibility**

Applicants who hold a baccalaureate degree or its equivalent from a U.S. university or a university in which instruction is in the English language may be admitted to MU as non-degree graduate students.

## **International Student Eligibility**

International students residing in the United States who do not satisfy the above requirement and are seeking admission as post-baccalaureate graduate students must provide evidence of proficiency in English. Either a minimum score on the TOEFL or IELTS or a minimum of 24 semester credit hours in which the student maintains a 2.0 GPA (A=4.0) in a degree program in which English was the primary language is required. The minimum required TOEFL score for entrance to the Graduate School is 500 paper-based, 61 internet-based. The Graduate School also accepts a 5.5 Academic IELTS score for admission to the Graduate school. Please consult your academic program of interest to determine if it requires higher TOEFL or IELTS scores for admission.

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The University of Missouri will not issue I-20s to international students so that they may enter the United States to become non-degree graduate students.

### **Tuition and Fees**

Non-degree graduate students must pay graduate educational and student activities fees regardless of whether they take graduate or undergraduate courses.

### **Financial Aid**

Non-degree graduate students are not eligible to receive federal financial aid or veteran's benefits or to hold campus-sponsored assistantships.

## **How to Apply for On-Campus Non-Degree Study**

- Complete and submit the Graduate School Application. The Graduate School encourages applicants to use the [online application](#). The submission of a [hard-copy application \(PDF\)](#) will slow the application review process.
- Submit the [application fee](#), which is \$55 (US) for domestic applicants and \$75 (US) for nonresident international applicants. You can pay the fee online through the Graduate School's online application.
- Official transcripts or mark sheets must be sent directly from each university or college you have attended to the Graduate Admission Office, 210 Jesse Hall, Columbia, MO 65211. Transcripts/mark sheets for all baccalaureate degrees or their equivalents and any additional degrees must be sent. At this time, the Graduate School only accepts hard copies of transcripts. All transcripts/mark sheets become the property of MU.
- Standardized test scores, such as the GRE, are not required for non-degree graduate applicants.

See below for the transfer and use policies for non-degree courses taken at MU.

## **How to Apply for Online Non-Degree Study**

If you are planning to take course work online or at a distance, please contact [Mizzou Online](#) about course offerings and registration. The application process is different for online-only students.

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## Maintaining Good Standing

Non-degree graduate students must maintain a 3.0 GPA. If the cumulative GPA is less than 3.0, the student will be given one automatic probationary semester. If, after one semester of probation, the student's cumulative GPA does not reach 3.0, the student may be granted a second probationary semester following a successful written petition made directly to the dean of the Graduate School. (Summer sessions are not counted as probationary semesters.) If the student fails to achieve a cumulative GPA of 3.0 following the second probationary semester, the student will be made ineligible to enroll as a non-degree or degree-seeking graduate student.

If at any time a student's term or cumulative GPA falls below 2.0, the student will be ineligible to enroll as a non-degree or degree-seeking graduate student.

## Switching Student Status from “Non-Degree” to “Degree-Seeking”

Non-degree graduate students who want to earn a graduate degree (master's, doctoral or educational specialist) must:

- Submit official scores, if required by the [degree program of interest](#), from an appropriate graduate admission examination (GRE, GMAT, MAT). The scores must be sent directly from the examination service to Graduate School Admissions, 210 Jesse Hall, Columbia, MO 65211.
- Meet Graduate School admission requirements (see “Minimum, Campus-Wide Admission Criteria” on the [Admission process overview](#) page).
- Apply directly to the degree program of interest using a [Change of Degree form \(PDF\)](#).

At the discretion of an academic program, up to 12 hours of graduate-level courses completed while a non-degree graduate student with a grade of B or better may be applied toward a graduate degree in that academic program.

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# University of Missouri System (UM) Visiting Graduate Student Program

Effective Fall 2011, the UM Visiting Graduate Student Program replaces the UM Traveling Scholars Program. The UM Visiting Graduate Student Program offers eligible graduate students a streamlined process for applying and registering for graduate courses on other UM campuses.

To participate in the UM System Visiting Graduate Student Program, a graduate student must be a degree-seeking graduate student and in good-standing on the **home** campus and **host** campus.

To apply for this program, a [“UM System Visiting Graduate Student Application”](#) should be completed and submitted to the **home** campus Graduate office for certification, at least two weeks before the beginning of the semester. The graduate student’s **home** campus Graduate office will review the form; if approved, the **home** campus Graduate office will transmit the approved form to the **host** campus Graduate office. The **host** campus will notify the student when they are eligible to register for courses.

All course fees are paid to the **host** campus. Graduate students should contact their **home** campus Financial Aid office for more information on financial aid.

International (non-U.S. citizen) students should consult the International student office on their **home** campus to determine eligibility for this program.

## Important Points:

- No application fee is required for this program.
- The **home** campus determines maximum enrollment requirements and the transferability of courses taken at other UM campuses. At MU, all courses taken in UM Visiting Graduate Student Program will be considered “transfer courses” and are subject to MU’s graduate course transfer policies.
- Visiting UM Graduate Students are subject all **host** campus registration requirements and restrictions.
- To officially transfer courses from the host campus to the **home** campus, students must order an official transcript from the **host** campus and comply with the **home** campus’s transfer policies and processes.

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# Dual Enrollment for Senior Undergraduates

Beginning Fall 2012, qualified undergraduate students will be eligible to enroll in up to 12 hours of graduate credit during the last 30 hours of their undergraduate program. The eligibility requirements are listed below.

## Eligibility Requirement

With the approval of the undergraduate advisor, the undergraduate divisional dean, the Director of Graduate Studies, and the Graduate Dean, eligible seniors may dually enroll as an undergraduate for up to 12 semester hours of graduate credit. To qualify, seniors must:

1. Have a B average in the most recent 45 semester hours of credit.
2. Be within 30 hours of completing graduation requirements for the first bachelor's degree.

Note: Graduate degree programs may establish their own policies with regard to enrollment in and the applicability of senior dual enrollment credits.

Senior Dual Enrollment courses are considered non-degree graduate courses. Please contact the MU [Office of Student Financial Aid](#) to determine financial aid eligibility.

SPECIAL NOTE: Please be aware that reducing the number of undergraduate courses taken may negatively affect some forms of Financial Aid.

[Dual enrollment forms \(PDF\)](#) must be completed and approved by the Graduate School prior to registering for the graduate level courses.

This program also is available to seniors in other Missouri colleges. Additional information may be obtained from the Graduate School.

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# Submission Deadline, Review and Public Disclosure of Theses and Dissertations

## Formatting the Thesis

A thesis, when required for a master's program, must be written on a subject approved by the candidate's advisory committee. The thesis must be the student's own work and must demonstrate a capacity for research and independent thought. Refer to the [Master's Degree](#) section for details.

Thesis formatting guidelines may be found at <http://gradschool.missouri.edu/policies/thesis-dissertation/guidelines/>. Students must follow the style manual

## Thesis and Dissertation Research Must Be Open to Public Disclosure

Students are prohibited from using research (data, results, methods or other content) in their theses or dissertations that could restrict subsequent publication or public disclosure of these documents. Examples of restricted information include classified or proprietary materials. It is important to note that these restrictions do not apply to non-thesis or non-dissertation research that is approved by the student's adviser and allowed by University of Missouri policies. Questions regarding the applicability of this policy to thesis or dissertation content should be referred to the MU Graduate School.

recommended by their academic program. All work must be properly cited and permission to use copyrighted materials must be obtained prior to submission.

## Formatting the Dissertation

A dissertation is required for all doctoral programs and must be written on a subject approved by the candidate's advisory committee. The dissertation must include the results of original and significant investigation, and it must be the candidate's own work. Refer to the [Doctoral Degree](#) section for details.

Dissertation formatting guidelines may be found at <http://gradschool.missouri.edu/policies/thesis-dissertation/guidelines/>. Students must follow the style manual recommended by their academic program. All work must be properly cited and permission to use copyrighted materials must be obtained prior to submission.

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## About Third-Party Copyright

If your work contains material that has been copyrighted by another party, you may need to seek permission to use the material in your thesis or dissertation.

Examples of materials for which you would need to seek copyright permission include but are not limited to: third-party software, images, graphics, large portions of text and maps. If copyright permission is needed, you must submit written approval for the use of the copyrighted material along with your thesis or dissertation.

### Substituting for Copyrighted Materials in Theses and Dissertations

The Graduate School encourages students to seek permission to use copyrighted material in their theses and dissertations. Your work is published after it is submitted in approved form to the Graduate School, and it will be available to audiences who wish to know more about the subject you investigate. The more full and complete the thesis or dissertation, the better the experience for your reader and therefore the better the response to the fruits of your hard work. However, if you are unable or unwilling to obtain copyright permission for some of the materials in your research, you may substitute for the copyrighted material as described below.

*Acceptable substitutions include:*

- Redrawing or tracing of maps, images, graphics, etc
- References to URLs, printed documents, or physical locations where the copyrighted material can be found

A student whose thesis or dissertation has had copyrighted material removed prior to submission must have his or her adviser sign a document reading:

[Student's name] has removed copyrighted material from the copy of the thesis or dissertation submitted to the Graduate School for electronic publication. I certify that

- I approve the thesis or dissertation in this form;
- The student has presented accurate information as to where the removed, copyrighted material can be found

\_\_\_\_\_  
Adviser's name

\_\_\_\_\_  
Date

\_\_\_\_\_  
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## Submission Deadline for a Thesis or Dissertation Following Committee Approval

Each semester the Graduate School establishes semester deadlines for the Report of the Examining Committee (master's & EdS students); Report Dissertation Defense (doctoral students); and submission of theses, dissertations and supplemental materials. Those deadlines may be found on the Graduate School's page.

<http://gradschool.missouri.edu/policies/deadlines.php>

After successful defense of the thesis or dissertation, students must comply with their academic program's and/or the International Center's enrollment requirements.

Generally, based upon input from the thesis/dissertation committee, a student will make corrections to a thesis/dissertation. The student will prepare the final document and supplemental materials in the required [format](#) and submit everything to the Graduate School by the semester deadline. In the event the student misses the current semester deadline, the student is required to submit the final dissertation or thesis by the end of the following semester after a successful defense. If an extension is needed, the student's advisor and program's DGS must submit a request for an extension letter to the Graduate School Dean.

### Submission Requirements and Forms

A thesis or dissertation must be presented before the deadline to the MU Graduate School on a high-quality CD. The thesis or dissertation must be contained in a [Portable Document Format \(PDF\) file](#), with the appropriate margins and formatting. For the 2009-2010 academic year, the CD must be readable on a standard PC running Windows XP. [Additional electronic files must be included](#) on the CD as PDF documents with the appropriate file name. If all files will not fit on one CD, a DVD or multiple CDs may be used, as long as no single file is split between CDs.

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**Paper Documents That Accompany the Electronic Submission**

Several paper documents must be submitted with the CD, including the original signed Approval of the Committee page, paper copies of the Short Academic Abstract and Title Page, fees forms, release forms, and copyright agreement forms. See <http://gradschool.missouri.edu/policies/thesis-dissertation/guidelines/supplements-paper-ch3.php> for more information.

**Review of Theses and Dissertations by the Graduate School**

Before a manuscript can be accepted for publication in scholarly journals, it is examined by editorial board members, for conformance to specific format style guidelines in addition to validity of content. In much the same manner, MU Graduate School staff, acting as an editorial board, reviews every submitted thesis and dissertation for [conformance to University guidelines](#). Failure to meet the appropriate standards will result in the rejection of your work.

**Copies of Theses and Dissertations**

The MU library catalogs all thesis and dissertations in the Merlin system. To locate a thesis or dissertation go to the [Merlin search engine](#). Theses and Dissertations submitted Fall 2004 and later are available electronically from the MU Graduate School's searchable [Thesis and Dissertation Archive](#).

**Specific Questions about MU Theses or Dissertations?**

Specific questions should be directed to the academic advising staff of the MU Graduate School, 210 Jesse Hall, (573) 882-9575 or (573) 882-3885 or 1-800-877-6312.

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# Graduate Assistants and Fellows

## About Graduate Assistantships

The purpose of a graduate assistantship is to:

- provide a professional development opportunity consistent with a student's educational objectives:
- provide financial support for a graduate student within the context of academic program or grant-related tasks.

The assistantship is to be performed for a set period of time during which the student is expected to pursue academic and/or professional activities toward the advanced degree.

### Nature of Graduate Assistantships

Duties of the graduate assistant are assigned by the academic program chair/head, graduate committee chair, administrative supervisor or others.

Graduate assistantships are a special part of students' professional and academic/educational training.

Graduate assistants are expected to be assigned relevant professional and academic experiences that may include, among other tasks, teaching or assisting in a course (under the supervision of a director or mentor), grading for a course, assisting in an academic program-sponsored laboratory or instructional center, assisting a professor on a research project, professional conference development, tutoring, or development of administrative skills.

All projects must be supervised by a member of the graduate faculty, administrative staff or principal investigator. No graduate assistant should be assigned to a project which is primarily clerical or housekeeping. A portion of any project may have clerical elements, but all projects should incorporate decision-making, judgment, analysis and evaluation skills.

Students on graduate assistantships are discouraged from exceeding 20 hours per week of work for more than one semester from all sources both on and off campus during the period of the assistantship.

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Recipients of graduate assistantships may qualify for additional funding through competitive fellowship awards.

See also the guidelines regarding [intimate relationships with graduate students](#).

## Types of Graduate Assistantships

Teaching assistantships and research assistantships are the most common, but other types are available. See below for details.

### Teaching Assistantships

A teaching assistantship in an academic program provides a stipend to a student who is typically required to spend 10-20 hours per week (.25 to .50 FTE) during the academic year assisting in the teaching program of an academic program.

#### *Duties and Responsibilities*

The teaching assistant is expected to continue working toward the advanced degree while being a teaching assistant.

The University requires all graduate teaching assistants who do not speak English as their native language to participate in the [Orientation for New International Teaching Assistants](#), be evaluated by the [International Teaching Assistant Program](#) and be recommended as ready for teaching at the level of instruction required for the teaching assignment.

The Graduate Faculty Senate recommends that all academic programs require graduate teaching assistants to participate in the [Graduate Assistant Teaching Orientation](#).

Graduate assistants may be expected to provide their academic adviser with a written report of their academic progress at the conclusion of the period for which the teaching assistantship is awarded.

#### *Academic Freedom of Graduate Teaching Assistants*

The academic freedom of graduate teaching assistants (GTAs) is not necessarily coextensive with that of faculty. GTAs are engaged in supervised teaching or instruction activities. Supervisors are responsible for defining the nature, scope and manner of instruction to be used for each course.

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Supervisors should communicate the extent to which GTAs have discretion to introduce additional material. Graduate teaching assistants should follow the instructions of the supervisor. Graduate teaching assistants may not be penalized for expressing their own views on matters within the scope of the course, provided they adequately represent these views as their own.

In interpreting teaching evaluations, supervisors shall make every effort to distinguish legitimate critiques of the course from negative evaluations due to

- prejudice against the GTA on the basis of race, sex, sexual orientation, religion, national origin or other protected status
- disagreement with viewpoints expressed by the GTA or by students in the class.

### *Compensation*

Because of the potential for the exploitation of graduate students, any assignment of responsibilities, such as teaching a course, must be associated with fair and reasonable compensation. This precludes a graduate student from “volunteering” for any extensive service commitments to the academic programs without an appropriate stipend.

Academic programs may differentiate graduate teaching assistantship stipends by graduate student status (master’s-level, doctoral-level, first-year or experienced) or by number of hours of work required by the assistantship. Within academic programs and within each level of differentiation, stipends should generally be equivalent. Guidelines used to determine stipend levels should be available to students through the academic program or graduate committee chair.

### **Research Assistantships**

A research assistantship in an academic program is provided to a student from an external grant or academic program or University funds to enable a student to work toward the advanced degree while performing grant-related or University-funded tasks.

Students receiving research assistantships may be expected to provide their academic adviser with a written report of their academic progress at the conclusion of the period for which the research assistantship is awarded.

Academic programs shall decide whether the work required by the graduate research assistantship is directly related or not related to the student’s own program, and it shall not exceed 10-20 hours per week (.25 to .50 FTE).

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## Other Graduate Assistantships

Other graduate assistantships provide a stipend to a student who is typically required to spend 10-20 hours per week (.25 to .50 FTE) assisting in either academic or nonacademic program activities. These graduate assistantships occur across campus and may involve diverse duties covering a wide variety of functions.

Students receiving such assistantships in non-academic programs may be expected to provide their academic adviser with a written report of their academic progress at the conclusion of the period for which the graduate assistantship is awarded.

## Obtaining a Graduate Assistantship

Most assistantships are granted to graduate students by the academic program to which they belong, either as part of the admission offer or through professional relationships that students develop with faculty members after entering the program. Contact your academic program for more information.

Occasionally, assistantships that do not require program-specific expertise are available, and they can be posted and viewed at [HireMizzouTigers.com](http://HireMizzouTigers.com).

### Eligibility

To hold a graduate assistantship, a student must be (a) admitted to a department or area with a specific graduate degree objective and (b) enrolled and making satisfactory progress toward degree attainment during the period of the assistantship, based on that department's criteria for satisfactory progress.

Each department or unit shall establish its own documented procedures for recruitment, selection, retention and dismissal of graduate assistants in accordance with MU graduate policy and Affirmative Action/Equal Opportunity guidelines.

### Notice of Assistantship Offer

Academic programs should provide students with an official signed letter of award, informing them of assistantship expectations, responsibilities and compensation.

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## **Making Duties Known**

When the graduate assistant is hired, procedures and policies relative to the position shall be made available to each graduate student through the academic program.

## **Minimum Course Load**

Individual academic programs may establish a required minimum course load for funded students (e.g., nine credits of graduate work per semester).

## **Deadline for Acceptance of Financial Support**

The University of Missouri is a signatory to the Council of Graduate Schools policy regarding the offering and acceptance of financial aid. Specifically, students are under no obligation to respond to offers of financial support for the coming academic year before April 15.

When a student accepts an offer before this date, and subsequently desires to withdraw that acceptance, the student may submit in writing a resignation of the appointment at any time. However, an acceptance given or left in force after April 15th commits the student not to accept another offer without first obtaining a written release from the institution to which a commitment has been made.

## **Benefits**

A graduate student in a qualifying appointment is eligible for medical insurance and tuition benefits if the appointment meets the minimum hours per week (FTE), stipend level requirements and appropriate duration of appointment.

### **Graduate Student Tuition Support Program**

To receive financial support for resident tuition, an appointment must be:

- continuous for full semester or academic year
- at least quarter-time (.25 FTE)
- at a minimum stipend level established early in the spring semester for the next academic year.

Tuition support is subject to time limitations for the duration of fee waiver support. The non-resident portion of tuition is remitted if appointment stipend meets the minimum level, as published in the Graduate Student Tuition Support Program section. Tuition may be supported during for summer sessions if certain conditions are met.

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# Performance and Renewal Evaluation Criteria

## Make Evaluation Methods Apparent

The responsibilities of the graduate assistantships and the method by which students will be evaluated should be provided in writing to the student by the immediate supervisor at the beginning of the assistantship.

## Conducting Evaluations

The faculty member or staff person who supervises the assistant's work must conduct a timely (at least yearly) written evaluation or checklist regarding the student's performance and provide a copy of that evaluation to the student and to the chair/director for placement in the student's file. This evaluation should take the following criteria into account:

- prompt, efficient and accurate completion of assigned tasks
- ability to work independently once tasks are explained
- ability to analyze problems and find solutions
- reception of adequate evaluations by students for instructional and tutoring assignments in courses, laboratory and clinical settings
- cooperation with mentor, director and other assistants
- professional and ethical behavior in all assigned tasks and duties including course studies and research

Opportunities for improving performance should also be outlined.

## Equal Treatment is Essential

Evaluations of performance shall not be influenced by sex, age, disability, race/ethnicity, color, religion, marital status, veteran's status, national or ethnic origin, or sexual orientation, nor shall they be influenced by students' exercise of their First Amendment freedoms of expression and association.

See also "Academic Freedom of Graduate Teaching Assistants" in the [Types of Assistantships](#) section for more guidelines regarding equal treatment in the evaluation of teaching assistants.

An [appeal process](#) is available for graduate assistants who feel they have not been fairly evaluated.

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## Renewing Assistantships

Assistantships without a fixed term specified in the initial letter of offer may, at the discretion of the academic program, be renewed if the following criteria are met:

- funding is available
- academic program guidelines for funding duration or limited semesters of support of a student are met
- the student is making satisfactory academic progress
- the student's assistantship performance is judged to be satisfactory by his or her supervisor
- the student's professional and ethical behavior in all assigned tasks and duties is judged to be satisfactory, including course studies and research.

Where the number of years of funding is within those specified in the initial letter of offer, an assistantship must be renewed if these five criteria are met.

## Graduate Assistant Appeals: Evaluations, Dismissal, Compensation Issues

### Step 1: Working Toward a Resolution Within the Parties

Students who believe their academic program evaluation has been prejudiced or capricious or who believe that their stipend is not commensurate with that of other graduate students having the same status in their academic program must first attempt to resolve the matter with the faculty/staff member or appropriate administrative leader of the school, college or unit responsible for the assistantship.

### Step 2: Written Appeal Within the Unit

If unsuccessful, the student may then file a written appeal to the director of graduate studies for consideration by the appropriate graduate committee. This appeal must be filed within 60 days of the evaluation or dismissal. A written determination of the appeal shall be presented to the student and supervisor. If the assistantship is not in an academic program, the MU vice provost/dean of the Graduate School would consider the appeal.

### Step 3: Presenting the Appeal to the Graduate School Office

If no action is taken on the appeal within 30 days of its filing or if the matter is not resolved to the student's satisfaction, the student may present the original appeal and documentation to the MU vice provost/dean of the Graduate School.

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If the vice provost/dean determines that the appeal might have merit, the vice provost/dean will request a review by a subcommittee of the Graduate Faculty Senate. Upon subcommittee recommendation, the full Graduate Faculty Senate will meet and serve as the final level of appeal.

During the appeal process, if an evaluation or assistantship renewal or dismissal is overturned, the supervisor has the right to appeal this decision in writing to the Graduate Faculty Senate.

## Leaves of Absence

It will be the responsibility of students to resolve all issues pertaining to their support (e.g., research assistantship, teaching assistantship, fellowship or scholarship) with their adviser or other relevant authority before taking an approved leave of absence. These issues include the date when support will be terminated and whether or under what conditions students will be reinstated for support upon their return.

### Notifying Administrators

A graduate assistant unable to fulfill the duties of his or her appointment because of illness or injury shall notify the administrator of his or her major unit as soon as circumstances permit. Similarly, a graduate assistant unable to fulfill the duties of her or his appointment because of birth or adoption of a child shall notify the administrator of her or his major unit as soon as circumstances permit.

### Assessing Time and Nature of Leave

The appointing unit may adjust the graduate assistant's workload duties as the assistant's physical circumstances reasonably dictate. If total absence from duties becomes necessary, the major unit shall hold the appointment, provided the graduate assistant is still enrolled, for a period of two months or until the end of the appointment period or of the semester, whichever should occur first.

The graduate assistant shall have the right to return to the assistantship, within the original terms of the appointment, at such time as he or she is able to reassume the duties of the position.

### Re-Entry Process

Before the completion of the leave of absence, students must notify the academic program director of graduate studies (DGS) and the Graduate School so that the re-entry process can be initiated.

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## About Internal Graduate Fellowships (for Mizzou Students Only)

The University of Missouri offers several fellowships through the Graduate School and/or individual degree programs. Unlike graduate assistantships, no additional service or work requirement is associated with these fellowships.

The Graduate School sponsors two major fellowship programs: a Spring Fellowship Competition and the Supplemental Graduate Fellowship Program. Both of the programs require nomination by a director of graduate studies, who submits the application(s) directly to the Graduate School. Students are not allowed to apply on their own.

*DGS Note:* The [Peace Corps Fellows Program](#), for returning Peace Corps volunteers, is a separate program with its own application form.

### Criteria for Nomination

Fellowships are awarded on a competitive basis in recognition of a student's demonstrated scholarship, scholastic and creative promise, and/ or financial need. To be eligible for consideration, a student must be admitted to a graduate program with a specific graduate degree objective and must be enrolled in graduate academic course work.

### Eligibility

Fellowship recipients are required to be full-time students (at least nine credit hours or have an approved full-time graduate status form) during the period of appointment and may hold another smaller fellowship or engage in remunerative employment.

Students that have extenuating circumstances, and thus are temporarily unable to fulfill nine credit hours of course work, may appeal to the Graduate School on a case-by-case basis.

The Graduate School allows students to be continuously enrolled as full-time students by enrolling in two hours in fall and spring semesters, and one hour in summer after they have passed their comprehensive exams.

### Benefit-Eligible Employees are Not Eligible

Benefit-eligible employees of the University of Missouri are ineligible for fellowship stipend awards because of the potential appearance of a conflict of interest.

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## Fellowship Duties

There is no service or work requirement associated with fellowship awards.

## Maintaining Fellowships Eligibility

To maintain eligibility, the following criteria must be met:

- funding is available, or limited semesters of support of a student are met;
- academic program guidelines for funding duration of a student are met; and
- the student is making satisfactory academic progress.

## Receiving the Stipend

Monthly stipend payments are scheduled, and checks are available at the Cashier's Office, 15 Jesse Hall, or can be direct deposited upon completion of the registration process. To qualify for the spring semester fellowship check, a recipient must have successfully completed the fall semester and be enrolled for a minimum of nine hours for the spring semester.

## Discontinuation of Fellowship Support

The continuation of a graduate fellowship may be denied to recipients under the following conditions:

- failure to satisfy [Scholastic Grade Requirements](#) as specified in the Graduate Catalog.
- violations of the [Code of Conduct](#) as specified in the Graduate Catalog.
- failure in qualifying examinations, preliminary examinations, comprehensive examinations or failure to make satisfactory progress in a graduate program.

## Nomination Process and Forms

In-depth information, including the nomination forms, may be found on the Graduate School site. Guidelines are available for the Spring Fellowship Competition and the Supplemental Graduate Fellowship Program.

## Taxes

Fellowships and assistantships are taxable!

All payments received by graduate students, in the form of assistantships or fellowships, are considered taxable income by the federal government.

## Assistantships

Assistantships are paid as earnings and are taxed at the time of payment.

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## **Fellowships**

Fellowships can be paid through several different mechanisms, and the mechanism selected determines whether taxes are withheld at the time of payment. Fellowships through the Graduate School are paid in monthly stipends in the fall and spring semesters and do not include withholding of taxes.

## **Arranging for Withholding**

If a student decides taxes should be withheld from his or her fellowship payment, there are several methods that can be used. The most direct, if the student also has an assistantship in a department, is to complete a new W-4 form, requesting additional withholding from the monthly assistantship payment.

Changes in W-4 forms are handled directly by the Payroll Office, 16 Jesse Hall. This office can also assist if additional taxes should be withheld from the assistantship payments.

## **If Taxes Have Not Been Withheld**

Important: If no taxes are withheld during the year, you still have a tax liability with the federal government.

At the time of filing income taxes, if taxes haven't been withheld, the fellowship is reported as unearned income. No W-2 or Form 1099 will be issued by the University identifying this amount. However, it is still the student's responsibility to report the fellowship amount. This requires completing the IRS 1040 long form.

## **Volunteer Taxpayer Assistance**

Volunteer Income Tax Assistance provides free tax assistance to low income, disabled, homebound and English as a second language taxpayers. Note: Taxpayers must bring the following information with them to the taxpayer assistance site:

- Social Security cards for you, your spouse and each of your children (all individuals claimed on the income tax return)
- Current year's tax forms and preparation booklet
- Copy of last year's federal and state income tax return (optional but helpful)
- Forms W-2 for every job you or your spouse worked last year
- A voided personal check or deposit slip, if you want your refund directly deposited
- Unemployment compensation statements (Form 1099G)

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- SSA-1099 if you received Social Security Benefits
- All Forms 1099 showing interest and/or dividends
- Total you paid for childcare expenses and the name, address, and Tax ID/ Social Security Number of the childcare provider
- Total of the student loan interest you paid
- Form 1098 for you, your spouse, and/or dependent children if you paid tuition

This service is provided for students and families with incomes less than \$50,000. Refer to the Graduate School website at <http://gradschool.missouri.edu/financial/assistantships-fellowships/tax.php> for dates of operation and locations.

The MU Cashier's office offers tax information for non-resident international students at <http://cashiers.missouri.edu/>.

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# Measuring Graduate Student Progress

## **Annual Requirement: Review of Graduate Student Progress**

Since 2006, the Graduate School has required that all graduate students file an annual report on their academic performance, degree program milestones, and related academic/scholarly/research/creative achievements. Faculty mentors (advisers) are required to review their advisees' annual reports to assess if their advisees are making satisfactory progress toward degree completion. In some cases, the director of graduate studies and/or department chair also reviews the students' annual reports and faculty member responses.

Each division/area/department degree program must inform all students of the annual progress reporting requirement. This includes printed, published or electronic materials provided to graduate students (e.g., handbooks, orientation materials, guidelines, web site.)

## **Graduate Student Progress System ([gsps.missouri.edu](http://gsps.missouri.edu))**

The Graduate Student Progress System (GSPS) is a web-based reporting system where students document their progress toward degree completion. All graduate students (i.e., in all disciplines) are required to submit an annual progress report by starting/updating a GSPS record. Faculty members use the GSPS to review students' annual reports, assess their progress and provide feedback to the students.

At a minimum, students are required to report on academic progress, completion of required forms, award and honors, conferences, presentations, publications, service activities, creative activities, employment, funding activity, and job placement. Academic program faculty or administrators may require additional indicators of performance or achievement to accommodate the unique needs of their programs

Additional information on measuring graduate student progress is at [gradschool.missouri.edu/policies/progress/](http://gradschool.missouri.edu/policies/progress/).

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# Grading & Credit Policies

## Grading Scale

Graduate students' grades in all courses counting toward an advanced degree may be reported as: A +/-, B +/-, and C +/- . Faculty members are not required to use a plus/minus grading scale; that decision should be based on the faculty member's evaluation of student performance and/or policies of their academic program.

Grade point averages are calculated as: A+ (4.0), A (4.0), A- (3.7), B+ (3.3), B (3.0), B- (2.7), C+ (2.3), C (2.0), and C- (1.7).

The Graduate School considers grades of C+, C and C- as passing grades; however, grades in the C range may not be acceptable for specific programmatic requirements and may result in the student being unable to maintain a 3.0 cumulative average. No D grade may be awarded graduate student, and a grade of F means the work has not satisfied the minimum requirements of the course. W denotes withdrawn passing and does not affect a student's grade point average.

## S/U Grading

Graduate students may be graded satisfactory/unsatisfactory (S/U) in graduate-level courses only when those courses are designated as "graded on S/U basis only" in the online Schedule of Courses available through myZou.

## Incompletes

An incomplete grade (I) may be recorded when the student's work is incomplete but otherwise worthy of credit, or when the instructor is unable to assign a grade at the end of the semester. The student must finish this work (Problems and Research courses exempted) within the next calendar year of residence.

If the work is not completed after one calendar year, the request to change an "I" grade will require an accompanying letter of justification from the instructor. Although grades of "I" do not automatically convert to an "F" if not completed, academic programs or the instructor may establish conditions or regulations pertaining to "I" grades that are more stringent.

## Unreported Grades: NR

When grades are not reported by the instructor, these "Blank Grades" will be recorded as "NR" (Not Recorded). The NR designation will remain on the student's transcript until a letter grade is submitted. If a letter grade is not

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submitted, the NR can remain on the student's record indefinitely and will not revert to an "F".

### **Grade Changes by Faculty**

Faculty members may change grades within the policies set by the faculty. Grade Change Forms, available from the faculty member's academic unit, must be completed, signed and submitted to the Office of the University Registrar - Records Dept., 126 Jesse Hall.

### **Graduate-Level Credit**

No graduate credit is given for courses numbered below 7000. Graduate students taking 7000-level courses that are cross-leveled with 4000-level courses will be given additional course requirements in order to warrant graduate credit received for those courses. Courses at 8000/9000 level are primarily for graduate credit. 8090/9090 research (8990/9990 Research for Engineering students) is reserved for master's and doctoral degree students working on a thesis or dissertation.

### **Grade Point Average**

A graduate student's grade point average is based on the student's entire graduate record at MU. To remain in good standing, a graduate student must maintain a cumulative GPA of 3.0 or better.

### **GPA and Probation**

At the end of each semester, graduate students with a cumulative GPA below 3.0 are placed on probation. If at the end of the following semester the cumulative GPA is 3.0 or better, the probationary status is removed. A student on probation failing to raise the cumulative GPA to 3.0 may, on the recommendation of the department or area program, be allowed a second probationary semester.

A student is subject to dismissal upon failure to raise the cumulative GPA to 3.0 by the end of the second probationary semester, or at any time a semester/term or cumulative GPA falls below 2.0. *Note:* Summer session is not counted as a semester.

### **GPA & Graduation**

To graduate, a student must have an overall GPA of 3.0 in all graduate courses taken at MU and not just those courses listed on a plan of study.

For more information on grading, credit and related policies go to <http://gradschool.missouri.edu/policies/progress/grading/>.

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# Probation and Termination (Dismissal)

In addition to dismissal for failure to meet the usual examination and grade requirements, departments and graduate degree-granting area programs have the right to place on probation and, after at least 30 days of probation, to dismiss from their program any graduate student who is deemed to be making insufficient academic progress or whose work is not of the quality required. The faculty adviser or academic program chair must inform the Graduate School as soon as the student is notified and the probationary period begins.

The dismissal may occur at any time during a student's work toward a graduate degree.

For additional information on satisfactory progress, probation, termination, extension and appeals go to the [Extension and Appeals of Satisfactory Progress Infractions section of this policy manual \(click here to go to that section\)](#), or go to the web page version of the catalog, found at <http://gradschool.missouri.edu/policies/progress>.

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# Extension and Appeals of Satisfactory Progress Infractions

The progress of each graduate student is evaluated annually by the student's adviser and/or director of graduate studies (DGS).

The definition of "satisfactory progress" and procedures for its verification may vary among departments/programs. If a department/program has instituted timelines that differ from those applying generally to graduate students (see below), these timelines should be made available to students from their entrance into the graduate degree program. If a student is authorized to diverge from progress timelines established by either the department/program or the Graduate School, this fact should be documented in written form and endorsed by the student's adviser and DGS.

## Progress toward Degree

Full-time students (those taking 9 hours or more per semester) should follow the time frames associated with degree programs discussed in the Graduate Policy Manual under [Master's Degrees](#) and [Doctoral Degrees](#). They must submit required forms on time and maintain a grade point average of 3.0 or better. Furthermore, they must successfully undergo their departments' annual review processes.

Part-time students should file a timeline for successful degree completion with their departments and the Graduate School. This timeline should be endorsed by the director of graduate studies and a prospective adviser by the end of the first calendar year of admission into the department/program. When these timelines conflict with time to degree guidelines laid out in the Graduate Policy Manual's sections on master's and doctoral degrees, they must receive the endorsement of the dean of the Graduate School.

## Distinction Between Requests for Extension and Appeals

A "Request for an Extension" and an "Appeal" are distinct processes for dealing with problems related to "satisfactory progress." A "Request for Extension" is the appropriate course of action when a student has failed to meet satisfactory progress provisions of the Graduate School. The "Appeal Process" should be followed when a department/program has dismissed a student after the required probationary period.

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## Request for Extension

When there has been unsatisfactory progress with respect to meeting Graduate School time to degree limits, the student may file a written request for an extension with the dean of the Graduate School. The extension must be endorsed by the department/program's director of graduate studies and the student's major adviser and include a timeline for completion of the degree. If an extension is granted by the dean, the student will be given a specified period of time to meet the requirements for progress to degree. Please contact the Graduate School for more information.

## Termination

In addition to dismissal for failure to meet the usual examination and grade requirements, departments/programs have the right to place on probation, and, after a period of probation, to dismiss any graduate student who is deemed to be making insufficient academic progress or whose work is not of adequate quality as determined by the department/program. The faculty adviser or academic program chair must inform the Graduate School as soon as the student is notified and the probationary period begins. Probation and dismissal may occur at any time during a student's work toward a graduate degree.

When a department/program determines that a student is not making satisfactory progress, the director of graduate studies in the program and/or faculty adviser will recommend a face-to-face meeting between the student and the faculty adviser. If, after this meeting, the department/program and the student can agree on a plan to remedy the situation, the faculty adviser (or DGS) and the student will jointly sign a document enumerating steps to take. If, on the other hand, the department/program and the student disagree on issues of progress, the DGS or chair may send the student a letter placing the student on probation. Probation must last a minimum of 30 days.

The letter placing a student on probation must include an explicit statement of what must be accomplished and by what date in order for the student to be removed from probation and returned to good standing in the department/program. If the student does not comply with the conditions of probation, a letter (signed by the DGS) will be sent to the student with notification of dismissal from the degree program. Termination letters must inform the student of the right to appeal, first, to the department/program, and second, to the Graduate Faculty Senate. A copy of a termination letter must be sent to the graduate dean at the same time it is sent to the student.

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Students have the right to appeal dismissal from their degree programs. As long as a student is in an appeal process, the student should maintain enrollment and continue working on degree program requirements. A student's first appeal of dismissal must be made to the department/program. If the student does not appeal, the Graduate School will send the student an official notice of dismissal from the program.

Students should notify their DGS in writing that they are appealing dismissal. A copy of the appeal letter addressed to the DGS should be sent to the graduate dean. Departments and programs organize their own appeals processes. If the department/program does not reverse its decision, the DGS will notify the Graduate School that the student has gone through the probationary period and the appeal process and has been dismissed.

## Process of Appeals to the Graduate Faculty Senate

Students may appeal dismissal from a graduate degree program to the Graduate Faculty Senate. An appeal to the Graduate Faculty Senate can be made only after all internal appeals to a student's program/department have failed. The appeal must be based upon the program/department's failure to adhere to its or the Graduate School's published rules and regulations. A student wishing to appeal dismissal must send a letter addressed to the dean of the Graduate School within two weeks of dismissal.

Once the intent to appeal is received by the dean of the Graduate School, the following procedures will be followed:

1. The dean of the Graduate School or a representative will meet with the student to discuss the situation. If, after this meeting, the student wishes to make an appeal to the Graduate Faculty Senate, he or she will submit a statement to the Graduate School describing the basis of the appeal and containing any correspondence or other documentation relevant to the appeal. The graduate dean will notify the Graduate Faculty Senate, which will appoint an ad-hoc Appeal Committee consisting of five senators who are not members of the academic program involved in the appeal.
2. The Graduate School will provide information to the student, the department/program and members of the ad-hoc GFS Appeal Committee regarding the content, process and regulations/policies pertaining to the appeal. Upon compilation of the appeal file, the office of the graduate dean will send a copy of file materials to the members of the appeal committee and to the

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department/program. If the program/department wishes to respond in writing, its statement will be distributed to the appeal committee, the student and representatives from the Graduate School.

3. A hearing will be scheduled as soon as all parties can meet: the student (and an adviser from the university community, if desired), representatives from the department/program, the appeal committee and the Graduate School. At this hearing, the department or program will first invite the student making the appeal to present the case discussed in the written statement. The appeal committee may ask questions at this point, and once its questions have been answered, will give the program/department the opportunity to defend its dismissal of the student. Following further questions from the appeal committee, the hearing will be adjourned.
4. The appeal committee will meet to make a decision. This decision will be conveyed in writing to the student, the director of graduate studies and chairperson of the department or program, the graduate dean, the Graduate Faculty Senate president, and any other appropriate party named in the appeal.

To view this information (and related) policy information online, go to <http://gradschool.missouri.edu/policies/progress/extension-appeal.php>.

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# Honoring Deceased Graduate Students

The following policies and procedures apply in instances in which a graduate student dies before being awarded a degree.

## **Student Completed All Degree Requirements**

If the student has completed all degree requirements, the college or school's representative (dean, assistant/associate dean or director) will contact the Office of the Provost and the vice provost for advanced studies and dean of the Graduate School to nominate the individual to receive a posthumous degree.

The diploma for the degree that the student was pursuing will be prepared in the same manner as if the student had lived. This diploma may be presented to the family of the deceased in a special ceremony, at Commencement or in whatever manner is deemed appropriate.\*

## **Student Did Not Yet Complete Degree Requirements**

If the student had not completed degree requirements but was making satisfactory progress at the time of death, a dean's certificate honoring the student can be provided by the appropriate academic unit(s). These certificates may be designed and presented in a manner that is fitting to the circumstances.\*

*\*In some instances, presentation of the degree or certificate to family members may be made at a remembrance ceremony.*

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# Application for Graduate Admission

## Eligibility

At a minimum, students are required to report on academic progress, completion of required forms, award and honors, conferences, presentations, publications, service activities, creative activities, employment, funding activity, and job placement. Academic program faculty or administrators may require additional indicators of performance or achievement to accommodate the unique needs of their programs

Because requirements vary, you must refer to a degree program's graduate admission page to learn about specific admission criteria, application deadlines, eligibility and application process. To find a department or program's Web page, refer to the A-Z list of graduate degrees. Click on the degree of interest to find the Web page.

1. All applicants must have a U.S. bachelor's degree or its equivalent from an accredited institution. Bachelor's degree or equivalent degree from a college or university recognized by a regional accrediting agency.

If your degree is from a U.S. college or school, the institution must be approved by one of the following U.S. Regional Accrediting Bodies:

- Middle States Association of Colleges and Schools
- New England Association of Colleges and Schools
- North Central Association of Colleges and Schools
- Northwest Association of Colleges and Schools
- Southern Association of Colleges and Schools
- Western Association of Colleges and School

If your degree is from a non-U.S. college or school, the institution must be recognized and approved by the Ministry of Education or Commission responsible for higher education in the country where the degree is earned.

2. 3.0 or better grade point average in the last 60 hours of baccalaureate coursework (for applicants with less than a master's degree).
3. Standardized test scores such as the GRE or GMAT (if required by the academic program).

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4. Acceptable TOEFL or IELTS test scores (for non-native English speaking applicants only)
  - TOEFL minimums: 500 paper-based, 61 internet-based
  - IELTS minimum: 5.5 Academic score
5. International applicants must show minimum level of funding: see <http://international.missouri.edu/come-to-mu/students/estimated-expenses/index.php>

#### Overview of the Admission Process

These are basic steps for [applying to a degree program](#) (master's, doctoral or educational specialist). Your materials will be reviewed by both the Office of the Graduate School and the degree program or certificate program to which you've applied. The process is different for [online students](#) and [on-campus, post-baccalaureate \(non-degree\) applicants](#).

**Step 1. Student submits online application and supplemental materials to the Graduate School and degree program by the stated deadline.**

**Step 2. The complete application is review by the academic program.**

Note: The admissions committee for each academic program decides who will be accepted, based on additional [eligibility requirements by that degree program](#). During this process, the committee will review the documents you sent directly to them, as well as the information you sent to the Graduate School. You might receive correspondence at this point regarding whether you have been *recommended* to the Office of the Graduate School for admission, but this is not the final step in the process.

**Step 3. The Graduate School conducts a final review of your application packet to make sure the student meets the University of Missouri's minimum admission requirements.**

Note: If you are an [international applicant](#), you may need to [provide information about funding](#) (for student visa eligibility) before admission can be finalized.

**Step 4. If accepted or denied, the student receives an official letter from the University of Missouri Graduate School.**

**Step 5: Admitted students follow the instructions for accepting the offer of admission to Graduate School and any funding offer (e.g., fellowship, assistantship).**

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# How to Apply to a Graduate Degree Program

Most prospective students who want to earn a master's, doctoral or educational specialist degree should use the following instructions. They apply to on-campus, degree-seeking students including

- New domestic and international applicants
- Former students of Mizzou Online (previously known as MU Online and MU Direct) looking to work toward a degree on
- Current and former Mizzou undergraduate students (with the exception of the Master of Accountancy, Master of Occupational Therapy, and the BSIE/ Master of Business Administration programs).
- Returning MU graduate students (degree and non degree seeking) applying for a new degree program who have not been enrolled for one semester or more

## Submit to Your Academic Program

Your program of interest sets the [application deadline, eligibility criteria and required application materials](#) beyond what the Graduate School must receive. Extra materials may include a program-specific application, letters of recommendation, a statement of purpose and/or a résumé.

Some programs require an extra form or statement from those who wish to be considered for assistantships, fellowships or other funding packages.

Many programs allow you to submit pieces of their required materials within the Graduate School's online application.

## Submit to the Graduate School

No action will be taken on your admission file until your application fee is received by the Graduate Admission Office (210 Jesse Hall / Columbia, MO 65211).

- **Complete and submit the Graduate School Application.** The Graduate School encourages applicants to use the [online application](#). Our 90+ graduate degree programs have instant access to review applications that have been submitted online. The submission of a [hard-copy application \(PDF\)](#) will slow the application review process.
- **Submit the application fee**, which is \$55 (US dollars) for domestic applicants and \$75 (US dollars) for nonresident international applicants. You

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can pay the fee online through the Graduate School's online application. (Learn more about the [application fee and opportunities to obtain a waiver.](#))

- **Official transcripts or mark sheets**  
Official transcripts or mark sheets, must be sent directly from each university or college you have attended. (*Note that certain international institutions issue transcripts in officially-sealed envelopes only to their students; if this is the case, MU accepts those sealed official documents when mailed to MU by the applicant.*) Transcripts/mark sheets for all baccalaureate degrees or equivalents and any additional degrees must be sent in both English and the native language. At this time, the Graduate School only accepts hard copies of transcripts. All transcripts/mark sheets become the property of MU. Institutions must mail official transcripts and marks sheets directly to Graduate Admissions, University of Missouri-Columbia, 210 Jesse Hall, Columbia, MO 65211-1160.
- **Standardized test scores:** Check with your program of interest to see which, if any (GRE, GMAT, MAT, etc.), are required for your application. Official scores must be sent directly from the testing service provider [to your academic program](#). (Learn more about [standardized test scores and your application](#))
- **International Applicants:** The Graduate School requires official TOEFL or IELTS scores, sent directly from the testing service provider, for all applicants who come from areas where English is not the primary language. Learn more about the proficiency test requirement and proof-of-funding documents, and check your eligibility on our [International Applicants](#) page.
- **Veterans:** The Office of Veterans Services, 230 Jesse Hall, Columbia, MO 65211, 573-882-3852, provides G.I. Bill information and certification for eligible veterans, dependents and vocational rehabilitation veterans. The office also furnishes information on military service educational assistance programs.
- **Dual Graduate/Professional Degree Applicants:** In addition to the guidelines above, you must submit an [application for dual enrollment \(PDF\)](#) during the first semester of dual enrollment. Refer to our dual degree information for [master's students](#) and [doctoral students](#).

## The Graduate Admission Application Fee

A nonrefundable application processing fee -- \$55 (US dollars) for U.S. citizens and permanent residents, \$75 (US dollars) for nonresident internationals -- is required for all new applicants. (The fee for international students is based

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on the higher cost of processing these applications.) The application fee is nonrefundable; it is not applicable to the educational fee, student activities fee, computing fee or student health fee; and it is valid for one academic year (three semesters).

A few programs provide application fees under select circumstances. Please read your prospective degree program policies to learn more. The non-refundable fee is applicable for an entire academic year (three semesters).

**Out-of-State Applicants:** It is the responsibility of applicants to apply and register under the proper residence, and to pay the correct tuition/fees. An informational pamphlet about tuition and residence rules may be obtained from the Residency Office.

Other applicable University fees may be found on the Cashier's Office [page](#).

You must have a valid MasterCard, VISA or Discover credit card to submit the online application for admission.

### **Application Fee Waivers**

A few degree programs may waive application fees in certain select instances. Please [contact your potential degree program](#) to see if it has such a policy.

### **Fee Waivers for McNair Scholars, Project 1000 Students and Alliance for Minority Participation (AMP) Program Participants**

Under current agreements, the Graduate School will waive the application fee for applicants who are participants or have completed the McNair Scholars program, the Project 1000 program or an Alliance for Minority Participation (AMP) program. To receive an application fee waiver, please [start the online Graduate Application for Admission](#). At the same time, forward a letter of participation or completion from the McNair, Project 1000 or AMP program coordinator to:

Graduate Admissions  
University of Missouri  
210 Jesse Hall  
Columbia, MO 65211

Once the Graduate Admission office has received your official participation or completion letter, an application fee waiver will be applied to your online application account, at which time you may formally submit the application.

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Please contact the Graduate Admission office with any questions at 573-882-6311 or 800-877-6312 or [gradadmissions@missouri.edu](mailto:gradadmissions@missouri.edu)

## The GRE, MAT, GMAT and Graduate Application

Graduate applicants may be required to submit the general test scores of the [Graduate Record Examination \(GRE\)](#) or an appropriate alternative, nationally normed test such as the [Miller's Analogies Test \(MAT\)](#) or the [Graduate Management Admission Test \(GMAT\)](#). MU's individual graduate programs determine whether standardized test scores such as the GRE will be required for admission. Please check with your [degree program of interest](#) to determine if scores are required and to find out about their policy for applicants who do not submit required documents.

### **Making Sure Your Scores Are Sent to the Right Places on Time**

When scheduling a date to take the test, allow enough time for test scores to be included in the application materials. Be sure to designate the University of Missouri and your program of interest as locations to receive the scores.

In general, GRE testing locations will not allow you to bring any paper or other notes into the test room but will instead provide you with a list of schools and degree programs to choose from. After sufficient time has passed for the scores to be sent, you might need to contact your program of interest to make sure you correctly chose it to receive your scores.

- **MU's Institutional Code for the GRE and TOEFL is: 6875.**
- **The Institutional Code for the Miller's Analogy Test is: 2138.**

### **When Older Scores Are Permissible**

Students who are applying to a doctoral program that requires the GRE and who have earned a master's degree may, at the discretion of the admitting academic program, present scores more than five years old. Students who do not have a master's degree must present scores that do not exceed five years. GRE score reporting policies have been adopted by the GRE Board relative to keeping and reporting GRE scores earned during the five-year period before the beginning of the current testing year. Current GRE Board policy, in effect since October 1985, states that scores are reportable for five years.

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## English-Language Ability

All non-native English-speaking applicants are required to provide proof of English language ability. As proof, the University of Missouri Graduate School accepts scores from either the [Test of English as a Foreign Language \(TOEFL\)](#) or the [International English Language Testing System \(IELTS\)](#). TOEFL and IELTS scores are considered valid for two years beyond the test date. Required scores vary by academic program.

Students who cannot meet the language proficiency requirement can enroll in the [Intensive English Program](#) at Mizzou, which is designed to provide individuals as quickly as possible with the English-language skills necessary to successfully study for an academic degree at a college or university in the United States. Ask the director of graduate study in your [degree program of interest](#) about this option.

### Exceptions: Areas Where English is a Primary Language

Applicants from the following native English-speaking countries are not required to submit TOEFL or IELTS scores.

- Australia
- New Zealand
- British Caribbean Islands
- Canada (except French-speaking areas)
- Ireland
- United Kingdom
- Kenya

### Minimum Scores Required by the Graduate School and Academic Programs

The minimum total TOEFL scores for graduate admission to MU are 500 (paper-based test) or 61 (Internet-based test). The minimum total academic IELTS score for graduate admission to MU is 5.5. Please note that these are campus-wide minimum scores; individual [programs of study](#) may require significantly higher scores for acceptance to particular graduate programs, and these requirements supersede the Graduate School's minimum.

### Language Proficiency Test Waiver Policy

If the non-native English-speaking applicant has successfully completed one year of full-time post-secondary (college-level) study in a country where English

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is the native language within the past two years, then TOEFL or IELTS scores may be waived. One year of full-time enrollment is defined as completing the equivalent of at least 24 credit hours over 2 semesters at the undergraduate level or 18 credit hours over 2 semesters at the graduate level. English as a second language, intensive English, and/or remedial English courses cannot be included in the credit hour count.

Please note that although an applicant might have fulfilled the above conditions for a TOEFL/IELTS waiver for admission by the Graduate School, [each graduate program](#) reserves the right to require an applicant to submit a TOEFL or IELTS score. Please check with your academic program of interest for the program's TOEFL/IELTS requirements.

### **Language Requirement for Teaching Assistants and Graduate Instructors**

If your degree program has offered you a financial package that includes a teaching assistantship or graduate instructorship, you will undergo additional English-language evaluation through the International Teaching Assistant Program. This evaluation happens after the admission process and will affect your ability to teach on the Mizzou campus. The [International Teaching Assistant Program](#) staff provides courses and one-on-one sessions focusing on the necessary English-language and teaching skills for those who do not pass the initial evaluation.

## **Medical Requirements: Immunization & TB Screening**

### **ALL New Students Must Submit an Immunization Policy Form**

The University of Missouri requires all new students to submit an [MU Immunization/TB Screening Requirements form](#) and verification of TB screening before registering for classes. The completed form must be submitted *directly* to the Student Health Center. You will also be required to submit evidence of immunization by a copy of your:

- personal immunization records (e.g., a “baby book”) or
- physician immunization records or
- school immunization records

For detailed information about vaccines and TB skin tests refer to the [MU Immunization Policy and Forms Page](#) or contact the Student Health Center at 573-882-7481. For general information visit the [MU Student Health Center](#).

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## Financial Support Overview

Prospective graduate students may seek financial support for their studies from a variety of internal (funds within MU) and external (funds provided by other groups) sources. It is highly advisable to apply for financial support at the time of application to the University. Depending on the source, funds may be applied toward the costs of graduate education, such as tuition, fees, books, meals and housing.

The basic categories of student financial support are [assistantships](#) and [fellowships](#), scholarships, travel support, grants, and loans—depending on source of support. U.S. Veterans are also eligible for financial support. Persons with disabilities should also explore potential resources. Some, but not all, sources of financial support include tuition waivers and student health insurance. Be sure to investigate a variety of potential sources. Please refer to the [Financial](#) section of our web site additional information on support, application deadlines, taxes, and student obligations.

### MU Office of Financial Aid

If you would like to apply for federal financial aid or other types of funding, consult the [Student Financial Aid Office's site](#).

## Key Terms to Know For Admissions

Terms such as application, admission, registration, and enrollment can often be confusing. Therefore, applicants will find it helpful to establish “working definitions” of what those – and other – terms mean at the University of Missouri.

### Working Definition for Key Terms Used in the MU Graduate Application Process

**Acceptance** – A student must notify the department (and the Graduate School) that the offer of admission has been accepted.

**Acceptance of (MU) Financial Support** – A student must officially accept financial support offered from the MU Graduate School (or department), for example, a fellowship, scholarship, or assistantship.

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**Admission to the University** – If a student is accepted into a degree program and MU, the student will receive an official letter from the Graduate School offering admission to the university and telling the student what to do next.

**Application** – The processes whereby a prospective student submits a completed application forms and other required documents (e.g., transcripts, test scores, essays, reference letters) simultaneously to the MU Graduate School and to the department.

**Departmental Admission Criteria** – Standards set forth by a department (or degree program) to evaluate students' eligibility to participate in a specific graduate degree area. Departmental admission criteria are unique and specific, and must be met in addition to the Graduate School's admission criteria.

**Fee** – An application fee is the administrative surcharge for processing an application, payable to the Graduate School at time of application. Similarly, the university has other student fees.

**Financial Support Applications** – Students are advised to submit financial aid applications (e.g., for fellowships, scholarships, assistantships, loans) up to one year in advance of planned enrollment date. Deadlines vary depending on source.

**Graduate School Admission Criteria** – Minimum admission standards set forth by the Graduate Faculty Senate to evaluate students' general eligibility to participate in advanced studies at MU.

**Medical Requirements** – Students who accept admittance must submit a health form and documentation directly to MU Student Health regarding immunizations and TB screening.

**Medical Requirements** – Students who accept admittance must submit a health form and documentation directly to MU Student Health regarding immunizations and TB screening.

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# Information for U.S. Veterans

## **MU Equity Office**

The Uniformed Services Employment and Reemployment Rights Act (USERRA), which is enforced by the U.S. Department of Labor (DOL), prohibits employers from discriminating against employees or applicants for employment on the basis of their military status or military obligations. The official University of Missouri equity statement for veterans may be found at <http://equity.missouri.edu/learn/veterans.php>.

## **Veteran's Benefits**

The University of Missouri is approved for the certification of students eligible to receive educational assistance from the Department of Veterans Affairs.

Information on the costs of education, financial aid, and required forms may be found at <http://admissions.missouri.edu/costs-and-aid/veteran-benefits.php>.

## **Active Duty Policy**

The Graduate School upholds the official University of Missouri policy on active duty, which may be found at <http://registrar.missouri.edu/policies/active-military-duty.php>.

## **Resources:**

University of Missouri Veterans Center

<http://veterans.missouri.edu/veterans@missouri.edu>

N-5 Memorial Student Union

Columbia, MO 65211

573-884-4383 Office

573-884-4387 FAX

Mizzou Student Veterans Association - <http://www.mizzouveterans.org/>

U.S. Department of Veterans Affairs - GI Bill Information

[http://www.gibill.va.gov/resources/benefits\\_resources/rate\\_tables.html](http://www.gibill.va.gov/resources/benefits_resources/rate_tables.html)

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# Admission and Acceptance

As explained in the previous section about the Application Process, prospective students must submit required application forms and other documents for consideration by MU. The application packets are reviewed by the Graduate School and by the degree program of interest. This section explains how the application packets are processed at MU.

The Graduate School set minimum admission criteria for admission. Similarly, departments (or area and degree programs) set additional admission criteria. Student application packets are reviewed by both the Graduate School and by the department (or area and degree programs). As a result of these parallel review processes, a determination is made whether a student (a) is eligible for admission to the University or (b) is not eligible for admission to the University. Upon admittance, the student will receive an official letter from the MU Graduate School about the status of the application. Included with this letter will be a checklist for newly-admitted students. The instructions explain the next steps.

## Acceptance of Admission

If a student is offered admission to the MU Graduate School, and the student intends to register and enroll, the student must officially accept the offer of admission.

## Deadline for Acceptance of Financial Support

The University of Missouri is a signatory to the [Council of Graduate Schools'](#) policy regarding the offering and acceptance of financial aid. If a student is offered financial support, and the student intends to register and enroll, the student must officially accept the offer of financial support. Students are under no obligation to respond to offers of financial support for the coming academic year before April 15, but there are differences in how to proceed if the student later decides to decline the offer.

When a student accepts an offer of financial support before April 15, and subsequently desires to withdraw that acceptance, the student may submit in writing a resignation of the appointment at any time. However, if a student accepts the offer of financial support after April 15, the student cannot accept another offer of financial support without first obtaining a written release from the institution to which the first commitment was made.

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# Registration and Enrollment

## Registration Process Overview

### Key Terms

**Registration:** The process by which a newly admitted student completes forms, receives a student number, and obtains a student identification card. The process also includes enrollment in courses each semester, which allows the student to access resources, like the libraries and computer labs.

**Enrollment:** Using an electronic system called myZou, a student selects courses and creates a semester schedule. Prior to course selection, consultation with faculty members or academic adviser is strongly encouraged to ensure courses will count toward degree completion.

Once a student is officially admitted to the University, the Registrar's office creates a student account and assigns a unique student number. Each student is granted access to an online database system called myZou. Students log into myZou with a personal identification nickname (called a "pawprint") and password. Students maintain personal account information in myZou, control privacy restrictions, obtain transcripts, view grades and a variety of other functions.

## Enrollment

Students working toward advanced degrees are required to enroll in the Graduate School for courses that are part of their degree programs. In addition to fulfilling any prerequisite requirements, a graduate student may be required to take undergraduate courses that carry no graduate credit or to enroll in some courses as a hearer. Enrollment is expected to reflect the course work and research in which students are engaged.

Students enrolled in the "Graduate Examination" hours are not classified as full-time or part-time. Graduate students must be enrolled in at least nine credit hours to be considered full-time students and at least four credit hours to be considered half-time students during fall and spring terms. For summer terms, graduate students must be enrolled in four hours to be considered full-time and two hours to be considered half-time students.

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**Full-Time Enrollment Status**

Without special permission of the vice provost/dean of the Graduate School, the maximum amount of credit hours to be taken in Graduate School is 16 each semester or nine for the summer session. Enrollment in nine hours in the fall and spring and four hours in the summer is considered full-time enrollment for graduate students.

**Enrollment Requirements for Master's and Educational Specialist Degree Candidates**

After completing courses, students expecting to take examinations, present a thesis, manuscript, project, or portfolio must be enrolled when that activity occurs. If a master's and educational specialist candidate only needs to take exams or defend a thesis or project, the candidate can enroll for "Graduate Examination" hours in myZou. Registration in the "Graduate Examination" does not count toward enrollment certification. Students enrolled in the "Graduate Examination" would not be considered full-time or part-time. If students need to use the library or computers on campus, they should enroll in at least one hour of regular credit hour instead of "Graduate Examination".

**Enrollment Requirements for Doctoral Candidates**

Candidacy for a doctoral degree is established by passing the comprehensive examination. Status as a continuous enrollment doctoral student begins the term after the term in which the comprehensive exam was successfully completed.

**Important Note on Continuous Enrollment Status and Financial Aid**

Students with financial aid should check with the [Student Financial Aid](#) office before registering for the Graduate Examination option. Failure to do so could cause serious consequences for the student's financial aid status.

**Important note for International Students on Continuous Enrollment and Your Visa Status**

International students must check with the [International Center](#) before registering for the Graduate Examination option. Failure to do so could cause serious consequences for the student's visa status.

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## Registering for Courses

Each semester, students use myZou to enroll in classes and create a course schedule for the upcoming semester. Students may also add/drop courses via [myZou](#). For more information about add/drop and applicable fees, deadlines and penalties see the [Registrar's site](#).

### Fees

Please consult the [Cashier's Office page](#) for required and optional fees associated with registration and enrollment, and during enrollment status changes.

### Preregistration

Only enrolled students may complete registration for the upcoming semester during preregistration in October and April. New students may preregister for the fall semester from mid-June to early-July.

### Auditing Courses

Students who enroll merely to attend lectures are expected to enroll and pay fees as a "hearer." The status of hearer does not entitle a veteran to a subsistence allowance.

### Registration for Graduate Examination

Master's and educational specialist degree candidates who have completed all requirements except the final examination or the defense of the thesis/project must be enrolled when the final examination is given or the thesis/project is defended. Full information is available at [Registration During Graduate Examination](#).

### Registration After Comprehensive Exams

See [Continuous Enrollment](#) in the Doctoral Policies section.

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**State of Missouri Registration for Professional Engineers**

The Revised Statutes of Missouri (Section 327.221) require that “all applicants for registration as a professional engineer in the State of Missouri after Jan. 1, 1977, be a graduate of and hold a degree in engineering in a curriculum accredited by the Accreditation Board for Engineering and Technology (ABET).” All MU undergraduate engineering bachelor’s-level programs in engineering are so accredited. Applicants who receive advanced degrees in MU’s engineering programs but who do not have a bachelor’s degree in an accredited engineering program are not eligible for registration in Missouri. Candidates for a graduate degree (MS or PhD) in engineering who want to establish eligibility for registration should consult with their academic program chair about a plan of study that also will lead to a bachelor’s degree in an ABET-accredited program. Further information about professional engineering registration may also be obtained from the Missouri Board for Architects, Professional Engineers and Land Surveyors, P.O. Box 184, Jefferson City, MO 65102.

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# Leave of Absence Policy

## Key Terms

### Leave of Absence

The student anticipates a need to discontinue enrollment for one or more semesters.

### Active Duty Leave or Withdrawal

Students who are members of the US Military (e.g., Reserve or National Guard) may be called into active duty by the government. As a result of the assignment, the student may need to request an active duty leave or may decide to withdraw from the University.

### Contact Adviser and Director of Graduate Studies

Students considering a leave of absence that will result in a break in enrollment of one or more semesters must first contact their graduate adviser and the academic program's director of graduate studies to inform them of their intent, the reason requesting leave and the expected duration.

## Letters to the Graduate School Office

After approval of the leave at the academic program level, the director of graduate studies and the student will submit letters to the vice provost/dean of the Graduate School. The DGS letter will verify that the academic program has been informed and that a leave of absence has been approved. The letter from the student will provide an explanation for the request as well as the anticipated departure and return date.

## Resolving Financial Support Responsibilities

It will be the responsibility of students to resolve all issues pertaining to their support (e.g., research or teaching assistantship, scholarship) with their adviser or other relevant authority before departure. These issues include the date when support will be terminated and whether or under what conditions the student will be reinstated for support upon their return.

## Notification for Re-Entry

Before the completion of the Leave of Absence, the student must notify the academic program's director of graduate studies and the Graduate School so that the re-entry process can be initiated.

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### Contact with the University During Leave

Students on a Leave of Absence may not make significant use of University resources and services or engage in significant consultation with the faculty.

### Extension of Degree Time, Continuous Enrollment

Time spent on leave does not automatically extend limits for completion of the graduate degree but can be considered in a [request for an extension](#).

Doctoral students who are required to maintain [continuous enrollment](#) may petition for an exception to this policy while they are on an approved Leave of Absence.

### International Students

International students in F-1 and J-1 nonimmigrant status must also obtain authorization from the International Center before the initiation of a Leave of Absence and before returning to campus to ensure compliance with current SEVIS regulations and visa restrictions.

F-1 and J-1 students approved for a leave of absence may not remain in the United States during the leave period unless authorized by the International Center. For students who must depart the United States, leave periods exceeding five months will necessitate updated student immigration documentation for re-entry.

All international students considering a leave of absence should meet with an international student adviser to determine the appropriate steps to safeguard their immigration status.

## Active Duty Policy

The Graduate School will work with students to expedite the transition to and from active duty. Information on the procedures for withdrawing from courses or receiving incompletes for students called to active duty during a semester can be found on the [Active Military Duty](#) page of the University Registrar's office. Students transitioning from active duty and reenrolling in classes should contact the Graduate School about reenrollment procedures.

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# Withdrawal

## Contact Adviser and Director of Graduate Studies

Please note the following types of withdrawal procedures applicable for graduate students:

1. Withdrawal from coursework for a given semester. This process is completed by using a University Withdrawal Form, which needs to be signed by the student, the approving individual (either the student's program advisor or a staff member from the Graduate School), and the Graduate Dean. Please see the Registrar's website to access this form: <http://registrar.missouri.edu/forms/university-withdrawal-form.pdf>.
2. Withdrawal from a program and withdrawal from the University. This process is completed by the student contacting both the academic program and the Graduate School with notification of intent to withdraw.

## Key Terms

### Withdrawal

The student needs to halt the pursuit of a graduate degree and does not anticipate returning to MU.

### Active Duty Leave or Withdrawal

Students who are members of the US Military (e.g., Reserve or National Guard) may be called into active duty by the government. As a result of the assignment, the student may need to request an active duty leave or may decide to withdraw from the University.

## Grades

If the student has earned a C or better at withdrawal time, a grade of W is recorded. If the student is failing at withdrawal time, a grade of F is recorded. Students are responsible for notifying their instructors of their intention to withdraw and for determining if their work qualifies for a W grade. Students who leave MU without filing a statement of formal withdrawal are given a grade of F in all courses.

## Urgent Situations

If the reason for leaving is so urgent that an official withdrawal cannot be obtained, the student should notify the Graduate School as soon as possible and officially request to be withdrawn.

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# Academic Honesty & Professional Ethics

Academic honesty is essential to the intellectual life of the University. Students who use or attempt to use as their own the answers, words, ideas or research findings of another person are guilty of academic dishonesty. In addition to such acts of cheating or plagiarism, any unauthorized possession of examinations, hiding of source materials or tampering with grade records are acts of academic dishonesty specifically forbidden by University rules.

## Reporting Dishonesty

According to the [MU Faculty Handbook](#), faculty are required to report to their academic program chair and the provost's office all acts of academic dishonesty committed by graduate and undergraduate students. In all such cases, the faculty member should discuss the matter with the student and then make an academic judgment about the student's grade on the work affected by the dishonesty and, where appropriate, the grade for the affected course. The decision as to whether disciplinary proceedings are instituted is made by the provost. Because of the importance of honesty to academic and professional life, acts of dishonesty by graduate students may result in suspension or dismissal from the University.

## Codes of Ethics in Your Field

Graduate students also should be aware that most professional associations have codes of ethics. These codes vary considerably across fields, but tend to provide guidelines for a broad array of professional responsibilities including teaching, research and working with clients. Violations of a code of ethics can lead to negative sanctions by one's professional colleagues and the expulsion from the professional associations in one's field. Graduate students are encouraged to obtain copies of codes of ethics for their chosen profession from the director of graduate studies in their department or program

## Students' Duty to Understand and Adhere to Regulations and Guidelines

It is each graduate student's responsibility to understand and adhere to all academic and research regulations and procedures. A student cannot "plead ignorance," or contend that he or she was not informed of the regulations and procedures. International students should note that principles and procedures for studying and conducting research in the US may differ from other countries.

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## Key Campus Resources

Resources for graduate and professional students include the [Responsible Conduct of Research Program](#). Departments across campus offer [courses](#) on disciplinary and interdisciplinary ethics.

The MU Office of Research is a gateway for information for students and faculty on human subject research, [Institutional Review Board \(IRB\)](#) certification, conflict of interest, compliance, investigator responsibilities, technology transfer, export controls and a variety of other critical information for MU researchers. The Campus IRB Web page should be reviewed by all masters and doctoral students prior to engaging in any type of research or evaluation with human beings or animals.

Another resource is the [Office of Student Rights and Responsibilities](#), which offers information on intellectual pluralism and academic integrity. The University of Missouri collected rules may be found in [Chapter 200: Standard of Conduct](#).

## Intimate Relationships with Graduate Students

Sexual harassment or amorous relationships between members of the profession and any student for whom he or she has a professional responsibility should be avoided. This applies to any supervisor relationship between professors and graduate assistants, graduate and undergraduate students, as well as graduate assistants with students they teach or supervise.

Implicit in the idea of professionalism is the recognition by those in positions of authority that in their relationships with their students there is always an element of power. It is incumbent upon members of the profession not to abuse, nor seem to abuse the power with which they are entrusted, since relationships between members of the profession and their students are quite imbalanced. Such relationships may have the effect of undermining the atmosphere of trust among students and faculty on which the educational process depends.

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# Guidelines for Good Practice in Graduate Education

A primary goal of graduate education at the University of Missouri is to instill in each student an understanding of and capacity for scholarship, independent judgment, academic rigor and intellectual honesty. It is the joint responsibility of faculty and students to work together to foster these ends through partnerships which encourage freedom of inquiry, demonstrate personal and professional integrity, and foster mutual respect.

## **Advisers, Committees and the Graduate Experience**

In general, graduate student progress toward educational goals at MU is directed by an adviser in consultation with the student's graduate committee. The adviser and the individuals on the committee provide intellectual guidance in support of the scholarly/creative activities of graduate students. The adviser and committee members also are charged with the responsibility of evaluating a graduate student's performance in scholarly/creative activities. The graduate student, the adviser and committee members comprise the basic unit of graduate education at an institution. It is the quality, breadth and depth of interaction within this unit that largely determines the outcome of the graduate experience.

## **A Community Based on Ethics**

High-quality graduate education depends upon the professional and ethical conduct of the participants. Academic program directors of graduate studies, faculty members and graduate students have complementary responsibilities in the maintenance of academic standards and the creation of a high quality graduate program. Excellence in graduate education is achieved when both faculty and students are highly motivated, possess the academic and professional backgrounds necessary to perform at the highest level, and are sincere in their desire to see each other succeed.

## **An Environment of Professionalism**

Graduate students must be viewed as early-stage professionals, not as students whose interest is guided by the desire to complete the degree.

## **Graduate Students**

Graduate students have made a career choices and must be viewed and treated as the next generation of professionals. To accomplish this, it is essential that graduate students:

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- Conduct themselves in a mature, professional, ethical and civil manner in all interactions with faculty and staff in accordance with the accepted standards of the discipline and MU policies governing discrimination and harassment.
- Recognize that the faculty adviser provides the intellectual and instructional environment in which the student prepares a plan of study, may be involved with research, and that he or she may, through access to teaching and research funds, also provide the student with financial support.
- Expect that their research results, with appropriate recognition, may be incorporated into progress reports, summary documents, applications for continuation for funding, and similar documents authored by the faculty adviser, to the extent that the student's research is related to the faculty adviser's research program and the grants which support that research.
- Recognize that faculty have broad discretion to allocate their own time and other resources in ways which are academically productive.
- Recognize that the faculty adviser is responsible for monitoring the accuracy, creativity, validity and integrity of the student's research. Careful, well-conceived research reflects favorably on the student, the faculty adviser, the degree program and MU.
- Exercise the highest integrity in taking examinations; completing master's and doctoral projects; and/or collecting, analyzing and presenting research data in theses, dissertations and presentations.
- As applicable to the student's degree program, acknowledge the contributions of the faculty adviser and other members of the research team to the student's work in all publications and conference presentations; acknowledgment may mean co-authorship when that is appropriate.
- Recognize that in some disciplines, the faculty adviser will determine when a body of work is ready for publication, exhibition or performance and will determine an acceptable venue because the faculty adviser bears responsibility for overseeing the performance of the student and ensuring the validity of any applicable research.
- Maintain the confidentiality of the faculty adviser's professional activities and research before presentations or publication, in accordance with existing practices and policies of the discipline.
- Take primary responsibility to inform themselves of regulations and policies governing their graduate studies at MU.
- Recognize that faculty and staff have many professional responsibilities in addition to graduate education.

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## Faculty

Correspondingly, it is imperative that faculty:

- Interact with students in a professional and civil manner in accordance with the accepted standards of the discipline and the University of Missouri's policies governing discrimination and harassment.
- Impartially evaluate student performance regardless of religion, race, gender, sexual orientation, nationality or other criteria that are not germane to academic evaluation.
- Serve on graduate student committees without regard to the religion, race, gender, sexual orientation or nationality of the graduate student.
- Prevent personal rivalries with colleagues from interfering with their duties as graduate advisers, committee members, directors of graduate studies or colleagues.
- Excuse themselves from serving as advisers on graduate committees or supervising assistantship work when there is a familial or other relationship between the faculty member and the student that could result in a conflict of interest.
- Acknowledge any student contributions to research and/or creative activity presented at conferences, in professional publications or in applications for copyrights and patents.
- Not impede a graduate student's progress and completion of his/her degree in order to benefit from the student's proficiency as a teaching or research assistant.
- Create, in the classroom, lab or studio, supervisory relations with students that stimulate and encourage students to learn creatively and independently.
- Have a clear understanding with graduate students about their specific academic, creative activity and/or research responsibilities, including time lines for completion of comprehensive examinations, research and the thesis or dissertation, as applicable.
- Provide oral and written comments and evaluations of each student's work in a timely manner.
- Assist the director of graduate studies in an annual review of graduate student progress.
- Discuss laboratory, academic program and authorship policy with graduate students in advance of entering into collaborative projects.
- Ensure an absence of coercion with regard to the participation of graduate students as human research subjects in their faculty advisers' research.
- Refrain from requesting students to do personal work (mowing lawns, baby-sitting, typing papers, etc.) with or without appropriate compensation.
- Familiarize themselves with policies that affect their graduate students.

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## Graduate Students and Their Advisers

Graduate education is structured around the generation and transmission of knowledge at the highest level. In many cases, graduate students depend on faculty advisers to assist them in identifying and gaining access to financial and/or intellectual resources that support their graduate programs. In addition, faculty advisers and academic program administrators must apprise students of the job market so that students can develop realistic expectations for the outcomes of their studies.

In some academic units the student's specific adviser may change during the course of the student's program, either because of faculty or student wishes. The role of advising may also change and become a mentoring relationship.

The reward of finding a faculty adviser implies that the student has achieved a level of excellence and sophistication in the field or exhibits sufficient promise to merit the more intensive interest, instruction and counsel of faculty.

### **To this end, it is important that graduate students:**

- Devote an appropriate amount of time and energy toward achieving academic excellence and earning the advanced degree.
- Be aware of time constraints and other demands imposed on faculty members and program staff.
- Take the initiative to ask questions that promote understanding of the academic subjects and advances in the field.
- Communicate regularly with faculty advisers, especially in matters related to research and progress within the graduate program and with any teaching responsibilities.

### **Correspondingly, faculty advisers should:**

- Provide clear maps of all requirements each student must meet, including course work, languages, research tools, examinations, and thesis or dissertation, teaching/laboratory assistantships, and delineating the amount of time expected to complete each step.
- Evaluate student progress and performance in regular and informative ways consistent with the practice in the field.
- Help students develop interpretive, writing, oral and quantitative skills, in accordance with the expectations of the discipline and the specific degree program.

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- Assist graduate students in the development of grant writing skills, where appropriate.
- Take reasonable measures to ensure that graduate students who initiate thesis or dissertation research/creative activity do so in a timely fashion, regardless of the overall demands of assistantships in the laboratory, studio, or classroom.
- When appropriate, encourage graduate students to participate in professional meetings or display their work in public forums and exhibitions.
- Stimulate in each graduate student an appreciation of professional skills they will be required to master in their respective disciplines, (i.e., teaching, administration, research, writing and creativity).
- Create an ethos of collegiality so that learning takes place within a community of scholars.
- Prepare students to be competitive for employment, which includes portraying a realistic view of the field and the job market and making use of professional contacts and associations for the benefit of their students, as appropriate.
- Create an environment of the highest ethical standards and insist that students behave ethically in all their professional activities.
- Discuss risks that students might encounter while participating in research activities and exert reasonable effort to minimize risks. Faculty advisers are encouraged to consult the following resources for assistance:
  - o [Environmental Health and Safety](#) (radiation safety, chemical safety, biological safety, environmental issues, etc.)
  - o [Institutional Biosafety Committee](#) (reviews, approves and oversees all research and teaching activities involving recombinant DNA and biohazardous materials in human, animal, plant and laboratory (in vitro) use)
  - o [International Center](#) (Information on safety and travel to international destinations)
  - o [Center for Disease Control](#)
  - o [U.S. Department of State Current Travel Warnings](#)

In academic units, faculty advisers support the academic promise of graduate students in their programs. In some cases, academic advisers are assigned to entering graduate students to assist them in academic advising and other matters. In other cases, students select faculty advisers in accordance with the disciplinary interest or research expertise of faculty. Advising is variant in its scope and breadth and may be accomplished in many ways.

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A student's academic performance and a faculty member's scholarly interest may coincide during the course of instruction and research/creative activity/performance. As the faculty-graduate student relationship matures and intensifies, direct collaborations may involve the sharing of authorship or right to intellectual property developed in research or other creative activity. Such collaborations are encouraged and are a desired outcome of the mentoring process.

### **Ways of Communicating**

It is understood that the standards of mentoring may differ by academic program, depending on the degrees students are pursuing and the availability of time working professionals in communities outside Columbia have to consult with their advisers. Nevertheless, it is recommended that advisement, consultation and mentoring be nurtured via electronic means if they cannot be nurtured in person.

### **Changes in Advisers and Committees**

It is further understood that academic programs will establish appropriate policies and practices to assist students whose major adviser is no longer able to serve in that capacity, as well as students who need additions or deletions to their committees. At the same time, academic programs whose funding of graduate students is generated primarily from research grants need to work with faculty advisers and their graduate students to ensure that the students will understand the importance of completing their research commitments.

### **History of the Guidelines**

This document was first approved for distribution on January 23, 2001, by the University of Missouri Graduate Faculty Senate. It was adopted from documents shared among the following: The Graduate School at North Carolina State University; the Office of Graduate Studies at the University of Southern California; the Graduate School at the University of California-Davis; the Graduate College and Graduate Council at the University of Arizona ("Mentoring: the Faculty-Graduate Student Relationship," Cusanovich and Gilliland, 1991); The University of Nebraska Medical Center; the University of Nebraska-Lincoln; the Graduate Council at the University of Oregon. Last update January 2011.

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# What is myZou?

The myZou online system is a self service center for MU student records, grades, course enrollment and tuition payments. Located at <https://myzou.missouri.edu/psp/prd/?cmd=login>, myZou also houses official course information for both graduate and undergraduate students.

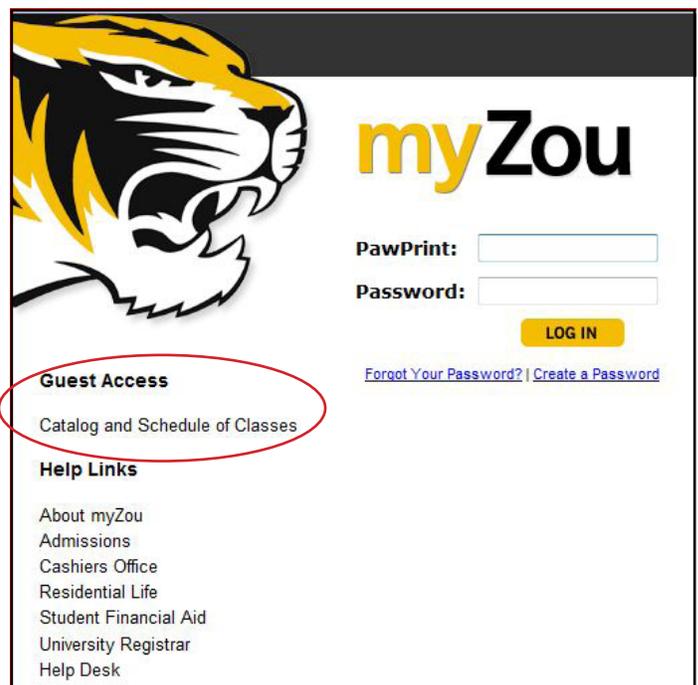
## How to View (Browse) Official MU Course Descriptions

### Step 1

**Prospective students and Web site visitors:** View official course descriptions through myZou’s *Guest Access* link.

To browse the course catalog, go to <https://myzou.missouri.edu>. Look for Guest Access on the left side of the page below the Tiger. Click on the underlined words “Catalog and Schedule of Classes.”

**Current students:** Login to [myZou](#) with your MU pawprint (ID) and password. Click on the “Self Service” link in the left column. In the middle of the screen, select Class Search/Browse Catalog.



### Step 2

The next page is called Class Search. On the pull down menu, select an upcoming semester. Next, click the circle that says “Browse Catalog.” Then click the “GO” button.



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### Step 3

You should be on the Browse Catalog subpage for the selected semester, showing a box with the alphabet. Before clicking on a letter, go to the second box that says “Show.” Click the circle for “All Courses.” Wait for the system to process. Now click on a letter of the alphabet that corresponds to an area of interest.

**Class Search**

**Browse Catalog**

Univ of Missouri - Columbia | 2009 Fall Semester

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

0 1 2 3 4 5 6 7 8 9

Select show All Courses if you want to show all courses whether or not class sections are offered for the term. Select show Courses With Sections Offered to show only those courses that have class sections offered for the term.

Show  All Courses  Courses With Sections Offered

**COLLAPSE ALL** **EXPAND ALL**

**CHANGE TERM**

▶ [ACCTCY - Accountancy](#)

▶ [AERO - Aerospace Studies](#)

Example: If you are interested in Forestry courses, click on the letter “F.” You will get a list of all courses that begin with “F.”

### Step 4

You will now be viewing a list of programs based on the letter you selected. Scroll down the page. Click on a program of interest.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

0 1 2 3 4 5 6 7 8 9

Select show All Courses if you want to show all courses whether or not class sections are offered for the term. Select show Courses With Sections Offered to show only those courses that have class sections offered for the term.

Show  All Courses  Courses With Sections Offered

**COLLAPSE ALL** **EXPAND ALL**

**CHANGE TERM**

▶ [FILM S - Film Studies](#)

▶ [FINANC - Finance](#)

▶ [FINPLN - Personal Financial Planning](#)

▶ [FOREST - Forestry](#)

▶ [FRENCH - French](#)

A new screen opens with three columns: Course Number, Description and Course Action. Course titles are listed under Description. If the last column reads “No Sections Available,” it simply means that the course is not offered during the semester you selected. However, if that column reads “View Class Sections,” it means that the course is offered during the semester you selected.

▼ **FOREST - Forestry**

Course Number	Description	Action
<a href="#">3212</a>	<a href="#">Forest Health and Protection</a>	No Sections Available
<a href="#">3290</a>	<a href="#">Urban Forestry</a>	<a href="#">View Class Sections</a>
<a href="#">3300</a>	<a href="#">Problems in Forestry</a>	<a href="#">View Class Sections</a>
<a href="#">3350</a>	<a href="#">Special Readings in Forestry</a>	<a href="#">View Class Sections</a>
<a href="#">4301</a>	<a href="#">Topics in Forestry</a>	<a href="#">View Class Sections</a>
<a href="#">4330</a>	<a href="#">Practice of Silviculture</a>	<a href="#">View Class Sections</a>
<a href="#">4350</a>	<a href="#">Forest Economics</a>	<a href="#">View Class Sections</a>
<a href="#">4365</a>	<a href="#">Logging Systems: Operations and Analyses</a>	No Sections Available
<a href="#">4370</a>	<a href="#">Wildland Fire Management</a>	<a href="#">View Class Sections</a>
<a href="#">4375</a>	<a href="#">Forest Stand Dynamics</a>	No Sections Available

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## Step 5

Scroll down the list of courses to those at the graduate level (normally numbered 5000 – 9999; see next section on [Course Numbering](#)). Click on the underlined course title (under the Description column) to read the official course information and requirements. Another page will open with the official course description, enrollment information and course details.

FOREST 8515 - Ecological Modeling		
<b>Course Detail</b>		
Units	3	
Grading Basis	Graded	
Course Components	Lecture	Required
<b>Enrollment Information</b>		
Enrollment Requirement	Graduate standing is required	
Course Attribute	Ag, Food, and Natural Resource Course Fee	
<b>Description</b>		
An introduction to the topics and philosophy of ecological modeling. The course will guide you through the process of developing a conceptual model, formalizing the model, formulating, parameterizing, and running the model as well as analyzing the results. Prerequisites: graduate standing or instructor's consent.		

## Important

Before enrolling in courses, students must consult with the graduate degree program office, the director of graduate study in a degree area, or a primary thesis or dissertation advisor. As part of that process, all students develop a “plan of study” which is approved by the degree program. The plan of study looks ahead at all of the courses (e.g., prerequisite, core, optional) required to complete a degree. Since some courses are offered on a rotating basis, it is important to know when a given course will be offered. Be sure to ask!

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# Course Numbering System

Effective fall 2004, the University of Missouri implemented a four digit course numbering system. Undergraduate courses are numbered 0000-4999. A PDF version of the undergraduate catalog may be found at <http://registrar.missouri.edu/degrees-catalogs/2008-2010/index.php>.

Graduate and professional level courses are numbered as follows:

- Professional-level courses are numbered 5000-6999. These numbers are reserved for use in the Medical, Law and Veterinary schools' catalogs.
- Graduate-level courses are numbered 7000-7999 (beginning level courses); 8000-8999 (mid-level courses); and 9000-9999 (upper-level courses).

Research courses (490) were renumbered in 2003 as follows:

- Masters Thesis Research 8090 (8990 in the College of Engineering).
- Doctoral Dissertation Research 9090 (9990 in the College of Engineering).

**Note:** Effective Winter Semester 1994, thesis and research hours (490) are graded on an S/U basis only.

## Cross-level Courses

In some cases, a course may be open to both undergraduate and graduate students, although completion requirements and credit hours may vary. The course descriptions will be cross listed with a number between 4000-4999 for undergraduates and 7000-7999 for graduate students.

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# Course Abbreviations

ACCY	Accounting
AG EC	Agricultural Economics
AG ED	Agricultural Education
AG S M	Agricultural Systems Management
AGRIC	Agriculture
AN SCI	Animal Science
ANTHRO	Anthropology
ARCHST	Architectural Studies
ART	Art
AR H A	Art History and Archaeology
ASTRON	Astronomy
ATM SC	Atmospheric Science
BIOCHM	Biochemistry
BIOL EN	Biological Engineering
BIO SC	Biological Sciences
BIOMED	Biomedical Sciences
BL STU	Black Studies
BUS AD	Business Administration
CH ENG	Chemical Engineering
CHEM	Chemistry
CV ENG	Civil Engineering
CL	Classical Humanities
CLASS	Classics
COMMUN	Communication
C S D	Communication Sciences and Disorders Program
CMP SC	Computer Science
DMU	Diagnostic Medical Ultrasound
ECONOM	Economics
ED LPA	Educational Leadership and Policy Analysis
ESC PS	Educational, School and Counseling Psychology
ECE	Electrical and Computer Engineering
ENGLSH	English
ENTOM	Entomology
ENV SC	Environmental Science
ENV ST	Environmental Studies
F C MD	Family and Community Medicine
FILM S	Film Studies
FINANC	Finance
FINPLN	Financial Planning

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F W	Fisheries and Wildlife
FS	Food Science
FOREST	Forestry
FRENCH	French
GEOG	Geography
GEOL	Geological Sciences
GERMAN	German
GRAD	Graduate School
GREEK	Greek
HMI	Health Management and Informatics
HTH PR	Health Professions
HIST	History
H D FS	Human Development and Family Studies
IMSE	Industrial and Manufacturing Systems Engineering
INFO INST	Informatics institute
IS LT	Information Sciences and Learning Technology
JOURN	Journalism
LAB ST	Labor Studies
LAB AN	Laboratory Animal Medicine
LATIN	Latin
LAW	Law
LINGST	Linguistics
LTC	Learning, Teaching, & Curriculum
LTC V	Learning, Teaching, & Curriculum - Vocational
MANGMT	Management
MRKTNG	Marketing
MATH	Mathematics
MAE	Mechanical and Aerospace Engineering
MPP	Medical Pharmacology and Physiology
MICROB	Molecular Microbiology and Immunology
MUS	Music
MUSIC	Music
NAT R	Natural Resources
NEURO SC	Integrative Neuro Science
NU ENG	Nuclear Engineering
NUCMED	Nuclear Medicine
NURSE	Nursing
NUTRIT	Nutrition
NUTR S	Nutritional Sciences
OC THR	Occupational Therapy

*continued on next page*



P HLTH	Public Health
P R TR	Parks, Recreation and Tourism
PEA ST	Peace Studies
PHIL	Philosophy
PH THR	Physical Therapy
PHYSCS	Physics
PL PTH	Plant Microbiology and Pathology
PLNT S	Plant Science
POL SC	Political Science
PSYCH	Psychology
PTH AS	Pathology and Anatomical Sciences
PUB AF	Public Affairs
RA SCI	Radiological Sciences
RADIOL	Radiology
REL ST	Religious Studies
RS THR	Respiratory Therapy
RM LAN	Romance Languages and Literatures
RU SOC	Rural Sociology
RUSS	Russian
SOC WK	Social Work
SOCIOL	Sociology
SOIL	Soil Science
S A ST	South Asia Studies
SPAN	Spanish
SPC ED	Special Education
STAT	Statistics
ST ABRD	Study Abroad
TDP	Teacher Development Program
T A M	Textile and Apparel Management
THEATR	Theatre
V BSCI	Veterinary Biomedical Science
V M S	Veterinary Medicine and Surgery
V PBIO	Veterinary Pathobiology
WGST	Women's and Gender Studies

*continued on next page*



# Degree Program Pages

A-Z list of degree programs: <http://gradschool.missouri.edu/programs/catalog/>

## Agricultural Economics Graduate Programs

Department of Agricultural and Applied Economics  
200 Mumford Hall  
573-882-3747  
<http://dass.missouri.edu/agecon/grad/>

### About Agricultural Economics Graduate Programs

A leader in the application of new institutional and welfare economics to agriculture, development, and policy analysis, the Department of Agricultural and Applied Economics at the University of Missouri is recognized for its innovative approach to graduate training in agricultural economics.

A PhD or MS degree in agricultural economics prepares students for a rewarding career in academia, agricultural business, government or international agriculture. Students can study agribusiness management, contracting and strategy; collective action and cooperative theory; econometrics and price analysis; entrepreneurship; environmental and natural resource economics; food, biofuel and agricultural policy and regulation; international development; regional economics and rural development policy; science policy and innovation; sustainable agriculture and applied ethics. The MS program may be a step toward the PhD but may also be used as a terminal program for those interested in careers in agribusiness, extension or government. Programs are flexible. All PhD and most MS students become involved in research, but those whose career interests lie in other directions find the department willing to accommodate them.

### Internal Funding

A 3.25 GPA (A=4.0) is generally a minimum requirement for financial assistance such as fellowships and assistantships for research and teaching. Reasons for supporting a student with a GPA below 3.25 must be documented in detail.

### Agricultural and Applied Economics Faculty

Chris Boessen  
Teaching assistant professor, PhD, University of Missouri. Agribusiness management.

Julian Binfield  
Assistant research professor, PhD, University of Missouri. Policy analysis.

D. Scott Brown  
Research assistant professor, PhD, University of Missouri. Policy analysis.

Fabio Chaddad  
Assistant professor, PhD, University of Missouri. Agribusiness management.

Michael L. Cook  
Professor, PhD, University of Wisconsin. Agribusiness managements, cooperatives, marketing and structure of markets.

Jan Dauve

Teaching associate professor, PhD, Colorado State University. Economic education and natural resource economics.

Brady J. Deaton

Chancellor, professor, PhD, University of Wisconsin. Economic development.

Jill Findeis

Division director, professor, PhD, Washington State University. Environmental sustainability, labor economics, public policy.

Harvey James

Associate professor, PhD, Washington University in St. Louis. Agribusiness management, business and applied ethics.

Thomas G. Johnson

Professor, PhD, Oregon State University. Regional economics.

Nicholas Kalaitzandonakes

Professor, PhD, University of Florida. Economics of technology and innovation.

Michael S. Kaylen

Associate professor, PhD, Purdue University. Economic development and natural resources.

Peter Klein

Associate professor, PhD, University of California-Berkley. Agribusiness management, industrial organization, financial economics.

Raymond Massey

Extension professor, PhD, Oklahoma State University. Crop economics.

Laura McCann

Associate professor, PhD, University of Minnesota. Environmental economics, transaction costs of agri-environmental policies, international development.

Willi Meyers

Professor, PhD, University of Minnesota. Policy analysis and international trade.

Michael J. Monson

Associate professor, PhD, University of Florida. Farm management, production and resource economics.

Kevin C. Moore

Associate professor, PhD, Iowa State University. Farm management, production and finance.

Joe Parcell

Professor, PhD, Kansas State University. Agriculture marketing.

Vern L. Pierce

Extension associate professor, PhD, University of Missouri. Beef economics.

Ronald L. Plain  
Professor, PhD, Oklahoma State University. Livestock marketing.

Judy Stallmann  
Professor, PhD, Michigan State University. Community economics and state and local public finance.

Michael Sykuta  
Associate professor, PhD, Washington University in St. Louis. Agribusiness management.

Wyatt Thompson  
Assistant professor, PhD, University of Missouri. Policy analysis.

Corinne Valdivia  
Associate professor, PhD, University of Missouri. Economic development and agricultural research policy.

Randall Westgren  
Professor, PhD, Purdue University. Economics of entrepreneurship, strategic management in the agri-food sector, competitiveness.

Patrick Westhoff  
Professor, PhD, Iowa State University. Policy analysis.

Handy Williamson  
Vice provost for international programs and faculty development, professor, PhD, University of Missouri. Economic development.

## **Master's Degree in Agricultural Economics**

Admission Contact Information  
Jody Pestle ([pestlej@missouri.edu](mailto:pestlej@missouri.edu))  
200 Mumford Hall; Columbia, MO 65211  
573-882-3747

### **Admission Criteria**

Fall deadline: February 15  
Spring deadline: September 15

### **Minimum TOEFL scores:**

Internet-based test (iBT)	Paper-based test (PBT)
80	550

### **Required Application Materials**

[To the Graduate School](#) (210 Jesse Hall; Columbia, MO 65211):  
All required Graduate School documents

[To the Agricultural Economics Program:](#)

Departmental Application (PDF)  
3 letters of recommendation (PDF)  
Statement of purpose  
GRE score report

**Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

**Prerequisites**

Before admission to the MS program, a student should have completed at least nine hours of agricultural economics or economics, a course in calculus and one in statistics.

**Graduation Requirements**

For the MS degree, students must complete a minimum of 30 hours selected from courses accepted for graduate credit. The program must include graduate-level courses in intermediate microeconomic theory, intermediate macroeconomic theory, and multiple regression analysis. Students opting for the MS thesis must also complete at least six credit hours of research as part of the minimum 30 hours. An alternative MS non-thesis program requires that some additional course work be substituted for thesis research.

**For More Information**

For further information on admissions or financial assistance, write to Harvey James, director of graduate studies in agricultural economics, 200 Mumford Hall, Columbia, MO 65211, or [hjames@missouri.edu](mailto:hjames@missouri.edu).

**Doctoral Degree in Agricultural Economics**

Admission Contact Information

Jody Pestle ([pestlej@missouri.edu](mailto:pestlej@missouri.edu))  
200 Mumford Hall; Columbia, MO 65211  
573-882-3747

**Admission Criteria**

Fall deadline: February 15  
Spring deadline: September 15

**Minimum TOEFL scores:**

Internet-based test (iBT)	Paper-based test (PBT)
80	550

## Required Application Materials

[To the Graduate School:](#) (210 Jesse Hall; Columbia, MO 65211)

All required Graduate School documents

[To the Agricultural Economics Program:](#)

Departmental Application (PDF)

3 letters of recommendation (PDF)

Statement of purpose

GRE score report

## Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

## Prerequisites

Prerequisites for the PhD program include courses in intermediate microeconomics; intermediate macroeconomics; quantitative or mathematical economics; statistics, econometrics or regression and correlation analysis; and calculus. A master's degree in economics, agricultural economics, or a related field, is preferred but not required for admittance into the PhD program. However, applicants to the PhD program without a master's degree will be admitted initially into the master's program with the expectation that they complete the MS degree including MS thesis before continuing with their doctoral studies.

## Graduation Requirements

The size, quality and diversity of the faculty provide a broad choice of advisers and research topics. Students may specialize in agribusiness management; resources and development; or markets, trade and policy analysis. The student and the doctoral advisory committee have considerable latitude in developing a plan of study. There is no foreign language requirement. The general course requirements for the PhD consist of courses in advanced microeconomic theory, new institutional economics, welfare economics, econometrics and research methodology, followed by a well-balanced selection of elective and research courses in agricultural economics and other disciplines at the 8000/9000 level. The course of study should prepare the student for the written qualifying exam taken after the first year of courses, the comprehensive exam assessing the student's competency in his or her chosen fields of study, and independent research. A dissertation embodying the results of original research must be written on a subject approved by the program committee. An oral examination over the dissertation completes the degree requirements.

## For More Information

For further information on admissions or financial assistance, write to Harvey James, director of graduate studies in agricultural economics, 200 Mumford Hall, Columbia, MO 65211, or [hjames@missouri.edu](mailto:hjames@missouri.edu).

## Courses

See Agricultural Economics (AG EC) in the myZou online system.

## Agricultural Education Graduate Programs

College of Agriculture, Food and Natural Resources  
121 Gentry Hall, Columbia, MO 65211  
573-882-7451  
<http://dass.missouri.edu/aged/grad/>

The agricultural education programs are designed for students with interests in agricultural education and leadership development. Course work includes program and professional development, evaluation, teaching and learning theories and practices, educational methods, organization and administration, leadership and communication.

### Agricultural Education Faculty

Bryan L. Garton  
professor, PhD, The Ohio State University.

Anna L. Henry  
associate professor, PhD, University of Missouri.

Tracy Kitchel  
associate professor, PhD, University of Missouri.

Leon G. Schumacher  
professor, PhD, Iowa State University.

Jon Simonsen  
assistant professor, PhD, The Ohio State University.

## Master's Degree in Agricultural Education

### Admission Contact Information

Dr. Tracy Kitchel ([kitcheltj@missouri.edu](mailto:kitcheltj@missouri.edu))  
121 Gentry Hall, Columbia, MO 65211  
573-882-7451

### Admission Criteria

Fall deadline: July 15

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

Minimum GRE score. GRE scores are only required for applicants having an undergraduate GPA below 3.20 in the last 60 hours of undergraduate course work

Preferred Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative	Analytical
Prior to August 1, 2011	900	4.0
On or After August 1, 2011	291	4.0

Minimum GPA: Average of 3.0 in the last 60 hours of undergraduate course work

## Required Application Materials

### [To the Graduate School:](#)

All required Graduate School documents

### [To the Agricultural Education Program:](#)

Official transcripts (mail to the Graduate School; no need to send University of Missouri transcripts)

Official GRE scores

Personal data sheet (found at [aged.missouri.edu](http://aged.missouri.edu); upload to the Graduate School application website)

Minimum of 2 letters of recommendation (use Graduate School application website)

## Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

## Graduation Requirements

The department offers three MS degree options:

1. Thesis
2. Creative Component
3. Teacher Certification

### Thesis Option

The Thesis option requires a minimum of 30 hours of graduate credit (to include a minimum of 24 hours of formal graduate courses, plus a maximum of six hours of 8090 Research) with a minimum of 15 credit hours at the 8000 level. Candidates must also complete an approved thesis based on original research.

### Creative Component

The Creative Component option requires a minimum of 32 hours of graduate credit (to include a minimum of 29 hours of formal graduate courses, plus a maximum of 3 hours of 8080 Creative Component) with a minimum of 16 credit hours at the 8000 level. Candidates must also complete an approved creative component project.

### Teacher Certification

The Teacher Certification option requires a minimum of 32 hours of graduate credit (to include a minimum of 29 hours of formal graduate courses, plus a maximum of 3 hours of 8080 Creative Component) with a minimum of 16

credit hours at the 8000 level. Candidates must also complete an approved creative component project. Included in the course work for this option are some of the classes needed for certification to teach secondary high school agriculture in Missouri.

## Doctoral Degree in Agricultural Education

### Admission Contact Information

Dr. Tracy Kitchel ([kitcheltj@missouri.edu](mailto:kitcheltj@missouri.edu))  
 121 Gentry Hall, Columbia, MO 65211  
 573-882-7451

### Admission Criteria

Fall deadline: N/A

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
79	550

Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative	Analytical
Prior to August 1, 2011	1000	4.0
On or After August 1, 2011	297	4.0

Minimum GPA: 3.5 on prior graduate course work

Minimum of 3 years full-time appropriate teaching or other professional experience in elementary, secondary, higher education or industry.

Correspondence with one of the Agricultural Education faculty members in the proposed area of concentration prior to submitting an application. This contact is ultimately a requirement for admission.

### Required Application Materials

#### [To the Graduate School:](#)

All required Graduate School documents

#### [To the Agricultural Education Program:](#)

Resume (upload to the Graduate School application website)

Official transcripts (sent to the Graduate School; no need to send University of Missouri transcripts)

Official GRE scores

Personal data sheet (found at [aged.missouri.edu](http://aged.missouri.edu); upload to the Graduate School application website)

Minimum of 3 letters of recommendation (use Graduate School application website)

Preliminary examination (if necessary)

### **Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

### **Prerequisites**

The focus of the doctor of philosophy program is development of professional educators for teacher certification programs in agriculture. To be admitted, applicants must have completed a minimum of three years of professional experience in a field related to agricultural education.

### **Courses**

See Agricultural Education (AG ED) in the MyZou online system.

## Animal Sciences Graduate Programs

159 ASRC, 920 E. Campus Drive, Columbia, MO 65211  
(573) 882-7446

<http://animalsciences.missouri.edu/academics/graduates.php>

### About Animal Sciences Graduate Programs

The Division of Animal Sciences has a broad-based teaching program, and our faculty members are noted for teaching and mentoring excellence. Our PhD program was recently ranked among the best in the country by the National Research Council and our research program among the best in the world by Reuters. Our graduate program has maintained or increased numbers, support, and placement rates over the past five years. The Division strives to maintain a diverse faculty qualified to teach relevant courses in five discipline areas (reproductive and environmental physiology, ruminant and monogastric nutrition, genetics/genomics, meat science and livestock production) and across six species (swine, dairy cattle, beef cattle, poultry, companion animals and horses) to serve the demand for graduates to be employed nationwide in research, teaching and industry.

### Animal Sciences Faculty

William R. Lamberson

Interim Division Director and director of graduate studies, professor, PhD, University of Nebraska. Animal breeding and genetics.

Jeffre D. Firman

professor, PhD, University of Maryland. Poultry physiology and nutrition.

Kevin L. Fritsche

professor, PhD, University of Illinois. Lipid nutrition, immunology.

Rodney D. Geisert

professor, PhD, University of Florida. Reproductive physiology-swine.

George Wm. Jesse

professor, PhD, University of Missouri-Columbia. Swine production and management.

Duane Keisler

professor, PhD, West Virginia University. Endo/Neuroendocrinology and growth physiology.

Monty S. Kerley

professor, PhD, University of Illinois. Fermentation biochemistry.

David Ledoux

professor, PhD, University of Florida. Mineral metabolism.

Carol Lorenzen  
professor, PhD, Texas A&M. Meat science.

Matthew Lucy  
professor, PhD, University of Florida. Molecular endocrinology.

David Patterson  
professor, PhD, Kansas State University. Extension beef cattle reproduction.

Randall Prather  
professor, PhD, University of Wisconsin-Madison. Reproductive physiology/molecular biology.

Rex R. Ricketts  
professor, PhD, University of Missouri-Columbia. Commercial agriculture.

R. Michael Roberts  
professor, PhD, Oxford University. Molecular biochemistry.

Michael F. Smith  
professor, PhD, Texas A&M University. Reproductive physiology-beef cattle.

Don Spiers  
professor, PhD, Michigan State University. Environmental physiology.

Jeremy Taylor  
professor, PhD, University of New England, Australia. Genomics.

Kathy Sharpe Timms  
professor, PhD, University of Tennessee. Infertility and endometriosis.

Jonathan Green  
associate professor, PhD, University of Missouri-Columbia. Molecular biology.

Tim Safranski  
associate professor, PhD, University of Missouri-Columbia. Extension-swine breeding and genetics.

Marcia Carlson Shannon  
associate professor, PhD, Michigan State University. Extension-swine nutrition.

Peter Sutovsky  
associate professor, PhD, Czech Academy of Sciences. Molecular/cell/development biology.

Bryon Wiegand  
associate professor, PhD, Iowa State University. Meat science.

Christine Elsik  
associate professor, PhD, Texas A&M, Computational genomics.

Gavin Conant  
assistant professor, PhD, University of New Mexico, Bioinformatics and genetics.

Rocio Rivera  
assistant professor, PhD, University of Florida. Animal molecular and cell biology.

Justin Sexten  
assistant professor, PhD, University of Illinois-Urbana. Ruminant nutrition.

Matthew Waldron  
assistant professor, PhD, Cornell University, Dairy nutrition and physiology.

Kevin Wells  
assistant professor, PhD, North Carolina State University. Molecular genetics.

Trista Strauch Safranski  
teaching assistant professor, PhD, Texas A & M University. Nutrition/reproduction interactions.

Robert Schnabel  
research associate professor, PhD, Texas A & M University. Genetics.

Dennis Lubahn  
adjunct professor, PhD, Duke University. Nutritional aspects of estrogen and hedgehog signaling in reproduction and cancer.

Aaron Gaines  
adjunct assistant professor, PhD, University of Missouri. Animal nutrition.

Laura Schulz  
adjunct assistant professor, PhD, University of Illinois-Urbana. Reproductive biology and perinatal research.

Aimee Wurst  
adjunct assistant professor, PhD, West Virginia University. Reproductive physiology.

Wolfgang Pittroff  
adjunct assistant professor, PhD, Texas A & M University. Rangeland management, livestock science and watershed restoration.

Tumen Wuliji  
adjunct associate professor, PhD, University of New South Wales. Small ruminant animal breeding, genetics and reproductive biotechnology.

## Master's Degree in Animal Sciences

### Admission Contact Information

Cinda Hudlow, 159 ASRC, 920 E. Campus Drive, Columbia, MO 65211.

(573) 882-7446

<http://animalsciences.missouri.edu/academics/graduates.php>

### Admission Criteria

Fall deadline: Rolling

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal	Quantitative
<b>Prior to August 1, 2011</b>	400	550
<b>On or After August 1, 2011</b>	146	146

Minimum GPA: 3.0

Approval of adviser

Bachelor's degree

### Required Application Materials

#### [To the Graduate School:](#)

All required Graduate School documents

#### [To the Animal Sciences Program:](#)

Statement of career objectives

3 reference letters

Resume

Official GRE score report

### Graduation Requirements

The standard master's degree program requires a minimum of 30 hours of graduate credit (to include a minimum of 24 hours of formal graduate courses, plus a minimum of six hours of 8090 Research) and an approved thesis based on original research.

Two credit hours in seminar are required for the Master of Science degree.

No more than two 7000-level animal sciences courses can contribute to the plan of study.

## Doctoral Degree in Animal Sciences

### Admission Contact Information

Cinda Hudlow, 159 ASRC, 920 E. Campus Drive, Columbia, MO 65211

(573) 882-7446

<http://animalsciences.missouri.edu/academics/graduates.php>

### Admission Criteria

Fall deadline: Rolling

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal	Quantitative
<b>Prior to August 1, 2011</b>	400	550
<b>On or After August 1, 2011</b>	146	146

Approval of adviser

MS degree (with thesis) preferred

### Required Application Materials

#### [To the Graduate School:](#)

All required Graduate School documents

#### [To the Animal Sciences Program:](#)

Official GRE score report

Statement of career objectives

3 reference letters

Resume

### Graduation Requirements

The number of credit hours in formal course work and in research varies with the student's background, training interests and the nature of the research. Four credit hours of seminar and a course in research

ethics are required for the doctoral degree. A dissertation based on original research is required of each candidate. Completion of requirements for a doctoral degree is generally expected within three years (five years without prior MS) after admission to the PhD program.

## **Animal Sciences Courses**

See Animal Science (AN SCI) in the MyZou online system.

# Anthropology Graduate Programs

College of Arts and Science  
107 Swallow Hall  
573-882-4731  
<http://anthropology.missouri.edu/>

## About Anthropology Graduate Programs

Incoming graduate students would be admitted into one of three tracks:

- 1) MA track
- 2) PhD students required to complete MA coursework
- 3) PhD students with MA in hand

Details for each category are listed below.

### *Track One: MA students*

Students admitted to this track will be classified as MA seeking students with the graduate school. These students will complete all requirements for the MA degree as currently outlined in the Anthropology graduate program, including the MA exam and completing a thesis. Upon completion, the student can, if eligible, apply to the Anthropology program for acceptance as a PhD seeking student.

### *Track Two: PhD students required to complete MA coursework*

Students admitted to this track will be classified as PhD seeking students with the graduate school. These students will complete all course requirements for the MA, as well as the MA exam. With the consent of the student's committee, they will then complete either a thesis, OR a proposal that will serve as their PhD dissertation proposal, OR a published, primary authored paper. In each of these cases, the student will still need to orally defend the work. Upon successful completion of these requirements, they will be awarded an MA, and will then be eligible to continue work towards their PhD without the need of reapplying to the program or changing their student status.

### *Track Three: PhD students with MA in hand*

Students admitted to this track will be classified as PhD seeking students with the graduate school. They will not be required to complete the MA exam or prepare a thesis, proposal or published paper, nor will they earn an MA during their graduate work at Mizzou. Upon completion of the requirements currently listed for the Department's PhD program, the student will be awarded a PhD.

The department also participates in the graduate minor in Ancient Studies and the certificate program in Conservation Biology.

## Facilities and Collections

Departmental research facilities/collections include a paleoethnobotany laboratory, a ceramic analysis laboratory, a stone artifact analysis laboratory, a comparative faunal collection, a skeletal biology laboratory, extensive holdings of New World (especially Missouri) archaeological and skeletal materials and ethnographic specimens from many parts of the world. The department's Museum of Anthropology provides opportunities for museum-oriented studies (see also the Museum Studies Graduate Minor). The Museum Support Center, an archaeological research and curation facility is located on the edge of campus. The University of Missouri Herbarium is also

housed in this facility. Refer to the Web site for more information about departmental facilities (<http://anthropology.missouri.edu>). The University of Missouri Research Reactor provides opportunities for students interested in archaeometry. Resources in other departments or research units available by arrangement include the Archaeometrics Laboratory of the Research Reactor, the Electron Microscopy Facility, and the Stable Isotope Laboratory of the Department of Geological Sciences.

### **Research by Location**

Regular faculty members of the department conduct research in the following geographical areas, beyond Missouri: the Northwest (archaeology), Europe (biological anthropology), the Mississippi River Valley (archaeology), Canada (biological and cultural anthropology), Ecuador and Peru (archaeology), South Asia—India and Bangladesh (cultural anthropology), Dominica and Amazonia (biological & cultural anthropology), and the North American Southwest (archaeology). Refer to the faculty list for interests of emeritus faculty.

### **Internal Funding Opportunities**

Teaching, research and student assistantships, fellowships and scholarships are available to qualified graduate students on a competitive basis. Applications for financial assistance should accompany application for admittance to the graduate program in anthropology. Refer to the departmental Web site (<http://anthropology.missouri.edu>) for applications and due dates, or address inquiries to the Department of Anthropology, 107 Swallow Hall, Columbia, MO 65211.

## **Anthropology Faculty**

Alex W. Barker

adjunct associate professor, director, Museum of Art & Archaeology, PhD, University of Michigan. Emergence of social complexity, iconography, cultural property and museums, Southeastern archaeology, archaeology of Eastern Europe.

Gregory Blomquist

assistant professor, PhD, University of Illinois-Urbana. Biological anthropology, genetics, primatology.

Libby Cowgill

assistant professor, PhD, Washington University. Biological anthropology, late Pleistocene human evolution, human growth and development, functional morphology.

Mark V. Flinn

professor, PhD, Northwestern University. Evolutionary theory, human mating systems, parent–offspring relationships, time allocation methods, childhood stress, radioimmunoassay of hormones; Caribbean.

R. Lee Lyman

chair, professor, PhD, University of Washington. Archaeology, history of North American archaeology, faunal analysis, taphonomy, conservation paleozoology; Northwest.

Michael J. O'Brien

professor, PhD, University of Texas. Archaeology, theory and method, evolution; Midwest.

Craig Palmer

associate professor, PhD, Arizona State University. North Atlantic maritime cultures, especially Newfoundland, evolution and human behavior, especially related to religion, kinship, ecology and human sexuality.

Karthik Panchanathan  
assistant professor, PhD, University of California, Los Angeles. Evolutionary theory, cultural evolution, the evolution of cooperation..

Deborah M. Pearsall  
professor, PhD, University of Illinois. Paleoethnobotany, ethnobotany, phytolith analysis, archaeology, agricultural origins and evolution; South America, Caribbean, Midwest.

Lisa Sattenspiel  
professor, PhD, University of New Mexico. Disease in human populations, demography, ecology, mathematical modeling, population genetics.

Mary Shenk  
assistant professor, PhD, University of Washington. Cultural anthropology, human behavioral ecology, marriage, family, demography, India and Bangladesh.

Christine S. VanPool  
assistant professor, PhD, University of New Mexico. Archaeological method and theory, religion, iconography and symbolic analysis, ceramic analysis, U.S. Southwest and northern Mexico.

Todd L. VanPool  
associate professor, PhD, University of New Mexico. Archaeological method and theory, cultural evolution, Southwestern archaeology, stone artifact analysis, quantitative methods, anthropology of gender.

Rob Walker  
assistant professor, PhD, University of New Mexico. Cultural anthropology and biological anthropology, human behavioral ecology, cultural evolution, life history theory, phylogenetic methods; South America, Amazonia.

#### Emeritus Faculty

Robert A. Benfer  
professor emeritus, PhD, University of Texas. Bioarchaeology, physical anthropology, archaeology, methods, statistics; Peru, Mexico.

Louanna Furbee  
professor emeritus, PhD, University of Chicago. Linguistic and cognitive anthropology, language and culture; Mesoamerica (Maya), Andes, Chiwere (Siouan).

Peter M. Gardner  
professor emeritus, PhD, University of Pennsylvania. Anthropology of knowledge, cognition, foraging adaptations, gender, history of anthropology; India, Subarctic.

Michael C. Robbins  
professor emeritus, PhD, University of Minnesota. Cultural anthropology, psychological anthropology, substance use, mathematical anthropology.

Ralph M. Rowlett  
professor emeritus, PhD, Harvard University. Prehistory, ethnohistory, method and theory, lithic and TL analysis; Europe, Old World.

Robert F. G. Spier  
professor emeritus, PhD, Harvard University. Cultural anthropology, technology; Old World.

Samuel D. Stout  
professor emeritus, PhD, Washington University. Biological anthropology, bone histology, bone physiology, paleopathology, forensic anthropology (not in residence at MU).

W. Raymond Wood  
professor emeritus, PhD, University of Oregon. Archaeology, ethnohistory; Great Plains and Midwest.

## Admission (Track One and Track Two)

Admission Contact Information  
107 Swallow Hall, Columbia, MO 65211  
573-882-4731

### Admission Criteria

Fall deadline: January 10  
Spring deadline: October 15 (no departmental financial aid available this term)

Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative	Analytical
Prior to August 1, 2011	1000	3.0
On or After August 1, 2011	300	3.0

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

Minimum GPA: 3.25 in last 60 hours and in all anthropology courses

Letters of recommendation: 3

Statement of intent

Some of these requirements may be waived in exceptional cases. Acceptance into the graduate program in anthropology is not limited to students with undergraduate degrees in anthropology.

### Required Application Materials

#### [To the Graduate School:](#)

All required Graduate School documents except transcripts

3 letters of recommendation (through online application)

Department of Anthropology application

Official GRE scores

Statement of purpose

Teaching assistant financial aid form (recommended)

[To the Anthropology Program:](#)

Official transcripts

**Financial Aid from the Program**

The teaching assistant financial aid form is required for consideration for financial aid.

**For More Information**

Further description of the graduate program and requirements may be found in the MU Department of Anthropology Graduate Program Guide, available upon request or accessible on the department's website.

**Graduation Requirements (Track One)**

A student is expected to have advanced knowledge in the three subfields represented in our program (archaeology, biological anthropology, cultural anthropology) and understand the relationships among them upon completion of the MA degree. Opportunities for specialization are provided through research courses leading to a thesis. A program tailored to each student's educational objectives is planned by the student and the advisory committee of at least three members, one of whom is a non-anthropology faculty member.

**Credit Hours Required for Master's Degree (Track One And Track Two)**

Students must complete a minimum of 30 credit hours beyond the Bachelor of Arts degree. At least 9 of the required hours must be 8000-level anthropology courses and seminars, and must include at least one content course (i.e., not a readings or research course). In addition to the 8000-level requirement, all students must take Anthropology 8010 (Cultural Anthropology Theory). Students must also take one (1) course of their choosing in archaeology and one (1) course of their choosing in biological anthropology. A maximum of 12 hours may be in non-thesis research (Anthropology 7990/8990) or reading courses (Anthropology 7960).

**Statistics Component**

Students lacking a basic course in statistics are required to take at least one course, preferably during the first year of graduate work.

**Breadth of Knowledge**

Completion of at least one graduate course in each of the three subfields reflected in our department is required. The MA exam will include information from the three areas.

**Examination**

After completing 27 credit hours, the student must pass the oral MA examination.

An oral exam that:

- 1) is taken no later than the semester following the successful completion of 27 hours in our graduate program.
- 2) is administered by an examination committee consisting of the student's advisor and one member randomly drawn from each of the other two subfields (linguistics excepted).

3) lasts no longer than 2 hours.

4) is designed to determine if the student has both sufficient breadth of knowledge in all three/four sub-fields to teach introductory anthropology courses such as anth 1000 and some current knowledge on at least one sub-field of their choice.

5) If, in the examining committee's opinion, the student has satisfactorily shown competency in all areas except one, then the committee may give the student a conditional pass and require them to write an essay on a specified topic within the inadequate area rather than retaking the entire oral exam. This essay must be approved by the committee before the student is deemed to have passed the exam.

6) can be retaken one, and only one, time.

7) must be successfully passed before the student can defend his or her MA Thesis.

8) includes 5 or more general questions each sub-field has agreed upon earlier and made available to the student to help the student prepare for the exam. This ensures consistency among examinations. Questions asked during the examination should build upon these topics, and can (and should) vary from the limited number of specific questions, especially as related to the student's interests or perceived weaknesses.

**Residency Requirement**

The Department of Anthropology residency requirement is two consecutive 9-hour semesters, or three consecutive 6-hour semesters.

**Thesis (Track One) or thesis, proposal or published paper (Track Two)**

A thesis (Track One) or thesis, proposal or published paper (Track Two), for a minimum of three hours and a maximum of six hours of credit (Anthropology 8090), is required for the master's degree.

**Admission (Track Three)**

Admission Contact Information  
 107 Swallow Hall, Columbia, MO 65211  
 573-882-4731

**Admission Criteria**

Fall deadline: January 10  
 Spring deadline: October 15

Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative	Analytical
Prior to August 1, 2011	1000	3.0
On or After August 1, 2011	300	3.0

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

- Minimum GPA: 3.5 in previous graduate work
- Letters of recommendation: 3
- Master's degree
- Statement of Purpose

A faculty who is a member of the doctoral faculty must agree, as a condition of admission, to accept the student as a PhD advisee. These qualifications apply to all applicants, including those with an MA degree from this department. Applicants whose MA is in a field other than anthropology will be considered under the policies for individuals holding the baccalaureate degree except that the quality of graduate work will be taken into consideration.

### **Required Application Materials**

#### [To the Graduate School:](#)

All required Graduate School documents except transcripts  
3 letters of recommendation (through online application)  
Department of Anthropology application  
Official GRE scores  
Statement of purpose  
Teaching assistant financial aid form (recommended)

#### [To the Anthropology Program:](#)

Official transcripts

### **Financial Aid from the Program**

The teaching assistant financial aid form is required for consideration for financial aid.

### **Specialization**

The doctoral candidate normally specializes in one of the recognized subfields of anthropology or, in consultation with a doctoral program committee, chooses an area of specialization that either cuts across some of the recognized divisions or includes some area outside traditional anthropology. Traditional areas of specialization currently offered include: Social/cultural anthropology, ecological and environmental anthropology, human behavioral ecology, anthropological demography. Biological anthropology, skeletal biology, human osteology, human evolution, demography, epidemiology. Archaeology, chronology, materials research, zooarchaeology, paleoethnobotany, lithic analysis, ceramic analysis, evolutionary archaeology, symbolic analysis, archaeological method and theory.

### **For More Information**

Further description of the graduate program and requirements may be found in the MU Department of Anthropology Graduate Program Guide, available upon request or on the department website.

## **Graduation Requirements**

Students seeking a PhD in anthropology must fulfill all Graduate School requirements within the time period specified in the Graduate Catalog. In addition, the Department requires that PhD students take (or have taken):

1. a basic course in statistics
2. a mid-level statistics course [this requirement may be waived at the discretion of the student's Doctoral Program Committee]
3. Anthropology 8010 (Cultural Anthropology Theory) or equivalent
4. One (1) course in archaeology and one (1) in biological anthropology

## **Foreign Language Requirement**

Competency in at least one foreign language may be required by the student's doctoral program committee.

## **Residency Requirement**

The Department of Anthropology residency requirement is two consecutive 9-hour semesters, or three consecutive 6-hour semesters.

## **Oral Qualifying Examination**

Students must pass an oral qualifying examination during the first year of graduate work. The examination is administered by at least three members of the Anthropology Department faculty. The purpose of the two-hour oral examination is to determine if the student is prepared for doctoral work, and to expose weaknesses that should be met in the course of the degree.

## **Program Committee**

After students successfully qualify for the PhD program, their status is "applicant for the PhD." The Doctoral Program Committee is now established. It is composed of at least four faculty members, at least three of whom must be members of the Department of Anthropology, and at least one from another MU doctoral program who holds a PhD in another subject.

## **Program Objectives**

The PhD degree is primarily oriented toward research competence. Therefore, the student is judged on research promise and ability. The objective of course work is to produce an anthropologist with some competence in all fields and a special competence in a chosen field for purposes of teaching, research and evaluation of others' research.

## **Satisfactory Progress**

Students are expected to make satisfactory progress in their program, and each student's performance is reviewed by the director of graduate studies at the end of each semester. A GPA of 3.5 in anthropology courses must be maintained. The student's Doctoral Program Committee is responsible for developing the plan of study. MU requires a minimum of 72 semester hours beyond the bachelor degree for PhD degrees. There must be a minimum of 15 hours of course work at the 8000-level (exclusive of research, problems and independent study experiences). No set number of hours beyond the MA is mandated, but most students amass 48 to 60 hours of graduate study beyond the MA.

## **Teaching Experience**

PhD candidates are required to attain teaching experience. This can be accomplished either by serving as a departmental graduate teaching assistant for one semester (stipends for which are awarded competitively) or by assisting a faculty member in the preparation and teaching of one course.

## **Comprehensive Examination**

An applicant for the PhD normally takes a comprehensive examination at the end of the second or third year of the program. The comprehensive examination, which involves up to five days of written responses to committee questions and a two-hour oral examination, is designed to determine if the student's level of competence in the field meets professional standards. The student is examined by all members of the Doctoral Program Committee.

## **Post-Comprehensive Examination: PhD Candidacy**

After a student successfully passes the comprehensive examination, the student's status is "candidate for the PhD." Beginning the term after the term in which the comprehensive exam was successfully completed, the candidate for the PhD must maintain continuous enrollment, which is 2 hours of Anthropology 9090 each fall and spring semester, and 1 hour each summer session. Continuous enrollment must be maintained up to and including the term in which the dissertation is defended.

## **Graduation**

The PhD in anthropology is awarded after an accepted dissertation has been submitted and defended successfully before the candidate's Doctoral Program Committee. A minimum of three hours research credit (Anthropology 9090) is needed for the PhD dissertation.

## **Courses**

See Anthropology (ANTHRO) in the MyZou online system.

# Architectural Studies Graduate Programs

College of Human Environmental Sciences  
137 Stanley Hall  
573-882-7224  
<http://arch.missouri.edu/>

## About the Program

The department's mission is to educate future design practitioners, advance research of the built environment and disseminate knowledge of architectural studies to improve quality of life for people. The philosophy of the Department of Architectural Studies embraces the synergy created between architecture and interior design. Having a symbiotic relationship, both fields explore the design process and its final products. Promoting the meaning and value of physical settings and responding to the human condition, the program investigates the interaction between people and their surroundings to create a more beautiful and sustainable world.

The program encourages an interdisciplinary, scholarly climate celebrating aesthetic values and the human sciences. Consistent attention is placed on planning and designing physical environments that support human needs and aspirations. Course work may include courses in supportive areas such as the human and physical sciences, art, humanities and allied design professions.

## Professional Opportunities

Career opportunities for master's and doctoral graduates of the Department and College include leadership positions in design; consultation practices in industry, government and education; and academic and administrative positions in higher education and research. Graduates from the MA degree program may pursue careers in the design professions, education and the advertising and entertainment industries. Graduates of the MS and PhD degree programs pursue academic and professional careers integrating design theory with their research skills.

## Financial Aid from the Program

Limited teaching and/or research assistantships and scholarships are available to graduate students. GTA appointments are based on the match between the department's needs and candidate's background.

## Architectural Studies Faculty

Ruth Brent Tofle  
chair, professor, PhD, University of Minnesota.

Benjamin Schwarz  
professor, PhD, University of Michigan.

Richard Helmick  
professor emeritus, MFA, Ohio University.

Ronald Phillips  
associate professor, ArchD, University of Michigan.

Bimal Balakrishnan  
assistant professor, PhD, Pennsylvania State University.

Newton D'souza  
assistant professor, PhD, University of Wisconsin—Milwaukee.

Michael Goldschmidt  
teaching assistant professor, March/Master of Ecological Design - San Francisco Institute of Architecture.

### **Graduate Program Requirements**

The academic program should be developed in consultation with an adviser by the end of the first full semester or at the successful conclusion of at least nine credit hours. See Graduate School website ('Doctoral Plan of Study and Degree Requirements') for guidelines and requirements regarding course work and role of dissertation committee. Students complete the online Graduate Student Progress System. Annual reviews of graduate students will be conducted to include the indicators listed by the Graduate School.

### **Architectural Studies Degrees**

Graduate programs offer two emphases: 1) in environment and behavior studies with a creative project leading to an MA degree and with research leading to the MS and PhD degrees and 2) in design with digital media studies leading to the MA, MS and PhD degrees. The graduate program builds on Architectural Studies course work and a core of courses in design theory, research methods, graduate seminars, research and readings in environment and behavior.

## **Master's Degree in Architectural Studies**

### **Admission Contact Information**

Dr. Ronn Phillips (phillipsr@missouri.edu)  
137 Stanley Hall; Columbia, MO 65211  
573-882-4575

### **Admission Criteria**

Fall deadline: February 1  
Spring deadline: October 1  
Minimum GPA: 3.0  
Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
	500

### **Required Application Materials**

#### [To the Graduate School:](#)

All required Graduate School documents  
Statement of graduate goals and educational objectives discussing: which of the department's emphasis areas is of interest; intentions regarding the MA, MS; and request for a specific adviser (upload to online

application)

[To the Program:](#)

Departmental application

3 letters of recommendation (excluding MU Architectural Studies faculty). Can be uploaded to the online Graduate School application or mailed directly to the program.

For MA applicants only, electronic portfolio of images and/or publications. (Do not mail originals.)

### **Master of Art**

The creative, project-based, MA plan of study is often undertaken in preparation for careers in the design professions and education, as well as in the advertising and entertainment industries. The project is conducted in the area of design with digital media using high-end computer software. The culmination of the degree is a professionally reviewed, visual project employing digital media.

### **Master of Science**

The design and research-based MS plan of study is often undertaken in preparation for professional practice or design education. The project is conducted in emphasis areas as described below. Within each of these emphases, specific course work is selected based on subject matter, the type of design project and its research application. The culmination of the degree is a professionally reviewed design project with supporting written report. The research-based MS plan of study is often undertaken as preparation for the doctoral degree.

Research is conducted in one of two emphasis areas — design with digital media or environment and behavior studies. Within each emphasis area, specific course work is selected based on subject matter and the type of research method selected — quantitative, qualitative or a combination of both methods. The culmination of the degree is the written research thesis.

MS students must complete a final oral examination by an approved faculty committee and submit a presentation proposal at a professional conference or a manuscript in a professional journal.

### **Environment and Behavior Studies**

The Environment and Behavior Studies focuses on the multifaceted relationships between people and their physical, social, and cultural environments. Environment-behavior research explores a variety of environments, linking them to a range of behavioral concerns. This program is suitable for persons who seek careers in research, consulting, and/or teaching in architecture, interior design, and related environmental design disciplines. A design project leads to the MA and research leads to the MS or PhD degrees.

#### **Current emphasis areas in environment and behavior include:**

- Design Education
- Learning Environments for Design
- History of the Designed Environment
- Design Planning and Analysis
- Aesthetics of Design
- Universal Design/Accessibility
- Environment and Aging
- Health Care Design
- Housing, Neighborhood Design, and Sustainability
- Organizational Systems and Design
- Facility Management and Design
- Programming, Design and Post-Occupancy
- Evaluation

Contact Dr. Ronn Phillips for more information about the department's graduate program or the emphasis in environment and behavior.

**Design with Digital Media Option**

Design with Digital Media, as an integral part of the design process, focuses on graphic ideation and the application of computer technology for architecture, interior design and related disciplines. This program of study has an emphasis on design with digital media leading to MA, MS, and PhD degrees. MA is a project-based program of study, whereas the MS is research-based.

Current study areas in the digital media program include:

- 3D analysis of form, space and design principles in architecture
- 3D modeling and rendering, animation
- Design computing and cognition
- Design process and creativity research
- Digital and integrative audiovisual media for design communication
- Digital design education for architecture and interiors
- Digital design studio
- Impact of digital media on design thinking
- Study, exploration and research of generative digital representation techniques
- Theories of filmic and moving images
- Theory of representation
- Video game technology for architecture and interiors
- Virtual reality and real-time environment

The culmination of the degree is a written and/or visual project employing computer applications for design methods. Applicants interested in the Design with Digital Media option should contact the coordinator of Design with Digital Media Dr. Bimal Balakrishnan for course content and research proposals.

**Doctoral Degree in HES, Architectural Studies**

**Admission Contact Information**

Dr. Ronn Phillips (phillipsr@missouri.edu)  
 137 Stanley Hall; Columbia, MO 65211  
 573-882-4575

**Admission Criteria**

Fall deadline: February 1  
 Spring deadline: October 1  
 Minimum GPA: 3.0  
 Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
	500

**Required Application Materials**

[To the Graduate School:](#)

All required Graduate School documents

Statement of graduate goals and educational objectives discussing: which of the department's emphasis areas of interest; intentions regarding PhD; and request for a specific adviser (upload to online application)

[To the Architectural Studies Program:](#)

Departmental application

3 letters of recommendation (excluding MU Architectural Studies faculty). Can be uploaded to the online Graduate School application or mailed directly to the program.

## **Doctor of Philosophy**

The Doctor of Philosophy (PhD) degree is designed for individuals who are interested in acquiring the knowledge and skills that are needed to conduct substantive, innovative, and original research that contribute to the theoretical and methodological foundation of architecture and interior design, and the dissemination of this research through teaching, publication, and practice. To this end, the curriculum is structured so that students move gradually from overview of architectural research to the identification and pursuit of major and minor areas of specialization and, finally, to highly specialized original dissertation research. This framework promotes stimulating intellectual discourse among individuals with varying research philosophies and interests.

In order to pass examination, and thus qualify as the basis for the award of the PhD degree, the dissertation should have the following attributes:

- It demonstrates authority in the candidate's field and shows evidence of command of knowledge in relevant fields;
- It shows that the candidate has a thorough grasp of the appropriate methodological techniques and an awareness of limitations;
- It makes a distinct contribution to knowledge because of the originality of the approach and/or interpretation of the findings and, in some cases, the discovery of new facts;
- It demonstrates an ability to communicate research findings effectively in the professional arena and in an international context;
- It is a careful, rigorous and sustained piece of work demonstrating that a research "apprenticeship" is complete and the holder should be admitted to the community of scholars in the discipline.

Doctoral study in Architectural Studies, College of Human Environmental Sciences, is research-based and expands knowledge in the "major" areas of either environment and behavior or design with digital media. The major area is defined as that area of specialization in the doctoral program within which the student is expected to write his/her dissertation.

Students will choose a "supportive cognate area" which is intended to reinforce the development of an understanding of the discipline. Supporting cognate area courses are selected from a broad spectrum of disciplines providing students with the opportunity to design an individualized program of study that capitalizes on their unique interests and talents.

## **PhD Requirements**

The University of Missouri requires a minimum of 72 semester hours beyond the baccalaureate degree for the PhD. The doctoral program committee provides departmental approval of the student's plan of study (Form D-2), a list of the courses and the credit to be earned in each of them, which will, when completed:

- Prepare the student for research or scholarly investigation in the chosen field of study.
- Satisfy the credit-hour and residency requirement of the department.
- Satisfy any special requirements (collateral field, other special research skills) imposed by the department.
- Satisfy the Graduate School's requirement for a minimum of 15 hours of course work at the 8000/9000 level (exclusive of research, problems and independent study experiences).

The committee also recommends to the vice provost/dean, as part of the plan of study, any request for transfer of graduate credit. The student must substantially complete the course work outlined in the plan of study to the satisfaction of the doctoral program committee and the Graduate School before being declared ready for the comprehensive examination. See the MU Graduate Catalog for further requirements.

The PhD is a research-based plan of study leading to the written doctoral dissertation. The dissertation is distinctive because it demonstrates the ability to conceive of and execute scholarly research, and it makes a contribution of new knowledge to the discipline. Research is conducted in one of the two emphasis areas — environment and behavioral studies or design with digital media. Specific course work is chosen based on subject matter and the type of research method selected— quantitative, qualitative or a combination of both.

PhD students must complete a final oral examination by an approved faculty committee and submit a presentation proposal at a professional conference or a manuscript in a professional journal.

### **Courses**

See Architectural Studies (ARCHST) in the MyZou online system and department website at <http://arch.missouri.edu>.

## Art History & Archaeology Graduate Programs

College of Arts and Sciences  
109 Pickard Hall  
Columbia, MO 65211  
573-882-6711

<http://aha.missouri.edu/index.html>

### About Art History and Archaeology

The University of Missouri has played a prominent role in the teaching of the visual arts in North America since Walter Miller and John Pickard first began lecturing on campus in the 1890s. Our faculty and staff reflect the widening scope of our discipline with particular strengths in the areas of classical Mediterranean archaeology, medieval and Renaissance art, and the art and architecture of modern Europe and the Americas. Current faculty research interests range from early Greece and Rome to modern architecture and contemporary painting. Resources available to faculty and students include the department's Visual Resources Center and the Museum of Art and Archaeology, both located in Pickard Hall on the historic Francis Quadrangle, as well as the extensive collections of Ellis Library.

### Degrees Offered

The Department of Art History and Archaeology offers the MA and the PhD degrees in art history and classical archaeology. The department participates in interdisciplinary graduate minors in Ancient Studies, Medieval and Renaissance Studies, Museum Studies, and Women's and Gender Studies.

### Funding: Internal and External

The Department of Art History and Archaeology offers two forms of graduate support: teaching assistantships in introductory and upper-level courses; and research assistantships in the Visual Resources Center, which provides students with the opportunity to learn a variety of skills vital to the field in the digital age. In addition, the Museum of Art and Archaeology provides research assistantships that allow students to work closely with curators in various departments of the Museum.

Generally, the department and the museum offer .25 FTE (full time equivalent) assistantships that require approximately ten hours of work per week. These provide a nine-month stipend; a tuition waiver that covers resident educational and non-resident fees; and a 50% medical insurance subsidy if you enroll in "Student Accident and Sickness Insurance" program. In special circumstances, the Department and the Museum will offer a .5 FTE to advanced students.

Incoming students are considered for funding when they apply to the program. Returning students submit applications for continued funding in the spring semester. The Department follows the rules set by the Graduate School regarding tuition waiver limits.

In addition to teaching and research assistantships, the department may award departmental fellowships to advanced students: the Herbert Schooling Fellowship; the John Pickard Fellowship; and the Walter Miller Fellowship for students in classical archaeology. Holders of these fellowships may, with proper consent, hold additional grants not to exceed \$1000 or may hold teaching assistantships.

Finally, the department offers a number of fellowships and travel awards:

- \* The Edzard Baumann Traveling Fellowship in European Art
- \* The Irina Hans Fellowship in Art History
- \* The Osmund Overby Fund for research in American art, architecture, and historic preservation.
- \* The Saul and Gladys Weinberg Traveling Fellowship for advanced students in classical archaeology.

Students interested in these awards should contact the director of graduate studies and their advisors for application instructions.

In addition, the University of Missouri Graduate School sponsors two major fellowship programs: a spring competition and a Supplemental Graduate Fellowship Program. Applicants in both art history and archaeology are eligible for these fellowships, which are awarded to entering students through a campus-wide competition. Nominations for both are completed by the director of graduate studies in consultation with the entire faculty. Students in the Department of Art History and Archaeology have held a number of these awards, including the G. Ellsworth Huggins Scholarship, the Gus T. Ridgel Fellowship, and the Robert E. Waterston Award.

Students enrolled in MA and PhD programs are also eligible for awards from The Graduate Professional Council (GPC), which are designed to assist students who are traveling to present research papers, posters or creative works at conferences or symposia. The Graduate Student Association (GSA) also awards travel grants to students who are presenting a paper or poster, or chairing a plenary session or roundtable discussion, at an academic conference.

Finally, the department encourages graduate students to apply for internships, study abroad programs, grants, and fellowships that support their programs of study. An excellent place to initiate this search is *Resources in Art History for Graduate Students: A Newsletter of Fellowships and other Opportunities for Art History Graduate Students* [<http://www.efn.org/~acd/resources.html>].

### **For More Information**

For more information, write the director of graduate studies in Department of Art History and Archaeology, 109 Pickard Hall, Columbia, MO 65211. You are also encouraged to consult the department's [website](#).

### **Art History and Archaeology Faculty**

Anne Rudloff Stanton  
associate professor, PhD, University of Texas-Austin. Late Medieval and northern Renaissance art.

Kristin Schwain  
associate professor, PhD, Stanford University. American art and material culture.

Keith Eggener  
director of graduate studies, associate professor, PhD, Stanford University. Modern architecture and American art.

Susan Langdon  
chair, professor, PhD, Indiana University. Greek art and archaeology.

Norman Land  
professor, PhD, University of Virginia. Italian Renaissance art and Baroque art.

Marcus Rautman  
professor, PhD, Indiana University. Late antique, Byzantine and early Medieval art and archaeology.

Kathleen Warner Slane  
professor, PhD, Bryn Mawr College. Roman art and archaeology.

James van Dyke  
assistant professor, PhD, Northwestern University. Modern European art and contemporary art and theory.

Michael Yonan  
director of undergraduate studies, associate professor, PhD, University of North Carolina at Chapel Hill. 18th and 19th century European art.

William Biers  
professor emeritus, PhD, University of Pennsylvania. Greek art and archaeology.

Patricia Crown  
professor emerita, PhD, University of California-Los Angeles. 18th- and 19th-century art and women's and gender studies.

Howard Wight Marshall  
professor emeritus, PhD, Indiana University. American folk art, material culture and vernacular architecture.

Osmund Overby  
professor emeritus, PhD, Yale University. Architecture and American art.

## **Master's Degree in Art History and Archaeology**

### **Admission Contact Information**

Keith Eggener ([EggenerK@missouri.edu](mailto:EggenerK@missouri.edu))  
109 Pickard Hall  
Columbia, MO 65211  
573-882-6711

### **About the Master's**

The MA program in the Department of Art History and Archaeology has two primary goals: to provide graduate students with a strong background in the history of art, from antiquity to the present; and to introduce them to the methods and theories of material and visual analysis, as well as the practices of critical writing and reading. Students who pursue the thesis option have the opportunity to specialize at that stage.

### **Admission Criteria**

Admission to the department on the graduate level is granted yearly to a small number of candidates who hold recognized BA or MA degrees in art history, classical archaeology, classics, or related fields of the humanities and social sciences. In addition to the 3.0 GPA required by the Graduate School, the department requires: a GPA of 3.3 in the major field; minimum GRE score (below) and at least three semesters of a single appropriate foreign language (normally German, French or Italian).

Minimum **GRE** scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative	Analytical	Minimum Total
Prior to August 1, 2011	1000	4.5	
On or After August 1, 2011	300	4.5	

### **Required Application Materials**

All application materials must be submitted directly to the Graduate School through its Online Application for Admission. Applications will not be considered complete until we receive the following:

- Official transcripts or mark sheets from each university or college you have attended
- GRE scores
- Three letters of recommendation concerning academic qualifications to undertake graduate work
- A short statement of the applicant's professional goals and reasons for applying to do graduate work in art history or archaeology
- A copy of a recent term paper as a sample of the applicant's scholarship and writing
- Curriculum vitae

### **Financial Aid from the Program**

Incoming students are considered for funding when they apply to the program. Returning students submit applications for continued funding in the spring semester.

### **Graduation Requirements**

#### *Course Requirements*

The successful completion of the MA requires at least thirty hours of coursework that must include: 8110: Introduction to Graduate Study; 8120: Theories and Methodologies; four distribution requirements that cover four broad periods of study: Ancient, Medieval and Renaissance, 1500-1850, and 1850-Present; and 8070: Master's Tutorial. If students are invited to pursue the thesis option, they must enroll in 8080: Master's Readings and 8090: Master's Research in place of 8070: Master's Tutorial. Courses for an interdisciplinary minor field will be in addition to these minimums.

#### *Language Requirements*

All students must demonstrate reading knowledge of one foreign language, usually German or a Romance language. Departmental language exams are offered in the fall semester of each year, although students can request an examination in the spring semester. Language requirements may be satisfied also by achieving a grade of B or better in a course approved by the Director of Graduate Studies. The department expects that the modern language requirement will be met by the end of the third semester for use in advanced coursework as well as thesis research and writing. In addition to the modern language, students in Classical Archaeology also must have reading knowledge of either Greek or Latin. Students who pursue the thesis option must have reading knowledge of *two* modern languages: German and a Romance language.

#### *Master's Essay*

To complete the degree, students must complete a scholarly essay under the guidance of a faculty adviser. It will most likely be a revision of a research paper from a graduate course taken in the Department of Art History and Archaeology.

### *Master's Essay Oral Examination*

In consultation with the faculty adviser, students will select two additional members of the department faculty to read the essay. Students will discuss their essays in a meeting chaired by their adviser.

### *Master's Thesis Option*

Graduate students who intend to pursue doctoral work should complete the thesis option. This decision is made during the student's second or third semester in residence in consultation with the Director of Graduate Studies and three faculty members in the student's area of interest.

### *Master's Thesis Committee*

The master's thesis committee consists of at least three people: the student's thesis adviser, a second member from within the department, and a third member from outside the department. The student should invite the latter two in consultation with his or her thesis adviser.

The committee must approve the thesis topic in the semester before the student plans to defend the thesis; often, this is accomplished during an interview for candidacy.

### *Master's Thesis*

The master's thesis enables graduate students to engage in independent and thorough research in a specific area of study. While the thesis need not be an original contribution, neither can it be an uncritical compilation of published facts. A successful thesis will demonstrate the student's ability to use bibliography in the field; effectively utilize research tools and techniques; synthesize a variety of types of sources; and sustain an argument.

### *Master's Thesis Defense*

The defense of the master's thesis is an oral examination, chaired by the student's adviser, which focuses specifically on the MA thesis. The student should submit a complete draft of the thesis to the adviser at least two months before the intended defense date and a final draft, approved by the adviser, to the entire committee 30 days before the defense. Any changes recommended by the committee during the defense must be made before the finished thesis can be submitted to the Graduate School.

### *More Information*

Further guidelines are included in the department's graduate programs brochure or on the website.

## Doctorate Degree in Art History and Archaeology

### Admission Contact Information

Keith Eggener ([EggenerK@missouri.edu](mailto:EggenerK@missouri.edu))  
109 Pickard Hall  
Columbia, MO 65211  
573-882-6711

### About the PhD

In the Doctoral Program, students deepen their exploration of art history or classical archaeology and demonstrate their ability to carry out original scholarship.

The department advises doctoral students in the following areas of study:

- Greek Art and Archaeology
- Roman and Late Antique Art and Archaeology
- Early Medieval Art and Archaeology
- Late Medieval Art
- Renaissance and Baroque Art
- 18 th Century Art
- 19 th Century Art
- 20-21 st Century Art
- American Art
- Architectural History

### Admission Criteria

The department accepts as candidates for the PhD students who have earned an MA or its equivalent in art history or classical archaeology, either from the University of Missouri or from an institution recognized by the university. An MA thesis is a prerequisite for the PhD in both art history and classical archaeology. The Doctoral Program Committee (see below) determines the acceptability of work completed elsewhere.

Students completing an M.A. degree in the Department of Art History and Archaeology at the University of Missouri-Columbia who want to continue for the Ph.D. must be accepted for advising by a faculty member who is a member of the doctoral faculty. Such students should submit a statement of purpose and a current CV to the department by the January 18 deadline. After they are accepted for advising, they need to submit a “ Change of Program, Degree, Emphasis or Advisor Form” to the Graduate School.

### Required Application Materials

All application materials must be submitted directly to the Graduate School through its Online Application for Admission. Applications will not be considered complete until we receive the following:

- Official transcripts or mark sheets from each university or college you have attended
- GRE scores
- Three letters of recommendation concerning academic qualifications to undertake graduate work
- A short statement of the applicant's professional goals and reasons for applying to do graduate work in art history or archaeology
- A copy of a recent term paper as a sample of the applicant's scholarship and writing, and
- Curriculum vitae

## **Financial Aid from the Program**

Incoming students are considered for funding when they apply to the program. Returning students submit applications for continued funding in the spring semester.

## **Graduation Requirements**

### *Coursework*

The Graduate School requires a minimum of 72 hours for the PhD. At least 42 of those hours must be completed after the receipt of MA. Up to 30 hours from a previous institution can count toward the total of 72 hours. Most students will take more than the minimum number of courses and requirements

The 42 hours must include:

- At least one course from the following four areas—Ancient, Medieval and Renaissance, 1500-1850, and 1850-Present—unless students have taken an equivalent at the MA level.
- 27 hours of courses in the major areas. At least 12 of the 27 hours must be seminars at the 8000 level.
- 15 hours of coursework in the minor areas. At least 6 of the 15 hours must be taken at the 8000-level

The student's program of study is determined in consultation with the Doctoral Program Committee. The Doctoral Program Committee is constituted in October during the first year of study. It consists of at least four people: the student's adviser; two additional scholars from within the department; and an outside committee member. The committee:

1. Reviews the student's MA thesis and determines its equivalency;
2. Accepts any transfer of credit from previous institutions;
3. Approves the plan of study;
4. Determines the major and minor areas as well as the scheduling of the comprehensive exams;
5. Approves the subject of the student's dissertation;
6. Examines the student's dissertation.

### *Languages*

All students must demonstrate reading knowledge of two foreign languages, usually German and a Romance language relevant to their area. Departmental language exams are offered in the fall semester of each year, although students can request an examination in the spring semester. Language requirements may be satisfied also by achieving a grade of B or better in a course approved by the Director of Graduate Studies.

In addition to the modern languages, students in classical archaeology must demonstrate reading knowledge of both Greek and Latin. This requirement may be satisfied by passing with a grade of B or better in a course numbered 7500 or higher in both Greek and Latin *and* by taking a second course at this level (7500 or higher) in the language more closely related to the major field of study. Equivalent courses taken at other institutions must be approved by the Director of Graduate Studies.

### *Comprehensive Examination*

The comprehensive examination in the major and minor areas of art history and archaeology, determined by the student and the doctoral program committee, consists of both written and oral examinations.

### *Dissertation*

The dissertation is expected to be an original, scholarly contribution to the discipline. The topic must be approved by the adviser and the Doctoral Program Committee. A dissertation proposal should be filed with members of the committee within two months of passing the comprehensive exams. A proposal for a dissertation fellowship will satisfy this requirement.

Individual chapters are generally submitted to the adviser as they are written. Other members of the Doctoral Program Committee may also criticize them in draft form. A complete, revised draft of the dissertation must be approved by the adviser at least two months before the defense. Students should distribute the final draft to each member of the committee at least one month before the defense.

Students maintain continuous enrollment by registering for 9080 or 9090 and by submitting a progress report to the Graduate Student Progress System and their adviser each term. Dissertation advising is not normally available during the summer unless previous arrangements have been made.

Further guidelines, including available areas of doctoral study, are included in the department's website.

### *Dissertation Defense*

The final examination will be in the form of an oral defense of the dissertation. It must take place on or before the penultimate Friday of classes. Any changes recommended by the committee during the defense must be made and approved before the finished thesis can be submitted to the Graduate School. Students are responsible for ensuring they meet the deadlines and guidelines established by the Graduate School for dissertation submission and graduation.

## **Courses**

See Art History and Archaeology (AR H A) in the myZou online system.

## Art: Master of Fine Arts

Department of Art  
 A126 Fine Arts Building  
 Columbia, MO 65211-6090  
 573-882-3255  
<http://art.missouri.edu/grad>

The Department of Art offers a Master of Fine Arts (MFA) program that focuses on the creative goals of the individual. Our aim is to guide each student to finding and developing a particular direction and language as demonstrated by a coherent and conceptually unified body of artwork. Through an intense studio-based practice, our graduates develop into professional artists and college level educators who will successfully contribute to the culture on a local, national and global scale through different fields in the visual arts.

### Degree Emphasis

Applicants typically study with an emphasis within a particular art medium. Applicants declare media emphasis of their choice at the time of application to the program. Media areas for selection include ceramics, drawing, fibers, graphic design, painting, photography, printmaking, and sculpture. Aspects of new media (2D and 3D computer imaging and animation, video production, web publishing and other digital media) are also integrated into the curriculum of many of the listed traditional media.

### Financial Aid

Fellowships, scholarships, and tuition waivers, along with graduate teaching assistantships and graduate research assistantships with stipends are available to qualified graduate students. Assistantships include stipends. Some aid is awarded upon acceptance into the program, while others may be awarded later as the student develops within the program. Applications for graduate teaching assistantships should be submitted along with the application portfolio to the director of graduate studies. Application instructions follow later in this document. For a list of scholarships within the Department of Art, please visit the departmental website at: <http://art.missouri.edu/scholarships.html>

Some campus-wide opportunities are available, too. Most prominent would be the Mizzou Graduate Fellowship that is available for applicants for the fall semester (submitting deadline on January 1<sup>st</sup> each year) only. For details see: <http://gradschool.missouri.edu/financial/assistantships-fellowships/fellowships/>

### Admission Criteria

Fall semester deadline (priority for campus scholarships):  
 January 1 if seeking nomination for Mizzou Graduate Fellowship  
 January 15 if seeking admission into the graduate program only.  
 Spring semester deadline: September 1  
 Minimum GPA: 3.0  
 Minimum TOEFL\* scores:

Internet-based test (iBT)	Paper-based test (PBT)
80	550

\*TOEFL is for students from countries where English is not the native language.

The preferred undergraduate degree for admission to the graduate program in visual art is the Bachelor of Fine Arts degree (BFA). However, applicants holding the BA, BS or other bachelor's degrees are eligible to apply if they have a minimum of 40 hours of undergraduate studio credits or an equivalent commensurate professional experience. Applicants for the Graphic Design Area are required to have a minimum of 2 years professional experience before applying.

Application materials are evaluated to determine if the applicant has the preparation and ability to pursue an advanced degree. Admission is based on the recommendations from the art department graduate faculty members representing each of the media areas. Some applicants, may be placed on a waiting list as alternates, then accepted if others decline their admission offers.

### **Facilities & Resources**

Laboratory facilities are available in all media areas and there are individual graduate studios available for most students working on the MFA degree. A newly renovated 2-D graduate facility opened in January 2012, which houses 29 new individual studio spaces for graduates in the areas of drawing, painting, printmaking, photography, and fibers.

New digital technologies are abundant. Each classroom has a dedicated iMac connected to a LCD digital projector. Wireless Internet access is available in all classrooms and studios. There are three large computer labs equipped with 24" iMac computers or Mac computers with HD cinematic displays. Current versions of the essential 2D, 3D and 4D creative software applications are loaded onto these machines. The labs also feature large-format Epson Stylus printers for paper and canvas. High-end digital video cameras as well as a green screen studio are also available for graduate students to use. Mac PowerBooks and digital projectors are available for short-term loan for lectures, too. All graduate students have access to ArtStor.org, a comprehensive digital image database, the Department of Art History and Archeology digital image database, plus our own comprehensive slide collection, much of which is also in digital form.

Media areas continually update equipment and curriculum to coincide with technological advancements. In 2010, the printmaking area added a large bed Takach printing press and the photography area added a large-format Epson photo printer. Digital technologies are continually updated. The woodshop that services all media areas was renovated and upgraded with new stationary and safety equipment.

The Department of Art is home to the George Caleb Bingham Gallery. Monthly exhibitions highlight artwork by students, local, regional and national artists. The gallery provides an opportunity for students to experience a variety of traditional and contemporary approaches to art.

Campus art collections include the Museum of Art and Archaeology, Museum of Anthropology and the State Historical Society of Missouri. Ellis Library has an extensive and excellent holding of books, periodicals and reference materials on art and art history.

There are other great resources off-campus. Our yearly Florence Summer Study Abroad Program places students in Italy where students have a month to study firsthand many of the most important masterpieces in Western art history. Soon to be offered is a bi-annual summer study abroad program in Amsterdam. Locally in central Missouri there are other colleges, museums, artist communities, galleries, workshops, fairs, film festivals and other community-based cultural institutions. It is a rich environment full of opportunities for young artists.

## **Faculty Research**

The University of Missouri has been a leader in the visual arts since 1877 when the renowned painter George Caleb Bingham began teaching the first studio courses in the newly formed School of Art. Current faculty members follow in that tradition through their creative work that is nationally and internationally recognized. Their artwork may encompass such varieties as: abstract and figurative painting and drawing, ceramics, sculpture, ceramics sculpture, as well as bronze cast sculpture, traditional and digital photography, all media of printmaking, surface design, illustration, papermaking and book arts, mixed-media, video, installation and performance art plus intermedia and intradmedia approaches. Many faculty members also have mastered various forms of new media such as computer 3D imaging and animation, web publishing and other forms of digital media as part of their artistic expression. Our faculty is a diverse group of highly creative artists working in a wide variety of materials, methods and concepts. All are eager to mentor young artists who share the passion for creativity, critical thinking and the arts.

## **Art Faculty**

Melvin C. Platt  
department chair, PhD, University of Michigan.

Matthew Ballou  
assistant teaching professor, MFA, Indiana University. Drawing.

Nathan Boyer  
associate professor, MFA, Yale University School of Art. Painting/drawing.

Jean M. Brueggjenjohann  
professor, MFA, Indiana University. Graphic Design/digital media.

James H. Calvin  
associate professor, MFA, Bowling Green State University. Sculpture.

R. Bede Clarke  
professor, MFA, University of Iowa. Ceramics.

Christopher Daniggelis  
assistant professor, MFA, The Ohio State University. Printmaking.

Daniel Farnum  
visiting assistant professor, MFA, San Francisco Art Institute. Photography.

J. Brett Grill  
director of graduate studies; associate professor, MFA, New York Academy of Art. Painting/drawing.

William A. Hawk  
associate professor, MFA, Washington University. Painting.

Adrienne W. Hoard  
professor, MFA, EdD, University of Illinois. 2-D design/color theory/art education.

Deborah L. Huelsbergen  
director of undergraduate studies, associate professor, MFA, Iowa State University. Graphic design/digital media.

Joe Johnson  
assistant professor, MFA, Massachusetts College of Art. Photography.

Mark Langeneckert  
director of Florence Summer Study Abroad, lecturer, BFA, Art Center College of Design. Drawing/illustration.

Lampo Leong  
professor, PhD, Central Academy of Fine Arts, Beijing, China and MFA, California College of the Arts.  
Painting/drawing.

Joseph Pintz  
assistant professor, MFA, University of Nebraska. Ceramics/3-D design.

Cherie Sampson  
assistant professor, MFA, University of Iowa. Foundations/3-D design/video.

Josephine M. Stealey  
professor, PhD, University of Missouri. Fibers.

Claire Stigliani  
assistant teaching professor, MFA, University of Wisconsin. Painting/drawing.

Anne Thompson  
visiting assistant professor, MFA, Yale University School of Art. Painting/drawing.

Jessica Thornton  
visiting assistant professor, MFA, Washington University. Painting/drawing.

Richard Wilson  
associate professor, MFA, University of Missouri. Graphic Design/digital media.

Jerry D. Berneche  
professor emeritus, MFA, Ohio University. Painting/drawing.

Robert F. Bussabarger  
professor emeritus, MA, Michigan State University. Ceramics/painting.

Brooke B. Cameron  
professor emeritus, MA, University of Iowa. Printmaking/drawing.

Larry Kantner  
professor emeritus, EdD, The Pennsylvania State University. Fundamentals of art/art education.

Lawrence Rugolo  
professor emeritus, MFA, University of Iowa. Design/serigraphs.

Oliver A. Schuchard  
professor emeritus, MFA, Southern Illinois University. Photography.

Frank H. Stack  
professor emeritus, MA, University of Wyoming. Painting/drawing.

## **Admission Contact Information**

Brenda J. Warren, Graduate Student Coordinator [warrenb@missouri.edu](mailto:warrenb@missouri.edu)  
Department of Art, A126 Fine Arts Building  
University of Missouri  
Columbia, MO 65211-6090 USA  
573-882-4037

## **Required Application Materials**

### *Application Materials Submit to the Graduate School:*

- All required Graduate School documents plus the following:
- a. Cover Letter of Intent (stating the goals for pursuing the MFA degree)
  - b. A Digital Assets Sheet (defining the image and video files).
  - c. Current Resume (exhibition, award, publications, artistic experience, etc.)
  - d. An artist's statement
  - e. Three (3) letters of recommendation
  - f. Official transcripts from each college attended
  - g. Application for G.T.A. (optional but necessary for tuition waiver)

### *Application Materials Submit to the Art Department*

The application process requires a digital portfolio documenting 20 separate pieces of the applicant's artwork. Applicants can document these works using twenty (20) to forty (40) digital still images and/or moving image files. Please limit submissions to a maximum of 2 images for any one piece of artwork. The artwork in the portfolio should represent your most recent and most accomplished body of work. The work should indicate your major artistic interests and creative direction. The work should demonstrate your creative ability and media competence. If you are requesting consideration for a teaching assistantship, a few of the images could be works that demonstrate your foundational mastery of a specific media area. *Portfolios must be submitted in digital form on CD only.* Please follow closely the instructions for the submission of images available on the department website: <http://art.missouri.edu/grad>.

## **Advising**

Upon admission to the program, a candidate is assigned a graduate thesis committee chair/major adviser. This person will mentor the student throughout the student's tenure and help the student to establish the three-member graduate thesis committee. By the second semester the student will select another committee member from the Graduate Faculty to serve as the student's second adviser. The chair/major adviser will also help the graduate student to select an outside member who is from the graduate faculty of another department. In addition, students have access to all the art department faculty members for consultation throughout the duration of their studies.

## **Master of Fine Arts Degree Requirements**

The MFA program consists of 60-70 credit hours.

The degree includes:

- 30 hours in the major area
- 9 hours in a minor area
- 3 hours of Graduate Studio Seminar
- A minimum of 1 hour of MFA Research Hours
- 11 hours of electives
- 6 hours of Art History

### **Graduate-Level Course work**

Graduate level courses are at the 7000/8000/9000 level. A minimum of 15 of the 30 hours must be selected from courses numbered at 8000 and/or 9000 levels; no more than 40 percent of the 30 hours credit requirement can be satisfied by Research, Readings and Problems courses. No credit is given for courses at the 4000 or below levels.

### **Residency Requirement**

A minimum residency of two years is required for the degree. However, mere completion of the prescribed number of credit hours and the residency requirement is insufficient, rather the degree will be granted upon the student's high level of creative achievement as determined by the student's graduate thesis committee.

### **Regular Student Evaluation**

The full graduate faculty of the art department reviews every MFA candidate once each year to determine the rate of progress. If the candidate fails to receive a passing evaluation during the review, the student is placed on probation for one semester and is required to be reviewed the following semester. If two consecutive unsatisfactory reviews occur, the student is dismissed from the MFA program.

### **Clearance**

During the semester prior to graduation, the graduate thesis committee will approve the student to proceed with the final steps toward graduation, composing the written thesis and mounting the thesis exhibition.

### **Thesis Acceptance**

The graduate thesis committee approves the thesis exhibition and written thesis. The final semester, the MFA candidate installs a thesis exhibition to display visual, artistic and professional achievement. The candidate thereafter presents a final draft of the written thesis that defends the conceptual and philosophical ideas of the final body of artwork. Photographic record of the pieces discussed must be included in the written thesis.

Each degree candidate must pass a two-hour oral final examination conducted by the graduate thesis committee. The presentation must focus on the aspects of the academic study related to the written thesis and visual work. Following final approval of the thesis exhibition and the written thesis, the graduate will officially submit documentation of the theses to the graduate school. The thesis is submitted as a PDF file on a CD-ROM to the Graduate School by the established deadline.

## **Time Limit and Extensions**

The time limit for completion of the MFA degree is 5 years. Time spent in military service is excluded. For an extension for other reasons the student must petition the Graduate School through his/her chair/major adviser. The five-year period will extend from the beginning of the first semester of enrollment in which the student is accepted to the MFA degree program to the date of his/her clearance to graduate.

## **Courses**

See the following areas in the MyZou online system.

See Art-Ceramics (ART CERM)

See Art-Drawing (ART DRAW)

See Art-Fibers (ART FIBR)

See Art-General (ART GNRL)

See Art-Graphic Design (ART GRDN)

See Art-Painting (ART PNT)

See Art-Photography (ART PHOT)

See Art-Printmaking (ART PRNT)

See Art-Sculpture (ART SCUL)

## Biochemistry Graduate Programs

College of Agriculture, Food and Natural Resources; School of Medicine  
117 Schweitzer Hall  
573-882-4846  
<http://www.biochem.missouri.edu/>

Biochemistry at the University of Missouri is a division of the College of Agriculture, Food and Natural Resources and a department of the School of Medicine. As a nationally ranked top 10 biochemistry department among public medical schools, we offer outstanding training that help students achieve their goals. We have 36 core faculty members and approximately 19 additional members, all of whom are available to mentor students in biochemistry. Nearly all facets of contemporary biochemical research are represented in their collective research interests. Our highly interactive program is an integral part of a campus-wide network of research programs including life sciences, genetics, nutrition, plant biochemistry and structural biology.

### Degrees Offered

- MS and PhD in Biochemistry
- Cooperative Degrees: PhD/MD in Biochemistry

### Interdisciplinary Area Programs

- PhD in the nutrition area program
- PhD in the genetics area program
- Minors in Business, College Teaching, and International Relations

The graduate programs of the Department of Biochemistry prepare students for professional careers in academic institutions, industry and government. The Department of Biochemistry is administered by the College of Agriculture, Food and Natural Resources and the School of Medicine. It provides a great range of opportunities for multidisciplinary study in plant, animal and microbial biochemistry, molecular biology, structural biology, and chemical biology.

### Faculty Research

Virtually every important area of biochemistry and molecular biology is represented among the research interests of the faculty. These interests focus on plant biochemistry, hormonal control of plant and animal-cell metabolism, growth-factor structure and function, enzyme reaction mechanisms, biochemistry of development, biochemistry of human disease, lipid and carbohydrate metabolism, molecular biology, analytical biochemistry, proteomics, systems biochemistry, and structural biochemistry.

### Facilities

The department has modern, well-equipped laboratories in the Life Sciences Center, Schweitzer Hall, the new Schweitzer Hall Annex, Schlundt Annex, and Stephens Hall. Additional faculty are housed in the Animal Sciences Research Center, Chemistry Building, Dalton Cardiovascular Research Center, Eckles Hall, Mason Eye Institute, and the Truman Veterans Hospital.

## Plans of Study

All students participate in individually planned research programs and have a supervised teaching experience along with course work. Students are expected to complete a program of courses in biochemistry and selected courses in modern biology and chemistry.

## Careers

Biochemistry at the University of Missouri provides world-class training that can open the door to a wide variety of career opportunities in the life sciences. Our graduates have career opportunities available in academia, industry, agriculture or medicine.

## Biochemistry Faculty

Lesa Beamer  
associate professor, PhD, Johns Hopkins University

Donald H. Burke  
associate professor of molecular microbiology & immunology, PhD, University of California-Berkeley

Shi-jie Chen  
professor of biophysics, PhD, University of California-San Diego

Peter Cornish  
assistant professor, PhD, Texas A&M University

Susan L. Deutscher  
Professor, PhD, St. Louis Medical School

David W. Emerich  
director of undergraduate studies and associate chair, professor, PhD, University of Wisconsin

Laurie Erb  
research associate professor, PhD, University of Missouri

William R. Folk  
Professor, PhD, Stanford University

Shari Freyermuth  
associate teaching professor, assistant dean for academic programs, director of undergraduate advising CAFNR, PhD, Duke University

Kent Gates  
professor of chemistry, PhD, Northwestern University

Thomas Guilfoyle  
professor, PhD, University of Illinois

Gretchen Hagen  
research professor, PhD, University of Georgia.

Mark Hannink  
professor, PhD, University of California-San Diego

Gerald L. Hazelbauer  
chair, professor, PhD, University of Wisconsin-Madison

Antje Heese  
assistant professor, PhD, Michigan State University

Michael Henzl  
professor, PhD, University of Wisconsin

Gavin King  
assistant professor of physics, PhD, Harvard

Abraham Koo  
assistant professor, PhD. Michigan State University

Christopher B. Lee  
assistant teaching professor, PhD. University of Missouri

Dennis B. Lubahn  
professor, PhD, Duke University

Mark E. Martin  
director of medical education, associate professor, PhD, University of Mississippi Medical Center.

Thomas P. Mawhinney  
professor, director of Agricultural Experiment Station Laboratories, PhD, Albany Medical College

Bruce A. McClure  
Professor, PhD, University of Minnesota.

Jan Miernyk  
adjunct professor, PhD, Arizona State University

Brian Mooney  
research assistant professor, PhD, University College, Dublin, Ireland

Ezio A. Moscatelli  
professor emeritus, PhD, University of Illinois

Valeri Mossine  
research assistant professor, PhD, Academy of Science, Ukraine

Tracy Nevitt  
assistant professor, PhD, Instituto de Tecnologia Quimica e Biologica, Portugal

Boyd L. O'Dell  
professor emeritus, PhD, University of Missouri

Scott Peck  
director of graduate admissions, associate professor, PhD, Michigan State University

Brenda Peculis  
director of graduate studies, associate professor, PhD, Johns Hopkins University

Mario A. Pennella  
assistant teaching professor, PhD, Texas A&M University

Virgina E. Peterson  
teaching professor emeriti, PhD, University of Maryland

Michael Petris  
associate professor, PhD, University of Melbourne, Australia.

Charlotte Phillips  
associate professor, PhD, North Carolina State University

Joseph C. Polacco  
professor emeritus, PhD, Duke University

Thomas P. Quinn  
professor, PhD, St. Louis University

Douglas D. Randall  
professor emeritus, PhD, Michigan State University

Linda Randall  
professor, PhD, University of Wisconsin

R. Michael Roberts  
Curators' professor of animal science and biochemistry, PhD, University of Oxford.

Stefan Sarafianos  
assistant professor of molecular microbiology & immunology, PhD, Georgetown University

Frank J. Schmidt  
professor, PhD, University of Wisconsin

Krishna K. Sharma  
professor of ophthalmology, PhD, University of Mysore

Marcelle Siegel  
assistant professor, PhD, University of California-Berkeley

Agnes Simonyi

research associate professor, PhD, University of Lorand Eotvos, Hungary

Gary Stacey  
MSMC endowed professor of soybean biotechnology, PhD, University of Texas

Grace Y. Sun  
professor, PhD, Oregon State University

John J. Tanner  
professor of chemistry, PhD, Brown University

Jay Thelen  
associate professor, PhD, University of Missouri

Peter A. Tipton  
professor, PhD, University of Wisconsin

Richard Tsika  
professor, PhD, University of California-Irvine

Steve Van Doren  
professor, PhD, University of Illinois

Wynn A. Volkert  
Curator's professor emeritus of radiology, biochemistry and chemistry, director of radiopharmaceutical science institute, PhD, University of Missouri

Judy D. Wall  
professor, PhD, Duke University

Gary A. Weisman  
professor, PhD, University of Nebraska

Shuqun Zhang  
professor, PhD, University of Texas-Austin

Xiaoqin Zou  
assistant professor, PhD, University of California-San Diego

## **Application and Admission Information**

### **Admission Criteria**

Fall deadline: January 5  
Minimum GPA: 3.0  
Undergraduate research required

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
95	620

Minimum GRE scores: Average Scores > 60%

## Doctoral Degree in Biochemistry

### Admission Contact Information

[gradprogram@missouri.edu](mailto:gradprogram@missouri.edu)

117 Schweitzer Hall  
Columbia, MO 65211  
573-882-4846

### PhD Prerequisites

**The following entrance requirements must be met:**

- Mathematics through one year of calculus
- Biological sciences (at least one course)
- 1 year of physics
- 1 year of organic chemistry (with a laboratory)
- Biochemistry (lecture and laboratory)

### Strongly Recommended Courses

- Genetics (at least one course)
- Quantitative analysis
- Physical chemistry course with a calculus prerequisite

These prerequisites should have been met during the undergraduate curriculum. Recommended courses may be taken during the first year of the graduate program. Satisfactory completion of a qualifying exam is expected by the end of the first year and of a comprehensive examination by the end of the second academic year in graduate study.

### Required Application Materials

*All materials must be sent to the Graduate School*

- **University of Missouri Graduate School Application** [Apply Yourself on line application](#)
- **Official transcripts** from all undergraduate and graduate institutions applicant has attended. Submit online to graduate school.
- **Three letters of reference** using our [reference PDF](#). Submit online to graduate school.
- **500-word personal statement** about your goals and experience. Submit online to graduate school.
- **Official GRE scores**. Submit using institution code 6875 and department code 0202.
- **International applicants**: If your first language is not English, please submit your official TOEFL scores using institution code 6875 and department code 34.

## **Financial Aid from the Program**

All Biochemistry PhD students are guaranteed a stipend while they are making acceptable research progress. Additionally, tuition is covered for all qualifying full-time graduate students in Biochemistry. Graduate students are responsible for paying all Incidental Student fees (computer, activity, recreation, & student health). Our graduate student stipend is highly competitive by national standards, considering the low cost of living in Columbia.

## **Timeline for the PhD program**

The average graduation time in the PhD program is approximately six years. Along with courses and seminars, students embark on lab rotations, dissertation research, qualifying and comprehensive exams, and committee meetings, cumulating in the dissertation defense.

Coursework: Years 1-2

Lab rotations: Year 1

Qualifying exam: Year 1

Dissertation research and committee meetings: Years 1-5

Seminars: Years 1-5

Comprehensive exam: Year 2

Dissertation defense: Year 5

Prior to successfully completing the comprehensive examination, a student must complete nine credit hours per semester, or four per summer, to remain a full-time graduate student. Following successful completion of the comprehensive exam, the student should register for a minimum of two hours of dissertation research per semester (one in summer) to maintain continuous enrollment. More than the minimum may be needed to obtain the 72 credit hours required by the Graduate School for completion of the PhD.

[More information on courses.](#)

## **Research rotations**

Starting in the fall semester of the first year, each student completes three laboratory rotations with the aim of identifying a lab in which to conduct PhD thesis research. By the end of the second semester, most students have chosen their labs. Each rotation should be conducted for a period of at least eight weeks. Two rotations are performed in the first semester, with the second rotation ending Dec. 31. The third rotation begins Jan. 1 or soon after. One-half of the student's time and effort should be directed toward the rotation project and the other half toward course work. The rotation laboratory should serve as an academic home, and the student should participate in all usual laboratory activities, including weekly group meetings.

## **Dissertation adviser and doctoral program committee**

By the end of the third rotation each student should identify a dissertation adviser, choosing from doctoral faculty with financial support for students. An important early task for the student is to assemble a doctoral program committee (DPC), in consultation with his/her adviser. The DPC membership is selected by the student's adviser in consultation with the student and appointed by the dean of the Graduate School by the summer after the second semester. The DPC is composed of at least four members of the MU graduate faculty: at least three from biochemistry and an outside member from a different MU program. At least two must be MU doctoral faculty. Additional faculty may serve on doctoral committees as a fifth or sixth members.

### **Program qualifier**

Students who have earned grades of B or better in the required courses of Graduate Biochemistry I and II and are in good standing academically (cumulative GPA 3.0) should take the qualifier exam in May after their second semester. Failure to pass this exam by August before their second year will result in dismissal from the PhD program. Students who have received a C in a core course must retake the course and receive a grade of B or better before taking the qualifying exam. They must then pass the qualifying exam to remain in the PhD program.

### **Teaching experience**

An important part of graduate education is learning to communicate effectively as a teacher. Two semesters enrolled in Biochem 9001 helps prepare the students for their teaching assistant experience which consists of one semester in an undergraduate laboratory or lecture venue. This is a required component of both the MS and PhD degrees and typically is performed in the second year of graduate study. This teaching experience usually involves assisting a faculty member in one of several courses and interacting with the students fairly extensively. The Biochemistry Department also offers a Zahler Fellowship and a Minor in College Teaching for graduate students interested in teaching as a career. Missouri requires that students whose first language is not English demonstrate adequate oral proficiency before assisting in teaching.

### **Graduate coursework**

Thesis/dissertation research (Biochemistry 9090)

### **Core course work**

All graduate students are required to earn a grade of B or better in both:

Graduate Biochemistry I: Macromolecular Structure and Function (8240)  
Graduate Biochemistry II: Systems Biochemistry (9001)

### **Elective course work**

Each PhD student is required to a total of 7 additional credit hours at the 8000- or 9000-level approved by the student's doctoral program committee. Recommended and pre-approved courses include (but are not limited to):

Molecular Biology I (9430)  
Molecular Biology II (9432)

### **Elective course work (continued)**

Physical Biochemistry (8430)  
Enzymology/Metabolism (8432)  
Ethics seminar  
Completion of a one-hour seminar in ethical conduct of research in a cross-departmental format (Biochem 8060) is required of all biochemistry graduate students.  
Biochemistry 9087

**Note:** Students must earn a grade of B or better and maintain an overall GPA of 3.0 or better.

Students should enroll in the first of the one-hour seminar classes Biochemistry 9087 during their first semester. Biochemistry 9087 in the fall semester is designed to teach the fundamental techniques of oral presentation of scientific information, slide preparation, computer graphics, overhead preparation, etc., as well as research-compliance training. Students should complete three additional semesters of Biochemistry 9087 in spring semesters, for a total of four credit hours. A student's first spring 9087 seminar is devoted to a presentation of the proposed dissertation research. The second should provide an update of research progress or a review of major journal papers in the student's research area. The third should be a practice for the dissertation defense. The student's thesis committee is expected to attend these presentations at the invitation of the student. A meeting with the doctoral program committee (DPC) can be arranged after the seminar presentation which may serve as the required annual meeting.

### **Department seminars**

Students are expected to attend all [department seminars](#).

### **Credit hours**

The [MU Graduate School](#) requires a minimum of 15 credit hours of course work at the 8000 level or higher (exclusive of research, problems and independent-study experiences). The core courses (8240 and 9001) fulfill 8 hours of this requirement, so additional 8000 or 9000 level courses of the student's choosing may be used to reach the 15 credits required. The student and his/her adviser, in consultation with the student's doctoral program committee (DPC), may decide upon the focus and content of these additional courses. A minimum of 72 credit hours beyond the baccalaureate degree is required for the PhD. Transfer credits for graduate courses taken at MU or elsewhere may be applied; see Grad School web site for current guidelines: (<http://gradschool.missouri.edu/policies/doctoral/requirements/plan-study-requirements.php>)

### **Residency**

A least two nine-hour or three six-hour semesters must be completed in an 18-month period at MU to satisfy the residency requirement. All must be MU courses approved both by the Graduate School for graduate credit and by the student's DPC.

### **Minimum enrollment and continuous registration**

Graduate students must maintain full-time status until they have passed both portions of the comprehensive exam. Full-time status is achieved by enrolling for nine hours in fall and spring semesters and four hours during summer term. Students typically enroll in Biochemistry 9090 to complete the required hours. Completion of the comprehensive exam admits a student to candidacy for the PhD. After passing the comprehensive exam, each student must maintain continuous enrollment by registering in Biochemistry 9090 for at least two hours in fall or spring semester and one hour in the summer. However, in order to meet the requirement for 72 hours of post-baccalaureate credit required by the Graduate School, students may continue to enroll for up to nine hours of Biochemistry 9090 per term until accumulating close to 72 hours. Students may enroll in other courses in addition to 9090 and reduce the total 9090 hours taken. Failure to enroll in any semester results in cancellation of candidacy.

### **Comprehensive examination (oral and written components)**

Students who have passed the qualifying exam should complete the written comprehensive exam within the next one to two semesters (by end of summer of their second year). This examination involves writing a proposal for doctoral research in the format of a federal postdoctoral fellowship application. The student must then orally

defend the proposal before his/her doctoral program committee plus a member of the graduate education committee. This is designed to assess the student's ability to think critically about science and to communicate effectively both in writing and in an oral presentation.

### **Regular reviews to acknowledge progress**

The first doctoral program committee (DPC) meeting between committee members and the student is designed to provide an opportunity for the DPC to approve the planned program of study. This meeting should occur no later than the summer after the student's second semester of graduate study. The student should prepare a brief written document, to be distributed to the committee members at least one week in advance, outlining the student's program of study. This document consists of two parts: a list of the formal coursework and a two- to three-page description of the proposed research project.

### **MD/PhD Dual Degree Programs**

Students already accepted into the School of Medicine at MU may apply to the Department for acceptance into the MD/PhD program. Students matriculating in the MD/PhD degree program must complete degree requirements of both the School of Medicine and the Graduate School.

### **More Information**

For information and for application forms, email [gradprogram@missouri.edu](mailto:gradprogram@missouri.edu) or write the Director of Graduate Admissions in Biochemistry, 117 Schweitzer Hall, Columbia, MO 65211, or visit the website <http://www.biochem.missouri.edu/>.

### **Courses**

See Biochemistry (BIOCHM) in the myZou online system.

### **Master's Degree in Biochemistry**

#### **Admission Contact Information :**

[gradprogram@missouri.edu](mailto:gradprogram@missouri.edu)

117 Schweitzer Hall  
Columbia, MO 65211  
573-882-4846

#### **Required Application Materials**

- ***All MS application materials and pre-requisites are identical to those of the PhD program.***

#### **Financial Aid from the Program**

All applicants are encouraged to apply to the PhD program. The Department does not financially support students applying for only a MS rather than a PhD degree. However, applicants seeking a terminal MS degree may identify a potential host lab to enquire of direct funding of an applicant. Biochemistry Masters students may receive a stipend while they are making acceptable research progress towards completion of a degree. Additionally, tuition is covered for qualifying full-time graduate students in Biochemistry. Graduate students are responsible for paying all Incidental Student fees (computer, activity, recreation, & student health).

## **Master of Science Degree**

The Master of Science degree is awarded in part for the completion of a thesis.

### **MS Graduation Requirements**

The minimum departmental course requirements for the Master of Science degree are:

- Introductory Graduate Biochemistry I and II (BIOCHM 8240 and 9001)
- 7 additional hours of biochemistry and approved science course at 8000 level or above
- 2 hours of biochemistry seminar (9087)
- 4 hours of biochemistry research (9090)
- 1 graduate-level course in an area outside the department
- A biological research ethics course
- Teaching experience for one semester (BIOCHM 9001-4)
- A total of 30 hours of 7000-9000 level course work
- A thesis based on original research
- An oral examination
- A public seminar based on thesis material and teaching experience

Transfer credits for graduate courses taken at MU or elsewhere may be applied; see Grad School web site for current guidelines: (<http://gradschool.missouri.edu/policies/masters/requirements/plan-study-requirements.php>)

### **Rate of Progress**

A satisfactory rate of progress must be maintained by master's and doctoral students. In addition to meeting the requirements for timely completion of the qualifying and comprehensive exam, each student must demonstrate, to the satisfaction of his/her adviser and doctoral program committee, that he/she is progressing in his/her thesis research. A student is expected to complete an MS degree within a 24 to 30-month period.

### **More Information**

For information and for application forms, email [gradprogram@missouri.edu](mailto:gradprogram@missouri.edu) or write the Director of Graduate Admissions in Biochemistry, 117 Schweitzer Hall, Columbia, MO 65211, or visit the website <http://www.biochem.missouri.edu/>.

## Biological Engineering Graduate Programs

### College of Agriculture, Food and Natural Resources

256 William Stringer Wing  
Columbia, MO 65211-5160  
573-882-4113  
<http://fsb.missouri.edu>

### College of Engineering

256 William Stringer Wing  
Columbia, MO 65211-5160  
573-882-4113  
<http://fsb.missouri.edu>

## About Biological Engineering

Recognizing the immense promise of bioengineering and the unique position of MU for a strong bioengineering program, the College of Agriculture, Food and Natural Resources (CAFNR) and the College of Engineering (CoE) joined forces to form the Department of Biological Engineering (BE). BE unites existing faculty and infrastructure from both colleges. CoE contributes biomedical engineering capabilities while CAFNR brings strengths in bioprocess and bioenvironmental engineering. Biological engineering confers both masters and doctoral degrees to students who satisfy the general requirements of the Graduate School and the specific requirements for the masters degree and the doctoral degree of the Department of Biological Engineering.

## Degrees offered

- Master of Science (MS)
- Master of Engineering (ME)
- Doctor of Philosophy (PhD)

## Thesis Research and Funding

Research assistantships are available to qualified graduate students. Thesis research may emphasize bioprocessing, biomedical engineering, environmental engineering or precision agriculture. Laboratories are well equipped for research in biomaterials, biomedical optics, bioprocessing, biosensors, computer vision, electrophysiology, food extrusion, properties of biological and food materials, process control, GIS, precision agriculture, water quality, wetlands, chemical application technology, soil physics, hydrology and renewable energy.

## Biological Engineering Faculty

Jinglu Tan

director, James C. Dowell professor, PhD, University of Minnesota. Biological system modeling and identification, bioluminescence-based sensing, and bioimage processing.

Steven C. Borgelt

director of undergraduate studies, associate professor, PhD, Texas A&M University. Precision agriculture and renewable energy.

Fu-hung Hsieh

director of graduate studies, professor, PhD, University of Minnesota. Bioprocessing, viscoelastic properties of biomaterials, food engineering, extrusion of foods and feeds, biomechanics.

David Brune

professor, PhD, University of Missouri. Bioprocessing, bioengineering, algal culture, aquaculture and agricultural water quality.

Willard Downs

professor, PhD, Oklahoma State University. Material handling, environmental processes, extension, control of particulate air quality in agriculture.

Kevin Gillis

professor, James C. Dowell professor (Dalton Cardiovascular Research Center), DSc, Washington University, St. Louis. Biomedical engineering, electrophysiology, exocytosis and bio-micro electro-mechanical systems (BioMEMS).

Sheila A. Grant

professor, PhD, Iowa State University. Biomedical engineering, external and implantable biosensors, nanopatterning techniques, biomaterial interfaces.

Leon G. Schumacher

chair (Ag Systems Management), professor, PhD, Iowa State University. Energy conservation including biodiesel, biomass and ethanol. Curriculum-related issues associated with Agricultural Systems Management.

Michael Davis

adjunct professor, Margaret Proctor Mulligan professor (medical pharmacology and physiology), PhD, University of Nebraska Medical Center, Omaha. Vascular mechano-transduction, electrophysiology, blood flow autoregulation, lymphatic vessel physiology.

Gabor Forgacs

adjunct professor, George H. Vineyard professor, PhD, Eotvos Lorand University, Budapest, Hungary and Landau Institute for Theoretical Physics, Moscow, Russia. Physical mechanisms of early embryonic development, intracellular mechanotransduction, biomechanics across scales, viscoelastic properties of tissues, tissue engineering: building living structures by organ printing.

Shubhra Gangopadhyay

adjunct professor, C. W. LaPierre professor (electrical and computer engineering), PhD, Indian Institute of Technology, Kharagpur. Nano/Micro fabrication, optical biosensors, nanophotonics and biophotonics.

Michael Hill

adjunct professor (medical pharmacology and physiology), associate director, Dalton Cardiovascular Research Center, PhD, University of Melbourne. Microcirculation, smooth muscle mechanotransduction and signaling events, Structure-function relationships in the arteriolar wall, vascular complications in experimental models of diabetes.

Tzyh-Chang Hwang

adjunct professor (physiology), MD, National Yang-Ming Medical College, Taiwan; PhD, Johns Hopkins University School of Medicine. Ion channel biophysics, electrophysiology, membrane protein structure, transport mechanism, cystic fibrosis.

**Andrew McClellan**

adjunct professor (biological science), PhD, Case Western Reserve University. Cellular studies of functional neural regeneration following spinal cord injury, operation of neural networks in the brain and spinal cord that control locomotor function. Computer modeling of neural networks.

**Gerald Meininger**

adjunct professor, Margaret Proctor Mulligan professor in medical research (director, Dalton Cardiovascular Research Center, medical pharmacology and physiology), PhD, University of Missouri. Cell adhesion, extracellular matrix and cell signaling in the vascular wall. Mechanotransduction and mechanodetection in vascular cells. Regulation of vascular and cardiac responses to tissue injury by extracellular matrix derived signals. Mechanisms of vascular remodeling. Mechanisms responsible for the myogenic properties of vascular smooth muscle. Applications of Atomic Force Microscopy, fluorescence microscopy and 3D-image analysis for studies of microvascular cell biology and the cyto-architecture and function of the microvessel wall. Mechanisms of blood flow autoregulation.

**Satish Nair**

adjunct professor, Robert Buescher professor (Electrical & Computer Engineering), PhD, Ohio State University. Dynamical foundations of neuroscience, computational neuroscience and systems biology, uncertainty modeling using adaptive and intelligent techniques.

**Kristina Narfstrom**

adjunct professor, Endowed Professor of Veterinary Ophthalmology, DVM, PhD, University of Linkoping Medical School. Retinal cell biology, electrophysiological techniques, intraocular microsurgery.

**E. John Sadler**

adjunct professor, PhD, Texas A&M University. Modeling watershed-scale hydrology and water, quality, developing and improving irrigation water management, evaluating cropping systems for economic and environmental sustainability.

**Steven Segal**

adjunct professor, Margaret Proctor Mulligan professor in medical research, PhD, University of Michigan, Ann Arbor. Blood flow control in the microcirculation, cell-to-cell signaling in blood vessels, sympathetic neural control of the circulation, exercise and neurovascular coupling in skeletal muscle, effects of aging on the cardiovascular system.

**Kenneth A. Sudduth**

adjunct professor, PhD, University of Illinois. Sensors, controls, and systems for crop production and precision agriculture.

**David E. Baker**

associate professor, certified safety professional, (assistant dean and program director, agriculture and natural resources extension), MS, Illinois State University. Occupational safety and health.

**Li-Qun (Andrew) Gu**

associate professor, PhD, Nankai University. Biophotonics and biosensing, membrane transport and signaling.

**William A. Jacoby**

associate professor, joint appointment in Chemical Engineering, PhD, University of Colorado-Boulder. Biomass and carbonaceous residues into energy, fuels and chemicals using, supercritical fluids.

James C-M Lee

associate professor, PhD, University of Pennsylvania. Molecular and cellular biomechanics, membrane biophysics, cell signaling pathways, blood brain barrier, oxidative stress and neurodegenerative diseases.

Allen Thompson

associate professor, PhD, PE, University of Nebraska. Irrigation management, hydrology of submerged flow constructed wetlands, waste droplet mechanics and soil erosion mechanics.

John A. Viator

associate professor, PhD, Oregon Health & Science University. Biomedical engineering, biomedical optics, photoacoustic imaging, laser applications in dermatology, burn injury, surgery and oncology.

Gang Yao

associate professor, PhD, Texas A&M University. Biomedical optics, photon migration in turbid media and subsurface imaging. Tissue optics and non-invasive tissue characterization. Optical imaging in vision studies, dynamic pupil light reflex and cortical imaging. Biomedical instrumentation and signal/image processing.

Raghuraman Kannan

adjunct associate professor, PhD, Indian Institute of Science. Nanomedicine, tumor imaging, tumor therapy, diagnostic sensors, biocompatible nanomaterials.

Jae Wan Kwon

adjunct associate professor, PhD, University of Southern California. BioMEMS, various biomedical sensors/actuators, micro/nanofluidics, organ tissue printing, cancer detection.

Hao Li

adjunct associate professor, PhD, Stevens Institute of Technology in New Jersey. Nano materials, biomaterials, thin films and coatings.

Douglas E Smith

adjunct associate professor, C.W. LaPierre associate professor (Mechanical & Aerospace Engineering), PhD, PE. University of Illinois-Urbana-Champaign. Finite element analysis, composite materials processing, structural and multidisciplinary design optimization, robust design, computational biomechanics.

Shinghua Ding

assistant professor, PhD, State University of New York at Buffalo. Glial cell function and neuron-glia interactions in central nervous system, stem cell differentiation and transplantation, ion channel function and modulation.

Heather K Hunt

assistant professor, PhD, California Institute of Technology. Optical biosensors, nanoporous sensor materials, optoelectronic materials, nanoporous materials and devices; hierarchical materials; low-k materials, water quality analysis, cancer detection.

A. Bulent Koc

assistant professor, PhD, Penn State University. Nondestructive evaluation of agricultural and food products, biomass utilization and biofuel production systems, sensors and control.

Shramik Sengupta

assistant professor, PhD, University of Minnesota-Minneapolis. Nano and microfluidic systems for bio-diagnostics, multi-frequency impedance measurement for the rapid detection of Johne's disease, multi-frequency impedance

measurement for the rapid detection of antibiotic susceptibility in clinical samples (e.g. blood cultures), nanoparticle aided separation and detection of pathogens.

**Matthew Bernards**

adjunct assistant professor, PhD, University of Washington. Biomaterials, surface science, tissue engineering.

**Peter V Cornish**

adjunct assistant professor, joint appointment with Biochemistry, PhD, Texas A&M University. Single molecule FRET, optical tweezers, NMR spectroscopy, RNA biochemistry, ribosome function and dynamics.

**Luis Polo-Parada**

adjunct assistant professor (medical pharmacology and physiology), PhD, Case Western Reserve University. Ion channel biophysics, electrophysiology, heart development, biosensors, nano medicine.

**Teng Teeh Lim**

extension assistant professor, PhD, PE, Purdue University. Web-based, interactive odor setback guideline for livestock facilities. Assessment of baseline dust, odor and gas emissions of livestock facilities. Environmental and ventilation system monitoring, quantification of fan airflow and degradation. Effectiveness and practicality of mitigation methodologies for livestock and poultry industries. Member of interdisciplinary extension teams for swine and dairy industries.

**Joseph Zulovich**

extension assistant professor, PhD, PE, University of Nebraska-Lincoln. Structures, animal housing, commercial agriculture.

## **Master of Science in Biological Engineering**

## **Master of Engineering in Biological Engineering**

### **Admission Contact Information**

JoAnn Lewis (lewisj@missouri.edu)  
256 William Stringer Wing  
Columbia, MO 65211-5160  
573-882-4113

### **Admission Criteria**

- Fall deadline: N/A
- Minimum GPA: 3.0 in the last 60 hours
- BS in engineering from an accredited university or equivalent experience
- Minimum **TOEFL** scores:

<b>Internet-based test (iBT)</b>	<b>Paper-based test (PBT)</b>	<b>IELTS</b>
80	550	6.0

- Minimum **GRE** scores:

<i>When did you take the GRE?</i>	<b>Verbal + Quantitative</b>	<b>Analytical</b>
Prior to August 1, 2011	1100	4.0
On or After August 1, 2011	301	4.0

## Required Application Materials

Prospective students first contact [JoAnn Lewis](#) in the BE department to receive instructions on the documents needed for a complete application packet.

### [To the Graduate School:](#)

- All required Graduate School documents

*Applicants must also arrange for official transcripts, TOEFL score, GRE score, to be sent directly to:*

Graduate Admissions  
University of Missouri  
210 Jesse Hall  
Columbia, MO 65211-1300

### [To the Master's BE Program:](#)

Contact [JoAnn Lewis](#)

## Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program Web site or ask the program contact for details.

## Graduation Requirements: [Master of Science in Biological Engineering](#)

Students without a BS in engineering will be required to complete additional courses in mathematics, basic sciences and engineering science. Students with engineering degrees other than biological engineering should meet certain proficiency requirements.

MU requires a minimum of 30 semester hours beyond the baccalaureate degree for the M.S. degree. If approved by the student's M.S. Program Committee, this may include up to six hours of graduate credit transferred from another university or from another campus of the MU system. MU also requires 15 hours of 8000 level courses excluding problems, readings, and independent study.

As a **minimum**, the M.S. Program of Study should include BE 8402 – Research Methods (2 credits); BE 8087 – Seminar (1 credit, students are also encouraged to make at least one presentation at the regional or national meetings); Statistics (3 credits); BE 8990 Research (6 credits); Two BE 8000 level courses, **not** to include problems (BE 8085) (at least 6 credits). Additional hours may come from Biological Engineering courses numbered 7000 or above or courses from other MU departments numbered 7000 or above. Research credits (BE 8990) may not exceed 40% of the total hours *required* in the M.S. Program of Study. Classes chosen to fill the plan of study may include those needed to fulfill proficiency areas (step 3). Other courses should be chosen to strengthen the student's ability to do research in their specific area.

## Graduation Requirements for [Master of Engineering in Biological Engineering](#)

An ME student must complete a minimum of 36 credit hours of graduate course work. At least 15 hours must be in 8000-level courses and a minimum of 21 hours must be from the College of Engineering. The student must maintain at least a 3.0 cumulative GPA and complete the program in eight years. A project may be required by the adviser.

For additional information about either the MS or ME in Biological Engineering, click the link below:

[Master of Science in Biological Engineering](#)

[Master of Engineering in Biological Engineering](#)

## Doctoral Degree in Biological Engineering

### Admission Contact Information

JoAnn Lewis (lewisj@missouri.edu)

256 William Stringer Wing; Columbia, MO 65211-5160

573-882-4113

### Admission Criteria for Doctoral Degree in Biological Engineering

- Fall deadline: N/A
- Minimum GPA: 3.0
- BS and MS in engineering from an accredited university or equivalent experience. In rare instances, an exceptional student will be allowed to study for the PhD without first completing an MS degree.

- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)	IELTS
80	550	6.0

- Minimum **GRE** scores:

<i>When did you take the GRE?</i>	<b>Verbal + Quantitative</b>	<b>Analytical</b>
Prior to August 1, 2011	1100	4.0
On or After August 1, 2011	301	4.0

### Required BE Doctoral Degree Application Materials

#### [To the Graduate School:](#)

- All required Graduate School documents

*Applicants must also arrange for official transcripts, TOEFL score, GRE score, to be sent directly to:*

Graduate Admissions  
University of Missouri  
210 Jesse Hall  
Columbia, MO 65211-1300

#### [To the Doctoral BE Program:](#)

Contact [JoAnn Lewis](#)

## Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program Web site or ask the program contact for details.

## [Degree Requirements: Doctoral Degree in Biological Engineering](#)

Within the first year in the program, each PhD student must pass a qualifying examination before continuing enrollment. The exam is designed to test the student's ability to undertake advanced learning and carry out independent research. A doctoral candidate must complete a minimum of 72 credit hours of course work beyond the BS degree with a minimum of fifteen hours (exclusive of research, problems or independent study courses) at the 8000 (graduate) level, including at least three BE courses. In addition, there will be a minimum of one hour of Seminar (BE 8087) and research (BE 9990) may not exceed 28 hours of the total 72 hours *required* in the PhD Program of Study. The courses and research plan must be approved by the doctoral program committee. The student is required to pass a comprehensive examination, which includes both written and oral components. The student must demonstrate his or her ability for in-depth research by presenting and successfully defending a dissertation embodying the results of original research. A foreign language is not required.

## Courses

See Biological Engineering (BIOL EN) in the myZou online system.

**Note:** The Agricultural Systems Management courses (AG S M) are restricted and not open to all BE students. Students completing the former Agricultural Systems Management degree should contact the department for information about these courses.

## Biological Sciences Graduate Programs

College of Arts and Science  
218 Tucker Hall  
1-800-553-5698  
573-882-1847  
<http://biology.missouri.edu>

### About Biological Sciences

The Division of Biological Sciences offers a unique integration of world-class research, award-winning graduate and undergraduate training, and outstanding community outreach. Our research mission includes the acquisition of new knowledge through basic research, and coordinated translational research to improve human health, our food supply, and our environment. Graduate training programs emphasize the excitement of discovery and the development of individual creativity and critical reasoning skills, with graduate mentors who are experts at the frontiers of their field. Because science exposure in the pre-college years is critical to the development of both scientists and informed citizens, we also offer special outreach programs for secondary school science teachers, students and citizens in Missouri.

The division is housed in Tucker Hall, Lefevre Hall and the Life Sciences Center, all of which are next to buildings that house the Chemistry and Physics Departments and related departments in the College of Agriculture, Food and Natural Resources and the School of Natural Resources. The School of Medicine and the College of Veterinary Medicine are within a short walking distance. Campus research units with which the division has cooperative research programs include the Dalton Cardiovascular Research Center, the Research Reactor Center, the Laboratory for Biological Control of Insects, the Cancer Research Center, the Eye Research Center and the Agricultural Experiment Station Laboratories.

Besides the specialized equipment in each faculty research laboratory, departmental and campus equipment and facilities available to graduate students include:

- Molecular and cellular biology core facilities, including DNA (with Next Generation Sequencing), Electron Microscopy, Cell and Immunobiology, Informatics, Nuclear Magnetic Resonance, Molecular Cytology, Proteomics, Structural Biology, and Transgenic Animal;
- a 250,000-specimen herbarium;
- a new 15,000-square-foot greenhouse complex;
- animal-care facilities suitable for mice, bats, rats, rabbits and amphibians;
- a 14-acre botany preserve on the campus and a 146-acre prairie research station;
- 24 walk-in plant growth chambers with regulated light, temperature and humidity controls;
- cell and tissue culture facilities;
- growth chambers;
- scanning spectrophotometers and kinetic fluorimeters;
- ultracentrifuges and scintillation counters;
- HPLC facilities;
- sound isolation acoustic chambers;
- neurophysiological recorders, oscilloscopes and amplifiers;
- and microneurosurgery facilities and equipment.

Divisional faculty have ready access to the campus computing network and microcomputers in their laboratories.

## **Biological Sciences Faculty**

John Walker  
director, professor; PhD, University of Georgia.

Gerald Summers  
associate director, associate professor; PhD, University of Illinois.

Stephen Alexander  
co-director of graduate studies, professor; PhD, Brandeis University

Raymond Semlitsch  
co-director of graduate studies; Curator's Professor, PhD, University of Georgia.

James Birchler  
Curator's Professor; PhD, Indiana University.

H. Carl Gerhardt  
Curator's Professor; PhD, University of Texas-Austin.

George Smith  
Curator's Professor; PhD, Harvard University.

Fred vom Saal  
Curator's Professor; PhD, Rutgers University.

Anand Chandrasekhar  
professor; PhD, University of Iowa.

Rex Cocroft  
professor; PhD, Cornell University.

John Faaborg  
professor; PhD, Princeton University.

Candace Galen  
professor; PhD, University of Texas-Austin.

Emmanuel Liscum  
professor and Associate Dean Graduate School; PhD, The Ohio State University.

Philip Jen  
professor; PhD, Washington University-St. Louis.

Mark Kirk  
professor; PhD, Rice University.

Andrew McClellan  
professor; PhD, Case Western Reserve University.

Kathleen Newton  
professor; PhD, Indiana University.

Thomas E. Phillips  
professor; PhD, Northwestern University.

Johannes Schul  
professor; PhD, Philipps University, Marburg, Germany.

David Setzer  
professor, PhD, Stanford University.

David Braun  
associate professor; PhD, University of Missouri.

Dawn Cornelison  
associate professor; PhD, California Institute of Technology.

John D. David  
associate professor; PhD, Vanderbilt University.

Lori Eggert  
associate professor; PhD, University of California-San Diego.

Michael Garcia  
associate professor; PhD, Mayo Graduate School.

Miriam Golomb  
associate professor; PhD, University of California-Berkeley.

Timothy Holtsford  
associate professor; PhD, University of California-Riverside.

Joel Maruniak  
associate professor; PhD, University of Texas-Austin.

Paula McSteen  
associate professor; PhD, University of East Anglia.

J. Christopher Pires  
associate professor; PhD, University of Wisconsin-Madison.

David Schulz  
associate professor; PhD, University of Illinois at Urbana-Champaign.

Patrick Shiu  
associate professor; PhD, University of British Columbia, Canada.

Change Tan  
 associate professor; PhD, University of Pennsylvania at Philadelphia.

David Worcester  
 associate professor; PhD, Harvard University.

Troy Zars  
 associate professor; PhD, University of Notre Dame.

Pamela Brown  
 assistant professor, Ph.D. University of Georgia

Ricardo Holdo  
 assistant professor; PhD, Princeton University.

Lorin Milescu  
 assistant professor; PhD, State University of New York-Buffalo.

Mirela Milescu  
 assistant professor; PhD, State University of New York-Buffalo.

Samuel Waters  
 assistant professor; PhD, University of Virginia.

## Admission Criteria

- Fall deadline: December 15
- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
100	600

- Minimum **GRE** scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative
Prior to August 1, 2011	1200
On or After August 1, 2011	300

The Division of Biological Sciences actively recruits outstanding graduate students from both national and international pools. Selected candidates are interviewed. The best are admitted to the division for graduate study. Even more important than the quantitative Grade Point Averages and GRE scores, we are interested in evidence of critical qualitative characteristics including: undergraduate research experiences and presentation of research results; ability to face and overcome obstacles; exceptional motivation, work ethic, intellectual vitality, initiative, creativity, critical thinking ability and leadership ability.

## **Required Application Materials**

### [To the Graduate School:](#)

All required Graduate School documents

### [To the Biological Sciences Program:](#)

- Division of Biological Sciences application form
- GRE test scores
- Official Transcripts
- 3 Reference letters
- Personal Statement
- Statement of previous research or scholarly experience
- Résumé

## **Areas of Study**

The division offers primarily PhD degrees. General areas of research emphasis within the division include evolutionary biology, ecology and behavior; genetic, cellular, molecular and developmental biology; neurobiology and behavior; and plant sciences. Within these general areas, students may devise more specific graduate programs in, for example, plant genetics, invertebrate chemical communication or neurophysiology.

## **Interdisciplinary Research**

Several students are currently involved in interdepartmental programs in neurosciences, genetics, plant biochemistry and physiology, cellular and molecular biology, the Conservation Biology Program, microbiology and physiology. In addition, the presence on this campus of a School of Medicine, College of Agriculture, Food and Natural Resources and College of Veterinary Medicine provides opportunities for direct interaction with a variety of established research scientists. Faculty in the division also participates in the Genetics Area Program, the Pathobiology Area Program, the Molecular Biology Program, the Interdisciplinary Program in Plant Biochemistry and Physiology, the Interdisciplinary Neuroscience Program and the Conservation Biology Program.

## **Eligibility**

All entering graduate students should have a broad background in biology and should have completed courses in mathematics through integral calculus, chemistry through organic chemistry and a year of physics.

Exceptions may be made for individual students. Outstanding students with undergraduate degrees in areas other than biology (such as chemistry, physics, engineering, mathematics or psychology) are encouraged to apply with the understanding that subject matter in biology will be addressed in the first year of graduate study.

## **Funding**

Financial support is available through research training grants, fellowships, scholarships, graduate research assistantships, and teaching assistantships.

## **Courses**

See Biological Sciences (BIO SC) in the myZou online system.

## Biomedical Sciences Area Program (MS, PhD and Dual Degrees)

Brenda Klemme [klemmeb@missouri.edu](mailto:klemmeb@missouri.edu)

W111 Veterinary Medicine Building

1600 Rollins Road

Columbia, MO 65211

573-882-7305

<http://www.dbms.missouri.edu/>

### About Biomedical Sciences Area Graduate Programs

Please refer to individual sections below on the master of science, doctoral degree, or dual degrees.

### Degrees Offered

- MS in Basic Biomedical Sciences: application requirements and program details
- PhD Area Program: application requirements and program details
- Dual PhD/DVM or MS/DVM Degrees

### Areas of Study

Major biomedical disciplines include anatomy (gross or microscopic); physiology/pharmacology (molecular, cellular and integrative); biochemistry/molecular biology; endocrinology; and toxicology. Specific areas of interest are exercise biology including cardiac, vascular and muscle biology; cardiovascular biology including neuroendocrine regulation; membrane transport biology including cystic fibrosis and cardiac disease; and reproductive biology including environmental estrogen toxicities and developmental processes.

### Financial Support

Qualified graduate students may obtain financial support from several sources. The program offers stipend support and tuition fee waivers on a competitive basis throughout the year. University fellowships are available on a competitive basis but have deadlines set early each year. Therefore, prospective candidates should submit an application to the department in the preceding fall. In addition, students may be supported by faculty research grants.

### Biomedical Sciences Faculty

M. Harold Laughlin

professor and chair, professor, Department of Pharmacology and Physiology, School of Medicine; research investigator, Dalton Cardiovascular Research Center; PhD, University of Iowa.

Ronald L. Terjung

professor and associate chair, associate dean for research and post-graduate affairs, College of Veterinary Medicine, professor, Department of Pharmacology and Physiology, School of Medicine; research investigator, Dalton Cardiovascular Research Center; PhD, University of Iowa.

Chris P. Baines  
assistant professor; research investigator, Dalton Cardiovascular Research Center; PhD,  
University of South Alabama.

Frank W. Booth  
professor; research investigator, Dalton Cardiovascular Research Center; adjunct professor, physiology; PhD,  
University of Iowa.

Douglas K. Bowles  
professor and director of graduate studies; research investigator, Dalton Cardiovascular Research Center; PhD,  
University of Texas-Austin.

Trenton Boyd  
AHIP, adjunct assistant professor; MA, University of Missouri.

Mary Beth Brown  
adjunct professor; BSPT, Russell Sage College; MS, PhD, University of Southern California.

Lane L. Clarke  
professor; research investigator, Dalton Cardiovascular Research Center; DVM, University of Missouri; PhD,  
North Carolina State University.

Gheorghe M. Constantinescu  
professor; DVM, PhD, Drhc, University of Bucharest.

Ileana A. Constantinescu  
clinical associate professor, DVM, MS.

David Cross  
assistant teaching professor; DVM, University of Missouri; PhD, The Ohio State University.

Kevin Cummings  
assistant professor; PhD, University of Victoria; Victoria, B.C.

John R. Dodam  
professor and chair of Veterinary Medicine and Surgery, College of Veterinary Medicine; diplomate, American  
College of Veterinary Anesthesiologists; DVM, The Ohio State University; PhD, North Carolina State University.

Craig Emter  
assistant professor; PhD, University of Colorado-Boulder.

Brian L. Frappier  
clinical associate professor; DVM, Michigan State University; PhD, The Ohio State University.

Venkateshu K. Ganjam  
professor; professor, veterinary medicine and surgery; research investigator, Dalton Cardiovascular Research  
Center; BVSc, SV University-India; PhD, Oklahoma State University.

Eileen M. Hasser

professor; research investigator, Dalton Cardiovascular Research Center; adjunct associate professor, neurobiology, College of Medicine, Northeastern Ohio University; PhD, University of Oklahoma.

Cheryl M. Heesch

professor; research investigator, Dalton Cardiovascular Research Center; PhD, University of Texas Health Science Center.

Virginia H. Huxley

adjunct professor, professor, physiology; PhD, University of Virginia.

Salman Hyder

professor; research investigator, Dalton Cardiovascular Research Center; PhD, University of Glasgow.

Gary S. Johnson

adjunct associate professor, associate professor, veterinary pathobiology; DVM, University of Missouri; PhD, Kansas State University.

David D. Kline

assistant professor; research investigator, Dalton Cardiovascular Research Center; PhD, Case Western Reserve University.

M. Cathleen Kuehl-Kovarik

assistant teaching professor; DVM, Colorado State University; PhD, Iowa State University.

Chada S. Reddy

associate professor; BVSc, Andhra Pradesh Agricultural University; PhD, University of Mississippi.

Cheryl S. Rosenfeld

associate professor; research investigator, Life Sciences Center; DVM., University of Illinois Champaign-Urbana; PhD, University of Missouri.

George E. Rottinghaus

adjunct associate professor; PhD, Iowa State University.

Leona J. Rubin

associate professor; research investigator, Dalton Cardiovascular Research Center; PhD, University of Colorado.

Steven S. Segal

adjunct professor; PhD in Physiology and Education, University of Michigan.

Richard Tsika

professor; research investigator, Life Sciences Center; PhD, University of California-Irvine.

Wade V. Welshons

associate professor; PhD, Harvard University.

Steve (Hsiao-Tung) Yang

research professor; PhD, Brigham Young University.

## Master of Science in Basic Biomedical Sciences

Brenda Klemme [klemmeb@missouri.edu](mailto:klemmeb@missouri.edu)  
 W111 Veterinary Medicine Building  
 1600 Rollins Road  
 Columbia, MO 65211  
 573-882-7305  
<http://www.dbms.missouri.edu/>

### About the Program

The MS program in Basic Biomedical Sciences provides in-depth training to prepare scientists in interdisciplinary basic research (molecular, cellular, organ and integrative). Departmental faculty members represent diverse Medical-related basic science disciplines that provide a unique opportunity for biomedical research training. Core courses include physiology, cell biology and an introduction to research methodology. The multidisciplinary focus of the program is also emphasized in the candidate's MS program committee.

### Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

### Admission Criteria

- Fall deadline: January 15
- Spring deadline: September 15
- Summer deadline: Not Applicable
- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
100	600

- Minimum **GRE** scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative	Analytical
Prior to August 1, 2011	1000	3.5
On or After August 1, 2011	300	3.5

- Minimum GPA: 3.0
- Required prerequisite courses: Biology (10 hrs), Physics (3 hrs), Biochemistry (3 hrs), Chemistry (10 hrs), Calculus (3 hrs)

NOTE: The GRE requirement may be waived for applicants with an MD or DVM. Prerequisite courses may be completed during the master's program.

## Required Application Materials

### [To the Graduate School:](#)

- All required Graduate School documents

### [To the Biomedical Sciences MS Program:](#)

- Program-specific application
- Letter of intent
- GRE scores
- Copy of transcripts
- 3 letters of recommendation

## MS Degree Requirements

To attain the master's degree, 30 hours of graduate credit must be completed; 15 hours or more shall be 8000 level (exclusive of research, problems and independent study courses); and 6 to 9 hours of 8090 Research. A grade of 3.0 or better is required in all core courses and serves as the qualifying examination for the degree. In addition to the departmental core courses, students may take courses specifically planned to meet the needs and strengths of the individual.

## Evaluation

The master's candidate is evaluated semiannually for satisfactory rate of progress as defined by timely completion of course courses and progress on research activities as stipulated by the master's program committee. The master's candidate must carry out original research culminating in a written thesis, present the thesis work at a departmental seminar and defend the thesis in an oral examination by the master's program committee.

## Length of Study

The time limit for the master's degree is five years after initiating the program.

## Doctorate in Biomedical Sciences Area (PhD)

### Admission Contact Information

Brenda Klemme [klemmeb@missouri.edu](mailto:klemmeb@missouri.edu)

W111 Veterinary Medicine Building

1600 Rollins Road

Columbia, MO 65211

573-882-7305

<http://www.dbms.missouri.edu/>

## About the Doctoral Degree Program

The Biomedical Sciences Area PhD is a multidisciplinary program that integrates molecular, cellular and systemic biology within the context of biomedical research. The program provides the student with the background to investigate questions relevant to the Medical sciences at the integrative, molecular or cellular level and to relate the findings to mammalian physiology. Training in both fundamental and state-of-the-art research methodologies help students develop the skills necessary for competitive biomedical research. The program is administered

through the Department of Biomedical Sciences (College of Veterinary Medicine) that has research faculty representing a diversity of medical-related basic science disciplines, including anatomy, biochemistry, histology, pathology, molecular biology, physiology, pharmacology and toxicology. The program offers a rich environment for graduate study and a unique opportunity for training scientists in comprehensive interdisciplinary research.

### Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

### Admission Criteria

- Fall deadline: December 15
- Spring deadline: September 15
- Summer deadline: Not Applicable
- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
100	600

- Minimum **GRE** scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative	Analytical
Prior to August 1, 2011	1000	3.5
On or After August 1, 2011	300	3.5

- Minimum GPA: 3.0
- Required prerequisite courses: Biology (10 hrs), Physics (3 hrs), Biochemistry (3 hrs), Chemistry (10 hrs), Calculus (3 hrs)

NOTE: The GRE requirement may be waived for applicants with an MD or DVM.

### Degree Requirements

To attain the PhD degree, 72 hours of graduate credit must be completed:  
15 hours or more at the 8000/9000 level (exclusive of research, problems and independent study courses)

The core curriculum includes:

- physiology (10 credit hours)
- biochemistry/cell biology or histology (4 or 5 credit hours, respectively)
- multidisciplinary approaches to biomedical research (2 credit hours)
- departmental seminar (2 credit hours)

Minimum of 1 additional 7000-level course in each of the following areas:

- molecular biology
- cellular biology
- integrative biology

## **Rate and Quality of PhD Progress**

A grade of 3.0 or better is required in the core curriculum and serves in lieu of a qualifying examination for the degree. The choice of additional courses will be made individually by the student in consultation with his/her adviser and doctoral program committee. Following completion of the plan of study, candidates for the PhD degree must pass a comprehensive examination designed by the doctoral program committee that reflects an understanding of the multidisciplinary approach to biomedical research. The PhD candidate is evaluated semiannually by a faculty committee to ensure a satisfactory rate of progress as defined by timely completion of core courses and productivity in research activities as stipulated by the student's doctoral program committee. The PhD candidate must carry out original research culminating in a written dissertation, present the dissertation work at a departmental seminar and defend it in an oral examination given by the doctoral program committee. The program for the PhD degree must be completed within five years of passing the comprehensive examination.

## **Dual Degrees: Biomedical Sciences and Veterinary Medicine**

### Contact Information

Brenda Klemme [klemmeb@missouri.edu](mailto:klemmeb@missouri.edu)

W111 Veterinary Medicine Building

1600 Rollins Road

Columbia, MO 65211

573-882-7305

<http://www.dbms.missouri.edu/>

### **About the Program**

The Biomedical Sciences graduate programs enable veterinary medical students to pursue studies in the basic biomedical discipline of their choice for a PhD or MS degree while enrolled in the College of Veterinary Medicine. The program is designed to prepare students for advanced professional careers in universities and colleges, research institutes and industrial research.

With consent of the student's graduate program committee, courses from the professional curriculum (which includes a major portion of the core curriculum) can be accepted toward the graduate degree.

### **Doctoral Program**

The PhD program requires a minimum of 30 credit hours of 9090 Research culminating in completion of original research and defense of a written dissertation.

### **Dual Master's Degree for Veterinary Medicine**

The master's/DVM program enables veterinary medical students to complete a master's degree while enrolled in the College of Veterinary Medicine. The program allows qualified students to seek in-depth involvement in the basic biomedical discipline of their choice. Six hours of 9090 Research that result in an original thesis are required. Financial support may be provided to VM2-4 students through teaching assistantships in gross anatomy laboratory (Veterinary Anatomy 5500 and 5501).

## Areas of Study

Major biomedical disciplines include anatomy of domestic species (gross or microscopic); physiology/pharmacology (molecular, cellular and integrative); biochemistry/molecular biology; endocrinology; and toxicology. Specific areas of interest are exercise sciences; cardiovascular and neurosciences; muscle biology; membrane transport biology; reproductive biology; and developmental toxicology.

## Admission Contact Information

Brenda Klemme  
 klemmeb@missouri.edu  
 W111 Veterinary Medicine Building  
 1600 Rollins Road  
 Columbia, MO 65211  
 573-882-7305  
<http://www.dbms.missouri.edu/>

## Admission Criteria

- Fall deadline: December 15
- Spring deadline: September 15
- Summer deadline: Not Applicable
- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
100	600

- Minimum **GRE** scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative	Analytical
Prior to August 1, 2011	1000	3.5
On or After August 1, 2011	300	3.5

- Minimum GPA: 3.0
- Required prerequisite courses: Biology (10 hrs), Physics (3 hrs), Biochemistry (3 hrs), Chemistry (10 hrs), Calculus (3 hrs)

## Required Application Materials

### To the Graduate School:

- All required Graduate School documents

### *To the Program ([www.dbms.missouri.edu](http://www.dbms.missouri.edu)):*

- Program-specific application
- Letter of intent
- Copy of GRE scores
- Copy of transcripts
- 3 letters of recommendation

## Courses

See Veterinary Biomedical Sciences (V BSCI) in the myZou online system.

*Note: The myZou system shows courses offered for both MS and PhD in biomedical sciences, as well as the dual degree programs in biomedical sciences and veterinary medicine. Students must check with an adviser to see which courses are appropriate for each plan of study.*

## Biomedical Science Master of Science: Comparative Medicine *emphasis*

**Please Note:** This is a Post-DVM Master of Science Degree

Discovery Ridge Bldg Room N128  
4011 Discovery Drive  
Columbia, MO 65201  
573-882-6628  
<http://www.radil.missouri.edu/info/cmp/>

### About This Degree

This postdoctoral (post-DVM) program prepares graduates for careers in comparative medicine. This graduate program can be coupled with residency training and meet the requirements for eligibility for the American College of Laboratory Animal Medicine (ACLAM) certification examination.

### Programmatic Strengths

- The opportunity for comparative studies in a joint veterinary and human medical environment
- The multidisciplinary nature of the faculty participating in the training program
- The potential to couple training in research with residency training in laboratory animal medicine, comparative pathology, diagnostics, and training toward board certification
- Strong research resources including AAALAC-accredited research animal facilities, a full-service, internationally-recognized research animal diagnostic laboratory, and NIH-funded research resource centers for mice, rats and swine
- A long history of successful training in comparative medicine

### Class Size & Resources

Typically there are 10-14 postdoctoral trainees in the program at once. Networking and sharing of experiences and cooperation among trainees is an important factor in the success of the program.

### Comparative (Veterinary) Medicine Faculty

Craig L. Franklin

director of graduate studies, professor of veterinary pathobiology; DVM, PhD, University of Missouri, diplomate, American College of Laboratory Animal Medicine.

Yuksel Agca

associate professor of veterinary pathobiology; DVM, Ankara University; PhD, Purdue University

Cynthia L. Besch-Williford

adjunct professor of veterinary pathobiology; DVM, Louisiana State University; PhD, University of Missouri, diplomate, American College of Laboratory Animal Medicine.

Elizabeth C. Bryda

associate professor of veterinary pathobiology; PhD, Rutgers University.

Lonny W. Dixon

director, office of animal resources; DVM, MS, University of Missouri, diplomate, American College of Laboratory Animal Medicine.

Brian Ermeling

director, office of animal care and quality assurance; DVM, MS, University of Missouri, diplomate, American College of Laboratory Animal Medicine.

Patricia L. Farrar

veterinarian, office of animal resources; DVM, MS, University of Missouri, diplomate, American College of Laboratory Animal Medicine.

Scott W. Korte

clinical veterinarian, office of animal resources; DVM, University of Missouri.

Michael L. Linville

manager, clinical vet services, office of animal resources; DVM, University of Missouri.

Robert S. Livingston

adjunct clinical associate professor of veterinary pathobiology; DVM, University of Illinois; PhD, University of Missouri, diplomate, American College of Laboratory Animal Medicine.

Erin K. O'Connor

clinical veterinarian, office of animal resources; DVM, University of Missouri.

## **Admission Contact Information**

Craig Franklin, DVM, PhD

Discovery Ridge Bldg Rm N128

4011 Discovery Drive

Columbia, MO 65201

573-882-6623

## **Admission Criteria**

- Fall deadline: N/A
- DVM or equivalent from an accredited college of veterinary medicine or successful completion of the foreign equivalency examination and approval by the Comparative Medicine Program faculty
- Meet standards for admission to the Graduate School

## **Required Application Material**

### [To the Graduate School:](#)

- All required Graduate School documents

### [To the CMP Postdoctoral MS Program:](#)

- curriculum vitae
- statement of career goals and interests
- complete transcripts

- Graduate Record Examination Scores (if available)
- three letters of reference

### **Degree Requirements**

The CMP emphasizes comparative medicine research training and includes graduate course work. Research training is performed under an established investigator in one of several life science departments on the MU campus. Recommended graduate courses include pathology of laboratory animals, methodology of animal experimentation, biology of laboratory animals, laboratory animal resource management, grant and manuscript writing for biomedical researchers, laboratory and project management, biomedical ethics and seminars. Elective courses frequently taken by trainees include basic and advanced courses in immunology, molecular biology, physiology, reproductive biology and/or disease pathogenesis. Research typically deals with the application of an animal model in the investigation of human diseases or the study of naturally occurring diseases of laboratory animals. Requirements for elective course work, residency and teaching experience are determined with the student's advisory committee. Trainees also participate in teaching and instructional programs offered to veterinary students and research personnel.

### **Written Scholarly Work**

The MS degree requires the completion of a significant manuscript suitable for publication in a refereed journal, or an approved equivalent scholarly effort.

### **Residency**

For trainees enrolled in the combined graduate/residency program, residency rotations are performed during the first year of training and research training occurs in years two and three.

### **Residency rotations include:**

clinical medicine and animal resource management in the Office of Animal Resources (OAR)  
colony management, diagnostic, comparative and research pathology in the Mutant Mouse Regional Resource Center (MMRRC) and Rat Resource and Research Center (RRRC)

### **Moving to a PhD Program**

Trainees desiring to change to a PhD program have the opportunity to do so in a variety of programs including the Pathobiology Area Program.

### **Courses**

For Comparative (Veterinary) Medicine courses, see Laboratory Animal Medicine (LAB AN) in the myZou online system.

## **Biomedical Science Master of Science: Pathobiology *emphasis***

**Note:** For the PhD in Veterinary Pathobiology, refer to Pathobiology section of this catalog.

College of Veterinary Medicine  
201 Connaway Hall  
573-884-2444  
<http://www.cvm.missouri.edu/vpbio/index.html>

### **About the Program**

The College of Veterinary Medicine offers a master of science degree in biomedical sciences with a specialization in veterinary pathobiology and/or laboratory animal medicine, which is administered through the Department of Veterinary Pathobiology. The degree requires 30 credit hours of work including courses, seminars, research, and problems courses. The program includes research in a particular field and defense of a thesis which embodies the results of this work. Certain areas of emphasis require submission of a formal master's thesis while others require preparation of a publishable manuscript.

### **Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

### **Pathobiology Emphasis Faculty**

Yuksel Agca  
PhD; associate professor of veterinary pathobiology.

Kristina Aldridge  
PhD; assistant professor of pathology and anatomical science.

Deborah Anderson  
PhD; assistant professor of veterinary Pathobiology, director Laboratory of Infectious Diseases Research (LIDR)

Ulus Atasoy  
MD, assistant professor of surgery and molecular microbiology and immunology.

Christopher P. Baines  
PhD; assistant professor of biomedical sciences

Brenda T. Beerntsen  
PhD; associate professor of veterinary pathobiology.

Linda Berent  
DVM, PhD; clinical associate professor of veterinary pathobiology.

Alex Bermudez  
DVM, MS; director of the Veterinary Medical Diagnostic Laboratory, associate professor of veterinary pathobiology.

David Beversdorf  
MD, associate professor of radiology, neurology, and psychology.

Greg Blomquist  
PhD, assistant professor of anthropology.

Charles R. Brown  
PhD; professor of veterinary Pathobiology.

Jeffrey N. Bryan  
DVM, PhD, associate professor of oncology.

Elizabeth Bryda  
PhD; associate professor of veterinary pathobiology.

Michael Calcutt  
PhD; associate professor of veterinary pathobiology.

Charles Caldwell  
PhD; professor of pathology & anatomical science- anatomical pathology.

C. Andrew Carson  
VMD, PhD; professor emeritus of veterinary pathobiology.

Stan Casteel  
DVM, PhD; professor of veterinary pathobiology.

Leah Cohn  
DVM, PhD; associate professor of veterinary medicine & surgery.

James Cook  
DVM, PhD; professor of veterinary small animal medicine & orthopedic surgery.

Dawn D. Cornelison  
PhD, associate professor of biological sciences.

Mark Daniels  
PhD; assistant professor of molecular microbiology and immunology.

George Davis  
MD, PhD, professor of medical pharmacology and physiology.

Kevin C. Dellsperger  
MD, PhD, professor of internal medicine and medical pharmacology and physiology.

John Dodam  
PhD; department chair and associate professor of veterinary medicine and surgery.

Tim Evans  
DVM, PhD; associate professor of veterinary pathobiology.

William Fales

PhD; professor of veterinary pathobiology.

Derek Fox

DVM, PhD; associate professor of veterinary medicine & surgery.

Craig Franklin

DVM, PhD; professor of veterinary pathobiology.

Vladislav Glinskii

MD, assistant professor of pathology and anatomical sciences.

Sheila A Grant

PhD, associate professor of biological engineering.

ZeZong Gu

PhD; assistant professor of pathology & anatomical sciences.

Carolyn Henry

DVM, PhD; director of the Scott Program, professor of veterinary oncology.

Tim Hoffman

PhD; professor of medicine-hematology & oncology.

Casey Holliday

PhD; assistant professor pathology & anatomical sciences, anatomy.

Gary S. Johnson

DVM, PhD; associate professor of veterinary pathobiology.

Gayle C. Johnson

DVM, PhD; professor of veterinary pathobiology.

Martin Katz

PhD; professor of ophthalmology.

DaeYoung Kim

DVM, PhD; clinical associate professor, veterinary pathobiology.

Keiichi Kuroki

DVM, PhD; assistant professor, veterinary pathobiology.

Mike Lewis

PhD; associate professor of veterinary medicine & surgery.

Shan-Lu Liu

MD, PhD, associate professor of molecular microbiology and immunology.

Christian Lorson

PhD; professor of veterinary pathobiology.

Monique Lorson

PhD; associate research professor of veterinary pathobiology.

Dennis Lubahn

PhD; professor of biochemistry.

John Middleton

DVM, PhD; associate professor of food animal medicine.

W. Jeff Mitchell Jr.

DVM, PhD; associate professor of veterinary pathobiology.

Cecil Moore

DVM, PhD; professor of ophthalmology.

Dennis O'Brien

DVM, PhD; professor of veterinary medicine & surgery.

Charlotte Phillips

PhD; associate professor of biochemistry.

David Pintel

PhD, R. Phillip and Diane Acuff endowed professor of molecular microbiology and immunology

Alpana Ray

PhD; associate research professor of veterinary pathobiology.

Bimal Ray

PhD; professor of veterinary pathobiology.

Chada Reddy

PhD; associate professor of veterinary biomedical sciences & pharmacology.

Tom Reilly

PhD; clinical associate professor of veterinary pathobiology.

R. Michael Roberts

PhD; professor animal science & biochemistry.

Stefan G. Sarafianos

PhD, associate professor of molecular microbiology and immunology.

Heidi Schatten,

PhD; professor of veterinary pathobiology.

Susan Schommer

PhD; assistant professor of veterinary pathobiology.

Daniel Shaw  
DVM, PhD; professor of veterinary pathobiology.

George P. Smith  
PhD; professor of biological sciences.

George Stewart  
PhD; McKee Endowed Professor of Microbial Pathogenesis and Chair of Veterinary Pathobiology.

R. William Stich  
PhD; professor of veterinary pathobiology.

Kristen Taylor  
PhD, assistant professor of pathology and anatomical sciences

Catherine Vogelweid  
DVM, PhD; clinical associate professor, director of graduate studies-veterinary pathobiology.

Carol V. Ward  
PhD; professor of pathology & anatomical science.

Marlyn Whitney  
DVM, PhD; associate clinical professor of veterinary pathobiology.

Charles Wiedmeyer  
DVM, PhD; associate professor of veterinary pathobiology.

Habib Zaghouni  
PhD, J. Lavenia Edwards chair in pediatrics

Guoquan Zhang  
PhD; assistant professor of veterinary pathobiology.

## **Admission Contact Information**

Anne Chegwidde  
201 Connaway Hall  
Columbia, MO 65211  
573-884-2444

## **Admission Criteria**

Fall deadline: n/a  
Minimum TOEFL score (when appropriate): 500/61 (paper/internet)  
Minimum GRE score: GRE scores required  
Undergraduate GPA: 3.0  
Designated faculty mentor  
Professional students with a DVM degree may be eligible to waive the GRE.

## **Required Application Materials**

*To the Graduate School:*

All required Graduate School documents

*To the Veterinary Pathobiology Program:*

3 letters of recommendation (can be submitted through the Graduate School's online application as well)  
GRE scores

**Courses**

See Veterinary Pathobiology (V PBIO) in the myZou online system.

## **Biomedical Sciences MS**

### **Veterinary Medicine and Surgery *emphasis***

College of Veterinary Medicine  
Department of Veterinary Medicine and Surgery  
A-384 Clydesdale Hall  
573-882-1807  
<http://www.cvm.missouri.edu/VMS/index.htm>

#### **About the Program**

The College of Veterinary Medicine, through the Department of Veterinary Medicine and Surgery, offers graduate work leading to the master of science degree in veterinary biomedical sciences with an emphasis in veterinary medicine and surgery. In addition, faculty within the department offer supervision for doctoral and postdoctoral study and research. Many but not all graduate students in this area of study combine their graduate degree training with clinical residency programs leading to board certification in some specialty field within veterinary medicine.

#### **Types of Study**

The program provides advanced training in anesthesiology, comparative cardiology, equine, food animal and companion animal medicine and surgery, neurology, oncology, comparative ophthalmology, radiation oncology, radiology, nutrition, and theriogenology among other areas.

#### **Resources and Facilities**

Graduate students have ready access to clinical patients, medical records and facilities of the Veterinary Medical Teaching Hospital to aid them in clinical research. The college has its own library. More detailed information regarding the emphasis area of veterinary medicine and surgery can be found at the website <http://www.cvm.missouri.edu/VMS/index.htm>

### **Biomedical Sciences: emphasis: Veterinary Medicine and Surgery - Faculty**

Sandra M. Axiak,  
assistant professor, diplomate ACVIM (oncology), DVM, Michigan State University.

Bob Backus  
associate professor, diplomate ACVN, DVM, MS, PhD, University of California – Davis.

Keith R. Branson  
clinical assistant professor, diplomate ACVA, DVM, Kansas State University, MS, University of Illinois.

Lisa Britt  
assistant teaching professor, diplomate ACVR, DVM, North Carolina State University, MS, Washington State University.

Jeffrey Bryan

associate professor, diplomate ACVIM (oncology), DVM, University of California-Davis, MS, PhD, University of Missouri.

Alex Bukoski

assistant professor, diplomate ACVA, DVM, Virginia-Maryland Regional College, PhD, University of Virginia.

C.B. Chastain

professor, diplomate ACVIM (small animal internal medicine), DVM, University of Missouri, MS, Iowa State University.

Joan R. Coates

professor, diplomate ACVIM (neurology), DVM, University of Missouri, MS, Auburn University.

Leah A. Cohn

professor, diplomate ACVIM (small animal internal medicine), DVM, University of Tennessee, PhD, North Carolina State University.

Cristi R. Cook

assistant teaching professor, diplomate ACVR, DVM, MS, University of Missouri.

James L. Cook

professor, diplomate ACVS, diplomate ACVSMR, DVM, PhD, University of Missouri.

Amy E. DeClue

assistant professor, diplomate ACVIM (small animal internal medicine), DVM, University of Illinois, MS, University of Missouri.

John R. Dodam,

associate professor, diplomate ACVA, DVM, The Ohio State university, MS, PhD, North Carolina State University.

Deborah Fine

associate professor, diplomate ACVIM (cardiology), DVM, Oregon State University, MS, University of Minnesota.

Derek B. Fox

associate professor, diplomate ACVS, DVM, Michigan State University, PhD, University of Missouri.

V.K. Ganjam

professor, BVSc, SV University-India, MS, Washington State University, PhD, Oklahoma State University.

Elizabeth Giuliano

associate professor, diplomate ACVO, DVM, University of Wisconsin-Madison, MS, University of Missouri.

Meera Heller

assistant professor, diplomate ACVIM (large animal internal medicine), DVM, PhD, University of California-Davis.

Carolyn J. Henry

professor, diplomate ACVIM (oncology) DVM, MS, Auburn University.

Philip J. Johnson

professor, diplomate ACVIM (large animal internal medicine), ECEIM, BVSc, University of Bristol, MS, University of Illinois.

Rebecca Johnson

associate professor, PhD, University of Iowa, RN, FAAN

Kevin Keegan

professor, diplomate ACVS, DVM, University of Missouri, MS, University of Illinois.

Marie Kerl

associate teaching professor, diplomate ACVIM (small animal internal medicine), diplomate ACVECC, DVM, Auburn University, MPH, University of Missouri.

Joanne Kramer

associate teaching professor, diplomate ACVS, DVM University of Minnesota.

Jimmy C. Lattimer

associate professor, diplomate ACVR, diplomate ACVRO, DVM, Washington State University, MS, Colorado State University.

Michael R. Lewis

associate professor, MS, California Institute of Technology, PhD, City of Hope Graduate School of Biological Sciences.

Tony Mann

professor, diplomate ACVS, diplomate ACVECC, DVM, The Ohio State University, MS, Texas A&M University.

Isabelle Masseau

assistant teaching professor, diplomate ACVR, DVM, MSc, Université of Montreal, PhD, University of Missouri

John R. Middleton

associate professor, diplomate ACVIM (large animal internal medicine), DVM, PhD, Washington State University.

Rajiv Ravindra Mohan

professor, MSc, PhD, Lucknow University, India

Dusty Nagy

assistant teaching professor, diplomate ACVIM (large animal internal medicine), DVM, Cornell University, MS, PhD, University of Missouri.

Dennis O'Brien

professor, diplomate ACVIM (neurology), DVM, MS, PhD, University of Illinois.

Jacqueline Pearce

assistant teaching professor, diplomate ACVO, DVM, University of Saskatchewan, MS, University of Missouri.

Patrick Pithua

assistant professor, BVetMed, Makerere University, MSc, University of London, PhD, University of Minnesota.

Scott Pooch

assistant extension professor, diplomate AVBP (beef and dairy), DVM, University of Wisconsin

Shannon Reed

assistant teaching professor, diplomate ACVS, DVM, University of Missouri, MS, Oregon State University.

Carol N. Reiner

associate professor, diplomate ACVIM (small animal internal medicine), DVM, PhD, University of California-Davis.

Loren Schultz

associate teaching professor, diplomate ACVPM (beef), DVM, MS, Kansas State University.

Kim A. Selting

associate teaching professor, diplomate ACVIM (oncology), DVM, MS, Colorado State University.

James Tomlinson

professor, diplomate ACVS, DVM, University of Minnesota, MVSc, University of Saskatchewan.

David A. Wilson

professor, diplomate ACVS, DVM, MS, University of Illinois.

Fred Wining

assistant professor, diplomate ACVIM (neurology), VMD, University of Pennsylvania, MS, Washington State University.

## Admission Contact Information

Connie Sievert

900 East Campus Drive

Columbia, MO 65211

573-882-1807

## Admission Criteria

**Fall deadline:** n/a

- Completion of a bachelor's or professional degree
- Identification of a mentor with graduate faculty standing within the Department of Veterinary Medicine and Surgery
- Identification of funding (with advice of mentor) for the period of research and study
- Minimum **TOEFL** score (when appropriate):

Internet-based test (iBT)	Paper-based test (PBT)
120	520

- Minimum GRE score: none

The majority of MS students within our program are completing specialty residency training programs in some field of veterinary medicine simultaneously with the MS degree. Admission to these programs generally precedes

admission to our graduate programs. The GRE requirement may be waived for exceptional students by the Veterinary Medicine and Surgery Departmental Research and Graduate Studies Committee. Applicants may be asked to strengthen any deficiencies in prerequisites to the chosen area of concentration through enrollment in a post- or non-degree graduate student program.

## Required Application Materials

### [To the Graduate School](#)

All required Graduate School documents

### [To the Veterinary Medicine and Surgery Emphasis Program](#)

GRE scores

## Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program Web site or ask the program contact for details.

## Degree Requirements

### *Advisers and the Advisory Committee*

Formulating a plan of study is the joint responsibility of the student, the adviser and the student's advisory committee. An advisory committee of at least three faculty members should be chosen during the first semester of enrollment. The advisory committee offers guidance and is responsible for approving a definitive plan of study.

The advisory group should consist of the major adviser and appropriate faculty members from the department, and at least one other member from another department within the college or university. Members of this committee may be recommended later for appointment to the examining committee. Members of the final examination committee should be chosen in the same manner as the advisory committee.

### *Publications*

A thesis reporting the results of original research is required of all candidates. A scientific paper based on the thesis research must be submitted to a refereed journal.

## Courses

See Veterinary Medicine & Surgery (V M S) in the MyZou online system.

## Robert J. Trulaske College of Business' Graduate Degree Programs

### About the Robert J. Trulaske, Sr. College of Business and its Graduate Degree Programs

Founded in 1914, the [Robert J. Trulaske, Sr. College of Business](#) enrolls about 350 graduate students as well as 4,000 undergraduates. The primary mission of the college is to prepare students to succeed in the world of business and to advance the body of knowledge about the world of business. The college has four academic units – Accountancy, Finance, Management, and Marketing – with 64 full-time faculty members.

The Trulaske College offers PhD degrees in both accountancy and business administration, an MBA degree, a 150-hour program that confers both undergraduate and master's degrees in accountancy, and an undergraduate degree in business administration. Over time, the college's degree programs and faculty research productivity have earned national acclaim.

The college takes great pride in its graduates. More than 31,000 alumni are contributing their expertise to the public and private sectors in every state in the U.S. and in a host of foreign countries. The Trulaske College's graduate-level degree programs, dual degrees, and certificates are described below.

### Accountancy Graduate Programs

School of Accountancy

Robert J. Trulaske, Sr. College of Business

303 Cornell Hall

573-882-4463

<http://business.missouri.edu/Prospective+Students/Accounting/default.aspx>

### About Accountancy Graduate Programs

The School of Accountancy offers graduate work leading to the master of accountancy and doctor of philosophy degrees. Graduate programs in accountancy prepare students for advanced professional careers in public, private and governmental accounting, and for careers in teaching and research.

Alert to change and recognizing that accounting education at the graduate level should be ahead of current practice, the School's programs require course work stressing advanced knowledge in accounting theory and practice, quantitative methods, economics and business. Opportunities exist on and off campus for exchanging ideas with practicing accountants and for participating in the solution of their professional problems.

Among the school's special facilities are a comprehensive collection of accounting and investment services, computer databases, technical journals and microfilm copies of annual reports, government documents and doctoral dissertations.

## **Funding**

Fellowships, scholarships and teaching and research assistantships are available to qualified graduate students.

## **Accountancy Faculty**

Vairam Arunachalam

director; professor; CMA, CFE; PhD, University of Illinois. Behavioral research in accounting, forensic accounting, and information systems.

Jere R. Francis

director of doctoral studies; professor; CPA; PhD, University of New England (Australia). The economics of auditing, corporate governance, international accounting and auditing research.

Inder Khurana

professor; ACA; PhD, Arizona State University. Financial accounting and auditing, market effects of financial statement disclosures, regulatory asset valuation in public utilities, the information content of audit qualifications and auditor changes.

Elaine G. Mauldin

associate professor; CPA; PhD, University of Nebraska at Lincoln. Internal controls, corporate governance, and assurance. Raynolde Pereira  
associate professor; PhD, University of Arizona. Understanding corporate finance and payout decisions, tax planning strategies in not-for-profit organizations, banks and property casualty insurers.

Kenneth W. Shaw

associate professor; CPA; PhD, University of Wisconsin. Financial accounting and disclosure quality, analysts' forecasts, corporate governance, market microstructure.

Matt Glendening

assistant professor; PhD, University of Iowa. Financial reporting, earnings management, and the political economy of accounting standard setting.

Kyonghee Kim

assistant professor; CPA; PhD, University of Pittsburgh. Compensation contracts, firms' voluntary disclosure and corporate governance.

Musa Subasi

assistant professor; PhD, University of Texas at Dallas. Archival financial accounting, disclosure, and sell-side analysts research.

QiuHong Zhao

assistant professor; PhD, University of Colorado. Market intermediaries, financial and reporting quality and valuation implications, earnings management, voluntary disclosure, corporate governance, and executive compensation.

Billie Cunningham

teaching professor; PhD, North Texas State University. Accounting education and accounting regulation.

Kristen M. Hockman

assistant teaching professor; CPA; M Acc, University of Missouri. Governmental accounting, auditing, accounting information systems.

Penny Kleen

assistant teaching professor; CPA; PhD, University of Missouri. Financial accounting, accounting education.

William J. Moser

associate teaching professor; CPA; PhD, University of Arizona. Income taxation, particularly the effect of taxes on corporate payout choice.

C. Christopher Prestigiacomo

associate teaching professor; CMA; CFA; PhD, University of Missouri. Intermediate accounting for finance majors and issues in managerial accounting.

Rachel Wilson

assistant teaching professor; JD, University of Missouri; LLM, New York University. Income taxation.

## **Master's Degree in Accountancy (M Acc )**

Admission Contact Information

Phyllis Moore [moorepa@missouri.edu](mailto:moorepa@missouri.edu)

303 Cornell Hall; Columbia, MO 65211

573-882-4463

### **About the M Acc Program**

The growing scope and diversity of functions being performed by professional accountants has created a strong demand for individuals who have both a broader base of general and business education as well as more in-depth technical accounting education than can be obtained in a four-year baccalaureate program. MU's M Acc program is designed especially to provide the additional breadth and depth of knowledge and skills required for success in contemporary accounting practice.

## Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

## Admission Criteria to the M Acc

- Fall deadline: March 15
- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
100	600

- Minimum **GMAT** scores:

	Verbal	Quantitative	Analytical	TOTAL
Minimum Score				640
Minimum Percentile	50 <sup>th</sup>			75 <sup>th</sup>

- Minimum GPA: at least 3.5 for last 60 hours
- Bachelor's degree from an accredited college or university, with a major in accountancy or equivalent
- A prior record of outstanding academic performance
- Strong letters of recommendation

Note: Meeting the minimum requirements does not guarantee admission. Admission is competitive and based on space availability.

## Required Application Materials

### [To the Graduate School](#)

All required Graduate School documents

Statement of objectives, no more than 500 words (upload to the online Graduate Application)

TOEFL score (if native language is not English)

### [To the M Acc Program](#)

GMAT score

2 Recommendation letters, mailed

## Prerequisites for the M Acc

The master of accountancy (M Acc) program encompasses the last 30 hours of MU's 150-hour accountancy program and presumes students have completed the undergraduate portion of the program, or the equivalent. Students whose undergraduate education is not equivalent to the first 120

hours of the 150-hour program may overcome important deficiencies by taking additional courses approved by the program director.

To be considered for acceptance in the M Acc program candidates must have completed the first 120 hours of MU's 150-hour program or received a baccalaureate degree from an accredited college or university with a major in accountancy or the equivalent (students with bachelor's degrees in non-accounting areas may enter the M Acc program after completing an appropriate set of "prerequisite" courses).

In addition to the requirements listed above, other factors such as the student's statement of objectives and recommendation letters also may be considered to the extent that they provide indications of a student's ability to be successful in the M Acc program.

### **The M Acc Admission Process**

Generally, admission decisions for the M Acc program are made in the late spring and summer for fall admissions only, ***and this is on a highly competitive basis.***

### **Graduation Requirements for the M Acc**

The basic 30-hour M Acc curriculum requires a minimum of 15 hours of accountancy courses and a minimum of 15 hours of courses reserved exclusively for graduate students. A maximum of 6 semester hours of graduate level course work may be transferred from another accredited master's program. Through careful selection of electives, the M Acc program provides great flexibility to enable customized programs of study in specialty areas of particular interest to students. One of the most popular areas of specialization is taxation (where a "tax track" is available. Other specialties may be developed in the areas of financial accounting and auditing.

### **For More Information about the M Acc**

For additional information regarding the master of accountancy degree, please visit our website or write to Phyllis Moore, director of the 150-hour and master of accountancy programs, School of Accountancy, Robert J. Trulaske, Sr. College of Business, 303 Cornell Hall, University of Missouri, Columbia, MO 65211.

## **Doctoral Degree in Accountancy**

### **Admission Contact Information**

Karen Staggs Brammer ([staggs@missouri.edu](mailto:staggs@missouri.edu))

303 Cornell Hall; Columbia, MO 65211

573-882-4463

## Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

## Admission Criteria

Fall deadline: February 1

### Doctoral Admission Criteria - *continued*

- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
100	600

- Minimum **GMAT** scores:

	Verbal	Quantitative	Analytical	TOTAL
Minimum Score				700

- A prior record of outstanding academic performance
- Strong letters of recommendation

## Required Application Materials

### [To the Graduate School](#)

All required Graduate School documents

### [To the Accountancy PhD Program](#)

Departmental Application

3 Recommendation letters, mailed or accepted electronically through the Graduate School application

Statement of Purpose, mailed

Resume, mailed

Official GMAT scores

## Prerequisites for the Doctoral Degree in Accountancy

International students should note that we rarely admit a student directly from outside the United States unless they have studied/worked in an English-language setting.

Prerequisites to undertaking doctoral course work include one, and preferably two, semesters of calculus; an introductory statistics course; intermediate-level microeconomic theory; and an undergraduate accounting major (or equivalent). Prior graduate work is not required for admission to the program, but most successful applicants do have a master's degree.

## **Graduation Requirements for the Doctoral Degree in Accountancy**

The University requires 72 total hours beyond a baccalaureate degree for a PhD. In order to meet this requirement, the School of Accountancy requires the following program of course work and dissertation research:

- 15 hours in doctoral-level accounting research courses
- 15 hours of course work in supporting theoretical fields (e.g. economics, finance, organizational theory and behavior)
- 18 hours of statistics and other research methods courses
- 8 hours in a weekly research seminar (meeting one hour per semester for four years)
- 12–16 hours of dissertation research.
- Course work is designed to be completed in five semesters (two and one-half years). Written and oral comprehensive examinations are then taken after completion of course work, and the remainder of years three and four is devoted to the completion of the research dissertation. Specializations are available in areas of faculty research interests.

## **More Information about the Doctoral Degree in Accountancy**

For information about the doctoral degree in accountancy, visit our website or write to Dr. Jere Francis, Director of the doctoral program in Accountancy  
School of Accountancy  
Robert J. Trulaske, Sr. College of Business  
303 Cornell Hall  
University of Missouri, Columbia, MO 65211.

## **Taxation Graduate Certificate**

School of Accountancy  
303 Cornell Hall  
573-882-4463  
For more information, contact Phyllis Moore ([moorepa@missouri.edu](mailto:moorepa@missouri.edu)).

### **About the Certificate**

Depending on the course configuration in the program, completion of the Certificate in Taxation indicates that a student has developed expertise in tax planning and preparation in regard to international, federal, state, or estate issues for corporations, partnerships, or individuals.

### **Eligibility**

Students must be enrolled in the M Acc graduate degree program in the School of Accountancy at MU to be eligible for the certificate.

## Plan of Study

Students are required to complete 15 credit hours to receive the certificate.

### **Required Courses:**

- Accountancy 7353
- Accountancy 8423
- Accountancy 8373

### **Elective Courses:**

- Accountancy 8393
- Accountancy 8453
- Accountancy 8383

## Courses

See Accountancy (ACCTCY) in the MyZou online system.

## Business Administration (Management, Marketing, and Finance)

Robert J. Trulaske, Sr. College of Business  
213 Cornell Hall  
573-882-2750

<http://business.missouri.edu/1566/default.aspx>

## Degrees Offered

Master of Business Administration (MBA)  
Doctorate (PhD) in Business Administration

[Cooperative Dual Degrees](#) (full-time program only):

- MBA and Bachelor of Science Industrial Engineering (BSIE)
- MBA and Master of Health Administration (MHA)
- MBA and Master of Science in Industrial Engineering (MSIE)
- MBA and Juris Doctor (JD)

The master of business administration and the doctor of philosophy in business administration are offered by the Trulaske College of Business, through the Departments of Finance, Management and Marketing. Students may pursue the MBA degree through our daytime program, known as the Crosby MBA, or our new execMBA program for working professionals. The Trulaske College of Business is accredited by AACSB International.

## Facilities and Resources

Cornell Hall, a state-of-the-art building, houses the Robert J. Trulaske, Sr. College of Business. It contains labs with over 230 computers with a variety of up-to-date software. The College subscribes to the following online services, databases and software packages: Wharton Research Data Services,

Audit Analytics Compustat, CRSP, Datastream/Worldscope, Eventus, I/B/E/S, , IRRRC, ISSM, Mergent FISD, Mutual Fund Links, SDC Platinum, Thomson Reuters, , , Stock Trak, and Qualtrics (an online survey system).

## **Business Administration Faculty**

Joan Gabel

dean, Robert J. Trulaske Sr., Dean of the Trulaske College of Business, JD, University of Georgia School of Law.

Stephen P. Ferris

associate dean for graduate studies and research and James Harvey Rogers Chair of Money, Credit and Banking, , PhD, University of Pittsburgh corporate governance, international finance, and behavioral corporate financed.

Peter H. Bloch

Pinkney C. Walker Professor of Teaching Excellence professor of marketing, PhD, University of Texas.

Todd H. Chiles

associate professor of management, PhD, University of Oregon.

Thomas W. Dougherty

Emma S. Hibbs/Harry Gunnison Brown Chair of Business and Economics, professor of management, PhD, University of Houston. Human resource management, organizational behavior, mentoring and careers.

Charles R. Franz

associate professor of management, PhD, University of Nebraska.

Lori S. Franz

professor of management, PhD, University of Nebraska.

Dan W. French

professor of finance, chair, PhD, Louisiana Tech University.

Srinath Gopalakrishna

David and July O'Neal MBA Professor, professor of marketing, PhD, Purdue University.

Daniel W. Greening

associate professor of management, PhD, The Pennsylvania State University.

Christopher J. Groening

assistant professor of marketing, PhD, University of Pittsburgh.

Qing (Grace) Hao  
assistant professor of finance, Chartered Financial Analyst, PhD, University of Florida.

John S. Howe  
Missouri Bankers Chair Professor of Finance, Chartered Financial Analyst, PhD, Purdue University.

Arthur G. Jago  
professor of management, PhD, Yale University.

Lin Jiang  
assistant professor of management, PhD, Georgia Institute of Technology. Innovation management.

Richard A. Johnson  
Emma S. Hibbs/Fredrick C. Middlebush Chair in Entrepreneurship, professor of Management, PhD, Texas A&M University.

Jongha Lim, assistant professor of finance, The Ohio State University

Murali K. Mantrala  
Sam M. Walton Distinguished Professor of Marketing, PhD, Northwestern University.

Detelina Marinova  
associate professor of marketing, PhD, University of Cincinnati.

Douglas D. Moesel  
associate professor of management, PhD, Texas A&M University. Innovation, entrepreneurship and creativity.

Michael O'Doherty  
assistant professor of finance, PhD, University of Iowa. Empirical asset pricing and financial econometrics.

Joel C. Poor  
associate teaching professor of marketing, PhD, University of California, Irvine. Product development, marketing education methods.

S. (Ratti) Ratneshwar  
Bailey K. Howard World Book Chair of Marketing, professor of marketing, chair, PhD, Vanderbilt University. Consumer behavior, brand management, advertising and persuasion.

Marsha L. Richins  
Myron Watkins Distinguished Professor, professor of marketing, PhD, University of Texas.

Christopher Robert  
associate professor of management, PhD, University of Illinois.

Shastri S. Sandy  
assistant professor of finance, PhD, University of Chicago.

Lisa K. Scheer  
Emma S. Hibbs Distinguished Professor, professor of marketing, PhD, Northwestern University.  
Interorganizational relationships, relationship marketing, marketing strategy.

Karen A. Schnatterly  
Frances Ridge Gay MBA Professor, associate professor of management, PhD, University of Michigan.  
Corporate governance, boards of directors and white collar crime.

Antonie Stam  
Leggett & Platt Distinguished Professor of Information Systems, professor of management, PhD,  
University of Kansas.

Daniel B. Turban  
Stephen Furbacher Professor in Organizational Change, professor of management, chair, PhD,  
University of Houston.

Bruce J. Walker  
Lansford Professor of Leadership, professor of marketing, PhD, University of Colorado.

James A. Wall Jr.  
Curators Distinguished Teaching Professor, professor of management, PhD, University of North  
Carolina.

Xuemin Yan  
Richard G. Miller Professor of Finance, associate professor of finance, PhD, University of Iowa.  
Empirical asset pricing, institutional investors, cross-section of stock returns

Dezhi (Denny) Yin  
assistant professor of management, PhD, Georgia Institute of Technology.

Shaoming Zou  
Robert J. Trulaske, Sr. Professor, professor of marketing, Michigan State University. Marketing and  
international business

## Master of Business Administration (MBA)

Students may pursue the MBA degree through our daytime program, known as the Crosby MBA, or our new execMBA program for working professionals.

Contact Information	Contact Information
<b>Crosby MBA (daytime program)</b> Office of Admissions 213 Cornell Hall; Columbia, MO 65211 573-882-2750 <a href="mailto:mba@missouri.edu">mba@missouri.edu</a> <a href="http://mba.missouri.edu">http://mba.missouri.edu</a>	<b>execMBA Program (for working professionals)</b> 306 Cornell Hall Columbia, MO 65211 (573) 882-2180 <a href="mailto:execmba@missouri.edu">execmba@missouri.edu</a> <a href="http://execmba.missouri.edu">http://execmba.missouri.edu</a>

### About the Crosby MBA

Crosby MBA candidates come from all backgrounds, including science, engineering, liberal arts, journalism, business and health-related fields. There are no prerequisite courses. Our admission standards are high and the curriculum is rigorous. The Crosby MBA program is AACSB accredited, nationally recognized and highly ranked by U.S. News America’s Best Graduate Schools, Forbes, Princeton Review, and The Wall Street Journal. Students attend full-time, although part-time is an option if the student is able to attend daytime classes.

### Career Preparation

Through the Crosby MBA program, highly capable graduate students gain real-world experience that prepares them for a wide variety of career paths. The program teaches skills necessary to compete in the global business environment, and helps one achieve a career path that will bring both personal fulfillment and professional success. We offer individual career counseling, an executive mentoring program, employer site visits, and workshops focusing on resume writing, presentation skills, negotiation skills and business etiquette. Students obtain employment in fields such as financial analysis, investments, banking, human resources, project management, strategy, operations and logistics, marketing, marketing analytics, consulting, and non-profit management.

### Financial Awards

Financial assistance in the form both of scholarships and research/teaching assistantships is available from the Crosby MBA program on a merit basis. Partial and full scholarships and tuition and fee waivers are available for over half of our students. Graduate assistantships are usually quarter-time appointments involving 10 hours of work a week at \$5100 annually. Some students serve as instructors for undergraduate finance classes and are paid \$7752 annually for those positions.

## **Plan of Study**

Required course work in five study areas, including Quantitative Analysis, Finance, Management, Marketing and Professional Development & Experiential Learning, provides a comprehensive business education for Crosby MBA students. Our curriculum assures that graduates enter the 21st century business world with tools that will enable them to be successful. Each area includes introductory classes for students new to the field, as well as advanced classes which ensure in-depth knowledge and skills.

The remainder of the course work is composed of fifteen hours of elective credit of which nine may be in a concentration area. The structure of the MU Crosby MBA allows students to concentrate in a specific area of business, develop a broad managerial focus, or complement business training with course work from other areas on campus. Areas of concentration include management, marketing, finance, marketing analytics, or another field related to a student's individual interests. The delivery format includes 1.5 credit hour, 8-week modules, to allow for more focused attention to a particular topic, as well as to provide a wider array of choices.

Up to 24 credits of introductory courses may be waived if students have prior equivalent course work with a minimum grade of "B" and as determined by the advisor based upon transcripts and course descriptions. Up to six credit hours of advanced work may be transferred from a regionally accredited institution in the U.S. or an overseas institution that is recognized by its country's Ministry of Education as a graduate degree granting institution, in accordance with the University of Missouri Graduate School policies. Business graduate level courses transferred in must be from a university that is accredited at the master's level by AACSB International.

## **Accelerated Crosby MBA Program**

Although no business background is required for entry to the program, students who have such will accelerate based on the waivers described above and may be able to graduate in 12-16 months. Normal degree completion is 21 months if full-time.

## **Graduation Requirements for the Crosby MBA**

Total graduate course work necessary to qualify for the Crosby MBA degree may vary from 35 to 59 semester hours. Individual program length depends on the number of introductory courses a student waives as determined by the academic adviser. For graduation, MBA students must have a cumulative grade point average of 3.0 or better in the hours completed in the designated MBA plan of study and a minimum 3.0 cumulative MU graduate grade point average.

## **About the execMBA Program**

This innovative executive MBA is specifically designed for high achieving professionals seeking a first-rate MBA program that provides flexibility around their work schedules. This is the same renowned degree and the same renowned faculty offered with the Crosby MBA, but is specially designed for

executives. Combining face-to-face class time with online delivery for professionals with substantive experience, the 21month execMBA program will connect you with peers, challenge you in relevant ways, and develop the mind- and skill-set to match today’s marketplace.

**Curriculum**

The program curriculum, designed with executives in mind, is inventive, practical and market-facing. Students will build skills that increase self- and global-awareness, develop strategic risk-taking, and heighten influence. Delivery is a blend of approximately 75% online and 25% in-class coursework. Students will amplify global expertise and value in the marketplace with an 8- to 10-day international residency. This lock-step, cohort program – meaning students will take the same classes together in the same order – is conducive to personal interactions with the other high-level professionals.

**Cost**

The execMBA program cost of \$65,000 includes tuition, all fees, the international residency, all required course materials and all group meals on campus for the entire 21months. Prospective students may check with their employers about educational benefits, and the University of Missouri Financial Aid Office can provide information about loan availability.

**MBA Admission Requirements**

<p>Admission Requirements for the <b>Crosby MBA</b> (daytime program)</p>	<p>Factors considered in the admissions decision include undergraduate grade point average (GPA), as indicated on the graduation transcript, with consideration given to other calculations; performance on the Graduate Management Admissions Test (GMAT) or the GRE; work experience, including significant part-time employment and internships; demonstrated leadership; and personal essays. A baccalaureate degree in any discipline from an accredited school is required. Interviews by invitation will also be conducted. See the <a href="#">Crosby MBA website</a> to apply.</p>
<p>Admission Requirements for the <b>execMBA</b> (for working professionals)</p>	<p>All applicants to the MU execMBA must have a minimum of 5-7 years of professional work experience, as well as a letter of endorsement from their employer to participate in the program. Other factors considered in admission include undergraduate GPA (a bachelor’s degree in any discipline from an accredited school is required), demonstrated leadership experience and a personal statement addressing criteria outlined on the <a href="#">exec MBA website</a>. Interviews by invitation will also be conducted.</p>

**International Applicants (to either the Crosby MBA or execMBA program)**

Applications are similar to those for domestic students, but an international student whose native language is not English is required to present an acceptable score on either the TOEFL or the IELTS.

Minimum <b>TOEFL</b> scores:	
Internet-based test (iBT)	Paper-based test (PBT)
79	550

*Or*

Minimum <b>Academic IELTS</b> scores:	
Listening	5.5
Reading	5.5
Writing	5.5
Speaking	5.5

Arrange to have your official scores sent directly to the University of Missouri - code is 6875. Include your scores in the “Test Information” section of the Graduate School’s online application. Admitted international students are often encouraged to participate in the university’s Intensive English Program to strengthen their preparation for the MBA coursework. Please [visit the MU Graduate School website](#) for additional international applicant information, including the English Language testing requirement.

### **Deadlines for Application**

Application Deadline for the <b>Crosby MBA</b> (daytime program)	<p>Students may begin the program any semester. Deadlines are as follows:</p> <p>Fall: January 15; February 15; April 1; rolling thereafter</p> <p>Spring: October 1; December 1; rolling thereafter</p> <p>Summer: January 15; February 15; April 1; rolling thereafter</p>
Application Deadline for the <b>execMBA</b> (for working professionals)	<p>The MU execMBA Program will accept applications for its Fall class beginning January 1st each year. Deadlines by round are as follows: Round 1: March 1; Round 2: June 1 ; rolling thereafter (space available basis).</p>

## Required Application Materials

### Required materials for application to the **Crosby MBA** (daytime program)

- Required documents include: Completed Graduate School Application
- Résumé and personal statement
- GMAT or GRE score
- TOEFL or IELTS (for international students)
- Transcript (you may upload an unofficial copy with your online application in addition to the official transcript required by the Graduate School)

Please see our [website](#) for detailed instructions about how to complete the required Graduate School application and submit these documents.

### Required materials for application to the **execMBA** (for working professionals)

Required documents include:

- Completed Graduate School Application
- Personal Statement
- Résumé
- Transcripts (you may upload unofficial copies with your online application in addition to the official transcript required by the Graduate School)
- Letter of Endorsement from Employer
- TOEFL or IELTS (for international students only)
- GMAT and/or GRE scores will be considered, but are not a requirement for admission

Please see our [website](#) for detailed instructions about how to complete the application and submit these documents.

## Good Standing

To remain in good standing for both the Crosby MBA and execMBA programs, a graduate student must maintain a Graduate School and program cumulative grade point average of 3.0 or better. At the end of any semester, a graduate student whose cumulative grade point average is less than 3.0 is placed on academic probation. A student is subject to dismissal if the cumulative grade point average remains less than 3.0 or if, at any point, the student's semester or cumulative grade point average falls to less than 2.0.

## Doctorate in Business Administration

### Admission Contact Information

Jan Curry (grad@missouri.edu)

213 Cornell Hall

Columbia, MO 65211

573-882-2750

<http://business.missouri.edu/Prospective+Students/PhD/default.aspx>

### About the Doctorate in Business Administration

The PhD program is designed to prepare graduates for careers as effective university researchers and teachers or for senior research positions in business or government. A primary objective of the program is to train PhD candidates to become proficient researchers. Therefore, course work involves research activities such as literature review and critique, theoretical modeling, research design, computer-assisted empirical analysis and preparation of proposals and research papers. Another objective is to train students to become high-quality teachers. PhD candidates are provided the opportunity to teach undergraduate courses in their specialty area. In addition, students are expected to participate in national and regional academic conferences and are encouraged to work with faculty in developing individual research and teaching skills.

### Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details. Financial assistance (research and teaching assistantships) is generally awarded at the time of acceptance to the program. These assistantships are usually half-time appointments involving approximately 20 hours of work each week, with work split between teaching and research assignments.

Assistantships are supplemented by scholarships and summer teaching or research assignments to provide minimum financial support of at least \$21,201 annually. Additional scholarship and professional development funds are available. Educational fees are waived for holders of assistantships as well as the supplemental business course fee. The College provides each doctoral student with \$2,000 in development funds, and departments offer support for research projects and travel associated with research presentations at major academic conferences. A Medical insurance subsidy and discounts on University Book Store purchases are provided to holders of assistantships.

### Admission Criteria

Fall deadline: February 1

- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
100	600

- Minimum GMAT score: Superior test scores
- Outstanding performance in previous academic work
- Maturity and potential required for making scholarly contributions to their field of interest

### **Required Application Materials**

#### [To the Graduate School](#)

All required Graduate School documents

#### [To the Doctorate in Business Administration Program:](#)

Departmental Application

3 letters of recommendation

GMAT scores

Statement by the applicant indicating the intended major area of study, career objectives and any other information deemed pertinent for consideration by the admissions committee

### **Plan of Study and the Program Committee**

During the first semester of course work, the PhD Coordinator, a member of the doctoral faculty from the major area of study (finance, management or marketing), serves as the student's faculty adviser.

By the end of the first year of course work, a student should make formal application for the doctoral degree and, after consultation with faculty, request appointment of a Doctoral Program Committee. This committee consists of at least three members from the student's major area of study and at least one member from each supporting area of study.

The Doctoral Program Committee conducts the qualifying examination and works with the student to design a plan of study that must include the following:

- 15 hours of business core course work to acquaint the student with the functional areas of business. These courses can be waived if the student has satisfactorily completed equivalent course work.
- An in-depth major concentration in the area of finance, management (organizational sciences) or marketing (minimum of 15 hours of 8000/9000-level courses).
- 2 support areas of at least 9 hours each, one of which must be taken outside the School of Business, or one support area of at least 12 hours. These supporting areas offer the student considerable latitude in identifying a course of study that can be tailored to the individual's interests and goals. If two support areas are selected, the student must also satisfy a 12-hour analytical tool requirement; if one support area is selected, the analytical tool requirement is 18 hours.
- Collateral requirements emphasizing analytical tools (proficiency in a foreign language does not fulfill the collateral requirements). This is a research methods and analyses sequence of at least 12 hours (at least 18 if only one support area), including appropriate courses in economics, mathematics, psychology, sociology, statistics or other areas deemed appropriate by the program committee.

- An ongoing seminar experience (each semester until successful completion of comprehensive examinations) that acquaints the student with current literature and research in his/her major area of interest. This seminar is in addition to other seminars offered departmentally (4 hours minimum).
- Dissertation (minimum 12 hours of 9090 credit).

### **Counting Credits**

The plan of study requirements listed above are independent of one another; courses taken to satisfy one requirement may not be used to satisfy any other requirement. Previous graduate work taken before admission to the PhD program may be used to satisfy these requirements if it is deemed appropriate by the student's program committee.

### **Residency Requirement**

In compliance with University regulations, the doctor of philosophy degree requires the completion of 72 semester hours of graduate work beyond the baccalaureate degree. Within the credit-hour requirement is the residency requirement. To satisfy the residency requirement, a student must complete at least 2 9-hour semesters or 3 6-hour semesters in an 18-month period at MU. All courses taken to satisfy the residency requirement must be MU courses approved for graduate credit and approved by the student's doctoral program committee. Correspondence and off-campus courses may not be counted toward the residency requirement. This program is designed for full-time students and typically requires a 4-year on-campus commitment.

### **Comprehensive Examination**

Typically, after completion of the course work specified on the plan of study, the student's doctoral program committee determines the student's readiness to undertake the comprehensive examination. The student must be enrolled at MU the semester s/he takes this examination.

The comprehensive examination consists of written and oral sections. Both sections must be completed within one month of each other, and at least seven months before a final dissertation defense. Successful completion of the comprehensive examination requires that the student's doctoral program committee vote to pass the student on the entire examination, both written and oral sections, with no more than one dissenting or abstaining vote. The student who fails this exam may not take a second comprehensive examination for at least 12 weeks. Failure to pass two successive comprehensive examinations automatically prevents candidacy.

### **Annual Review**

The progress of all PhD students is reviewed annually. This review considers student progress in course work and in teaching and research development. In addition, student performance on assistantship assignments is considered, as is student professional conduct and motivation for PhD study. The review is coordinated by the chair of the student's doctoral program committee. It includes a student self-

evaluation, input from faculty familiar with the student, discussion with the student and a written evaluation letter.

### **Courses**

See Business Administration (BUS AD) in the MyZou online system.

### **Finance Concentration, (PhD in Business)**

Robert J. Trulaske, Sr. College of Business  
403 Cornell Hall  
573-882-6272

#### **About the Finance Concentration for the PhD in Business**

<http://business.missouri.edu/1623/Default.aspx>

The departments of Finance, Management and Marketing in the Robert J. Trulaske, Sr. College of Business jointly offer the PhD in Business Administration with a Finance concentration. Program information, faculty and requirements are given for both the MBA and PhD programs under Business Administration.

### **Courses**

See Finance (FINANC) in the MyZou online system.

### **Management Concentration (PhD in Business)**

Robert J. Trulaske, Sr. College of Business  
403 Cornell Hall  
573-882-6556

#### **About the Management Concentration for the PhD in Business**

<http://business.missouri.edu/1621/Default.aspx>

The departments of Finance, Management and Marketing in the Robert J. Trulaske, Sr. College of Business jointly offer the PhD in Business Administration with a Management concentration. Program information, faculty and requirements are given for both the MBA and PhD programs under Business Administration.

### **Courses**

See Management (MANGMT) in the MyZou online system.

## Marketing Concentration (PhD in Business)

Robert J. Trulaske, Sr. College of Business  
403 Cornell Hall  
573-882-3282

### About the Marketing Concentration for the PhD in Business

<http://business.missouri.edu/1622/Default.aspx>

The departments of Finance, Management and Marketing in the Robert J. Trulaske, Sr. College of Business jointly offer the PhD in Business Administration with a Marketing concentration. Program information, faculty and requirements are given for both the MBA and PhD programs under Business Administration.

### Courses

See Marketing (MRKTNG) in the MyZou online system.

## Chemical Engineering Graduate Programs

David G. Retzloff  
Associate Professor & Director of Graduate Studies  
College of Engineering  
W2030 Lafferre Hall  
573-882-3563  
<http://che.missouri.edu/>

### About Chemical Engineering

Established in 1906, MU Chemical Engineering has a long standing commitment to provide quality undergraduate and graduate education. Our department serves the discipline well by providing state of the art research in many cutting edge fields including batteries, biochemical engineering, biomaterials, carbon, ceramics, catalysis, corrosion, electrochemistry, environmental sciences, ionic liquids, materials science, computational modeling & simulation, nanomaterials, nuclear materials, polymers, separations, solar energy, and surface science.

### Career Opportunities

The Chemical Engineering program develops versatile professionals who can excel in a variety of career environments. Our curriculum is focused on the basic and applied sciences, engineering topics, and problem solving and design. Our flexible program allows our graduates to move into traditional as well as non-traditional chemical engineering careers. Additionally, we build research and development skills by integrating research, scientific inquiry, and critical thinking into our curriculum.

Some of our graduates work in the traditional areas of chemical engineering such as the petroleum and chemical industries. Many graduates practice their profession in the areas of microelectronics, pharmaceuticals, materials, polymers, environmental protection, nuclear engineering, consumer products, or as managers in business, government careers, and engineering consultants. Still others enter into careers in academia.

### Degrees: MS and PhD in Chemical Engineering

The Department of Chemical Engineering offers graduate programs leading to the degrees of master of science (MS) and a doctor of philosophy (PhD).

### Faculty Research

Currently active research areas include batteries, biochemical engineering, biomaterials, carbon, ceramics, catalysis, corrosion, electrochemistry, environmental sciences, ionic liquids, materials science, computational modeling & simulation, nanomaterials, nuclear materials, polymers, separations, solar energy, and surface science.

### Facilities and Resources

There are excellent facilities for research students, including electron microscopy, ultra-high vacuum (UHV) surface science, atomic force microscopy, a heterogeneous catalysis and reaction kinetics laboratory, a heat and mass transport laboratory, an air pollution monitoring and control laboratory, a biochemical engineering laboratory, a computational laboratory, and a transport properties phenomena laboratory. Excellent library

facilities provide the latest domestic and international journals specific to chemical engineering and physical sciences research.

### **Internal Funding**

Research and teaching assistantships are available to qualified students for the entire year. The yearly stipend for graduate students ranges from \$17,500 to \$20,000, with a tuition waiver, depending on the student's terminal degree. Assistantships also include a tuition waiver and health insurance. Academically qualified students may receive additional scholarship awards. Grant research assistantships and some industrial and Graduate School fellowships may also be available. Extremely well-qualified students may be eligible for the Robert and Dorcas Holtzsmith Graduate Fellowship.

RA and TA appointments allow for 12 credit hours of advanced study each semester. The applicant's academic record and research potential determine the financial assistance offered. Students who receive financial assistance are expected to continue their appointment during the summer session as well, as these appointments are year long positions.

## **Chemical Engineering Faculty**

Baolin Deng

C. W. LaPierre Professor and Chair, PhD, Johns Hopkins University, environmental nanotechnology, membrane separation, and contaminant transformation.

Sheila Baker

assistant professor, PhD, SUNY-Buffalo, ionic liquids, nanoparticles, solar energy.

Matthew Bernards

assistant professor, PhD, University of Washington, biomaterials, proteins & cells at interfaces, and tissue engineering.

Paul C. H. Chan

director of undergraduate studies, associate professor, PhD, California Institute of Technology, chemical reactor and process dynamics.

Thomas R. Marrero

professor, PhD, University of Maryland, coal log transport, mass transport.

Patrick J. Pinhero

professor, PhD, University of Notre Dame, corrosion & aging, surface science, catalysis, solar nanoantenna, neutron damage, nuclear materials, and materials science.

David G. Retzloff

director of graduate studies, , associate professor, PhD, University of Pittsburgh, mathematical analysis and modeling of chemical processes.

Galen J. Suppes

J. C. Dowell Professor, PhD, Johns Hopkins University, batteries, nanoparticles, fuels, fuels processing, alternative fuel sources.

Yangchuan Xing

associate professor, PhD, Yale University, PEM fuel cells, electrocatalysis, photocatalysis, electrochemical engineering.

John M. Gahl

adjunct professor, PhD, Texas Tech University, Materials, plasma and nuclear science.

William A. Jacoby

adjunct associate professor, PhD, University of Colorado, Environmental processing, bioremediation.

## Application and Admission Information

Rita Preckshot

Administrative Assistant to the Director of Graduate Studies

Department of Chemical Engineering

W2030 Lafferre Hall

Columbia, MO 65211

573-882-3563

## Master of Science in Chemical Engineering

Admission Criteria

- Minimum GPA: 3.0
- Minimum **GRE** scores:  
*When did you take the GRE?*

Prior to August 1, 2011	1100
On or After August 1, 2011	300

Consideration is given to grade trends, performance in the area of chemical engineering and mathematics and other criteria bearing on a student's probable success in graduate study. Selected students with less than a 3.0 overall GPA may be considered on a probationary basis. Financial support is competitive and requires a minimum 3.0 GPA. Graduates holding degrees in physics, chemistry, applied mathematics and related fields also may be considered for candidacy, but are required to take additional course work.

## Required Application Materials

### [To the Graduate School](#)

All required Graduate School documents

### [To the Chemical Engineering Program](#)

Resume

Statement of Purpose

3 letters of reference

GRE scores (a minimum of GRE score of 1100 is necessary for admission consideration)

### **Financial Aid from the Program**

All applicants are considered for internal assistantships, fellowships, and other funding packages. Support is awarded based on availability and qualifications of applicant.

### **MS Plan of Study**

An individual program of a minimum of 30 semester hours is required and includes seminars, advanced courses in chemical engineering, physical and chemical sciences, mathematics and no more than nine hours of research or other unscheduled work. No foreign language or collateral field is required. A thesis is required and a candidate will complete the master's program by passing an examination in defense of the thesis.

### **Doctorate in Chemical Engineering**

Required Application Materials

#### **[To the Graduate School](#)**

All required Graduate School documents

#### **[To the Chemical Engineering Program](#)**

Resume

Statement of Purpose

3 letters of reference

GRE scores

### **PhD Plan of Study**

An applicant for the PhD program must take a qualifying examination and a comprehensive examination. Twenty-one semester hours of course work beyond the MS degree is required. Before being admitted to candidacy and proceeding to prepare a dissertation, the student must pass a comprehensive examination. The exam involves a project to be completed within a 30-day period, requiring original and creative work in delineating a research problem of some substance. A dissertation is required of all candidates. A final oral examination will be held where the candidate defends their dissertation.

### **Courses**

See Chemical Engineering (CH ENG) in the myZou online system.

## Chemistry Graduate Programs

College of Arts and Science  
125 Chemistry Building  
573-882-8374

<http://chemistry.missouri.edu/>

The Department of Chemistry offers graduate degrees in all areas of modern chemistry, including analytical, biological, computational, inorganic, materials, organic, physical and radiochemistry.

### Resources and Facilities

The department has well-equipped laboratories that contain state-of-the-art instrumentation and computing facilities for research. Major instrumentation includes NMR, X-ray diffraction and mass spectrometry centers, as well as a nuclear/radiochemistry lab. Other campus facilities widely used by the department include a central instrument shop, electronics shop, campus computing center and a 10-megawatt nuclear reactor. The latter provides a high neutron flux for radioisotope production, neutron activation analysis and neutron diffraction studies.

### Internal Funding

Fellowships and teaching and research assistantships are available for highly qualified applicants. Application forms are available on the department's website and should be submitted by February 1.

### Chemistry Faculty

Jerry L. Atwood  
chair, Curators' Professor, PhD, University of Illinois at Urbana-Champaign.

Timothy E. Glass  
associate professor, PhD, Stanford University.

John E. Adams  
associate chair for undergraduate studies, Curators' Teaching Professor, PhD, University of California-Berkeley.

Gary Baker  
assistant professor, PhD, the State University of New York at Buffalo.

Lesa J. Beamer  
associate professor, PhD, Johns Hopkins University.

Jason W. Cooley  
assistant professor, PhD, Arizona State University.

Carol A. Deakyne  
associate professor, PhD, Princeton University.

Kent S. Gates  
Schludt Professor of Chemistry, PhD, Northwestern University.

Rainer E. Glaser  
professor, PhD, University of California-Berkeley.

C. Michael Greenlief  
associate professor, PhD, University of Texas-Austin.

Michael Harmata  
Rabjohn Distinguished Professor of Chemistry, PhD, University of Illinois at Urbana-Champaign.

M. Frederick Hawthorne  
professor, PhD, University of California, Los Angeles.

Timothy J. Hoffman  
associate professor, PhD, University of Missouri.

Renee D. Jiji  
assistant professor, PhD, Arizona State University.

Silvia S. Jurisson  
professor, PhD, University of Cincinnati.

Steven W. Keller  
Associate chair for undergraduate studies, associate professor, PhD, University of California-Berkeley.

Mark Lee  
assistant professor, PhD, University of California, Los Angeles.

Susan Z. Lever  
associate professor, PhD, North Carolina State University.

J. David Robertson  
professor, PhD, University of Maryland, College Park.

Thomas Sewell  
professor, PhD, Oklahoma State University-Stillwater.

Paul R. Sharp  
professor, PhD, Massachusetts Institute of Technology.

John J. Tanner  
professor, PhD, Brown University.

Donald L. Thompson  
professor, PhD, University of Arkansas.

Justin R. Walensky  
assistant professor, PhD, University of California, Irvine.

### **Graduate Degree Requirements**

Students are strongly encouraged to visit the Department of Chemistry website for the most up-to-date information.

### **Entrance Criteria**

An applicant for graduate work in chemistry should have either a Bachelor of Arts or Bachelor of Science degree in chemistry, essentially equivalent to those awarded at MU, with at least a B average or a score at the 70th percentile on the GRE general test.

### **Examinations**

All new graduate students in chemistry are required to take Departmental placement/qualifying examinations in all core areas (analytical, inorganic, organic and physical) prior to registration. Students must qualify in two areas. A student who performs well on an exam, as determined by the department's Graduate Program Committee, will be considered to have qualified in that area. Students who do not qualify in particular areas, via the placement examinations, must pass appropriate advanced-level courses in those areas to qualify. An A or B grade is required in these courses for qualification.

### **Research, Advising, and the Committee**

Affiliation with research adviser must be made by the end of the first semester through a formal process that is part of CHEM 7087. Student progress in the degree program is evaluated annually in May, using the Graduate Student Progress System through the Graduate School. In addition, the student's Graduate Program Committee meets with the student and their research adviser after their first summer of research to review degree progress. At this time the student will have submitted a formal Research Progress Report to their committee for consideration. All students are expected to attend Departmental Colloquium and Organic/DyNAMITE seminars.

### **Doctorate in Chemistry**

Admission Contact Information  
Jerry Brightwell (gradchem@missouri.edu)  
125 Chemistry; Columbia, MO 65211  
573-884-6832

## Admission Criteria

Fall deadline: February 1

Spring deadline: October 15

- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
100	600

- Minimum **GRE** scores:

<i>When did you take the GRE?</i>	Verbal	Quantitative	Analytical
Prior to August 1, 2011	450	600	3.0-4.0
On or After August 1, 2011	150	150	3.0-4.0

## Required Application Materials

### [To the Graduate School](#)

All required Graduate School documents

### [To the Chemistry Program](#)

Departmental Application (PDF)

GRE scores

3 letters of recommendation

Transcripts from each college and university you have attended

Statement of Purpose, which should include a summary of why you are interested in pursuing an advanced chemistry degree, a brief description of your previous research experiences, the specific area of chemistry you are interested in pursuing, and your future career goals and plans in the chemistry field.

## Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

## Doctoral Degree Requirements

The following is a brief synopsis of the general degree requirements; please see the Department of Chemistry website for complete details:

1. Students must take at least 5 8000-level courses.
2. Students must pass 5 written cumulative exams within a specific time frame.
3. Students must present at least one departmental seminar.
4. Students are required to complete a comprehensive exam, which includes written and oral elements, within a specific time frame.

5. Students must submit and defend a dissertation describing the results of successful and original research in one of the branches of chemistry.

## **Courses**

See Chemistry (CHEM) in the myZou online system.

# Civil and Environmental Engineering

April Klug [kluga@missouri.edu](mailto:kluga@missouri.edu)

Graduate Program Coordinator

573-882-4442

573-882-4784 (fax)

<http://engineering.missouri.edu/civil/>

## About the Program

Civil engineering education at MU began in 1856 with the establishment of the first Chair of Civil Engineering. Graduate programs offered by the department prepare students for leadership positions in academia, research and advanced practice engineering careers. Major program areas include structural mechanics, structural engineering and materials, geotechnical and geoenvironmental engineering, environmental engineering, hydrology and water resources engineering and transportation engineering

## Areas of Study

Structural Mechanics, Structural Engineering and Materials. Emphasis areas: fracture and failure of composites, model-based simulation, inelastic response of materials and structures, bridge engineering, linear and nonlinear structural dynamics, explosion resistant structural design, timber engineering, microstructure of porous materials, concrete and aggregate durability, advanced fiber reinforced composites for construction and nondestructive structural health evaluation

Environmental Engineering. Emphasis areas: water pollution control, water purification, wastewater treatment, the disposal of residues from these processes and hazardous and solid waste management. Other areas of research include the application of physical, chemical and microbiological principles to design of water supply systems, pollution control facilities and contaminant transport through soils.

Geotechnical and Geoenvironmental. Emphasis areas: strength, deformation and flow properties of earthen materials and application of this understanding to foundation engineering, slope stability analyses, earth structures design, and geoenvironmental challenges. Research areas include: unsaturated soil mechanics, soil improvement techniques, geosynthetics, landfills and waste containment, stabilization and maintenance of earth slopes, in situ soil cleanup technologies, geotechnical earthquake engineering, nondestructive geophysical technologies for subsurface applications, satellite – and ground-based remote sensing risk analysis and reliability-based design.

Transportation Engineering. Emphasis areas: traffic engineering, intelligent transportation systems, highway safety, network modeling and simulation, geographic information systems, security and evacuations, transportation planning, traffic flow theory, highway design, intersection operations, bicycle and pedestrian facilities, infrastructure management, driver behavior, airport engineering, transportation legal issues, artificial intelligence and advanced computing applications in transportation.

Hydrology and Water Resources. Emphasis areas: hydrologic, hydraulic, regulatory/public policy and geographic information system applications for transportation, surface water quality and storm water management and decision making.

## **Facilities and Resources**

The department has laboratories for experimental research in structural engineering, materials, geotechnical and geoenvironmental engineering, environmental engineering, and transportation engineering.

*Structural Testing.* Several computer-controlled electrohydraulic testing machines and associated instrumentation are available in the high-bay structural engineering and materials engineering laboratories. The laboratories are serviced by a 5-ton overhead crane. An additional structural testing facility located south of the campus houses a 100-foot by 20-foot structural floor with anchor points on a 4-foot-square grid. This high-bay facility is serviced by a 10-ton overhead crane. There is also a materials laboratory for concrete mix design and evaluation.

*Geotechnical Testing.* The laboratories house state-of-the-art permeability, consolidation, triaxial, geosynthetics, soil dynamics and unsaturated soil mechanics testing equipment and is home to the Missouri Soil Characterization Laboratory. Additional laboratories include facilities and equipment for large-scale model testing of slopes, piles and other geotechnical systems, including a 10-acre geotechnical experiment site.

*Environmental Testing Labs.* The Laboratories are supplied with analytical equipment for the complete physical, chemical and microbiological analysis of water and waste water.

*Transportation Laboratory.* The laboratories include capabilities in advanced surveillance and video image processing, transportation modeling and simulation, Geographical Information Systems, traffic management and control, driver behavior, and safety.

## **Funding**

In addition to fellowships supported by the National Science Foundation (NSF), the US Environmental Protection Agency, Federal Highway Administration and other governmental agencies, several graduate assistantships are available each year. The assistantships are primarily research appointments; however, the Department does make a limited number of teaching assistantship appointments. Most assistantships offer tuition waivers and health insurance.

## **Civil and Environmental Engineering Faculty**

Mark R. Virkler  
chair, professor, PhD, PE, University of Virginia. Transportation engineering.

Hani Salim  
associate professor, PhD, West Virginia University. Structural engineering.

Shankha K. Banerji  
professor emeritus, PhD, PE, University of Illinois. Environmental Engineering.

John J. Bowders  
William A. Davidson Professor of Civil Engineering, director, Institute for Interdisciplinary Geotechnics and the Soil Characterization Lab, PhD, PE, The University of Texas at Austin. Geotechnical engineering.

Zhen Chen  
C.W. LaPierre Professor, PhD, University of New Mexico. Engineering mechanics.

Thomas E. Clevenger  
director, Missouri Water Resources Research Center, professor, PhD, University of Missouri-Columbia.  
Environmental engineering.

Baolin Deng  
C.W. LaPierre Professor, director of graduate studies, PhD, Johns Hopkins University. Environmental  
engineering.

Praveen Edara  
assistant professor, PhD, Virginia Polytechnic Institute and State University. Transportation engineering.

V. S. Gopalratnam  
professor, PhD, PE, Northwestern University. Structural/materials engineering.

Enos Inniss  
assistant professor, PhD, Notre Dame. Environmental Engineering.

R. David Hammer  
professor emeritus, PhD, University of Tennessee. Soil science.

Zhiqiang Hu  
assistant professor, PhD, PE, University of Connecticut. Environmental engineering.

Sam A. Kiger  
C.W. LaPierre professor, director, Explosion Resistant Design Center, PhD, PE, University of Illinois. Theoretical  
and applied mechanics.

William J. Likos  
associate professor, PhD, Colorado School of Mines. Geotechnical engineering.

J. Erik Loehr  
James C. Dowell Associate professor, PhD, PE, The University of Texas at Austin. Geotechnical engineering.

Timothy C. Matisziw  
assistant Professor, PhD, The Ohio State University. Transportation engineering

Jay B. McGarraugh  
professor emeritus, PhD, PE, Purdue University. Structural engineering.

Charles J. Nemmers  
director, Transportation Infrastructure Center, PE, Marquette University.

Sarah Orton  
assistant professor, PhD, The University of Texas at Austin. Structural engineering.

Brent Rosenblad  
associate professor, PhD, The University of Texas at Austin. Geotechnical engineering.

Carlos Sun

associate director, Transportation Infrastructure Center, director of graduate studies, associate professor, PhD, PE, University of California-Irvine. Transportation engineering, JD, University of Missouri.

Kathleen M. Trauth

associate professor, PhD, PE, Texas Tech University. Water resources/environmental engineering.

Glenn Washer

associate professor, PhD, PE, Johns Hopkins University. Nondestructive evaluation/structural engineering.

## Master of Science in Civil Engineering

April Klug [kluga@missouri.edu](mailto:kluga@missouri.edu)

Graduate Program Coordinator

573-882-4442

573-882-4784 (fax)

<http://engineering.missouri.edu/civil/>

### Admission Criteria

- Priority admission and funding consideration are given to applications received by February 15/September 15. Applications submitted after February 15/September 15 will be considered, with preference going to those received by May 1/December 1. Prospective students applying after May 1/December 1 will be considered for fall/spring admission on a case by case basis.
- Minimum GPA: 3.0 in last 2 years of coursework\*

**\*Note:** Lower than 3.0 GPA require special action and substantiation such as good test scores on the GRE or other recognized examinations.

- BS in engineering. Applicants with BS degrees in related fields may be considered for admission. If admitted, non-engineers are required to complete remedial courses as determined by their adviser and advisory committee.
- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
79	550

- Minimum **Academic IELTS** scores:

<b>Overall Score</b>	<b>6.0</b>
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- Typical Minimum **GRE** scores\*:

<i>When did you take the GRE?</i>	Verbal + Quantitative	Analytical
Prior to August 1, 2011	None	None
On or After August 1, 2011	None	None

\*GRE test is required; no minimum score set; typical acceptance score are around 1100 for Verbal + Quantitative and between 4.0 and 5.0 for Analytical.

## Required Application Materials

### [To the Graduate School:](#)

All required Graduate School documents

### *To the Civil Engineering Program:*

Upload all of the following items to the Apply Yourself/Graduate School System. DO NOT send any hard copies to the Civil Engineering department.

- 3 Letters of Recommendation
  - At least two from a faculty member who has taught or advised you
- GRE scores
- Resume
- Statement of Purpose
  - See guidelines: <http://engineering.missouri.edu/civil/degree-programs/statement-of-purpose.php>

## Financial Aid from the Program

If you wish to be considered for financial aid, please complete the financial aid section of the departmental application.

Electronic submissions of all application materials are preferred; however, paper submittals will be accepted.

## Master of Science Plan of Study

Students are accepted for advisement upon CE Graduate Admissions Committee review. The degree designation at the master's level is Master of Science (M.S.) in Civil Engineering. To obtain a master's degree you must take a total of 31 hours for graduate credit, at least 15 hours of which must be 8000-level courses or research (CV\_ENG 8990) with the remainder being either 7000 or 8000-level courses and a one hour graduate seminar. For most students this means taking eight (8) 3-hour courses at the appropriate level, completing six (6) hours of thesis research (CV\_ENG 8990), and enrolling in the 1-hour seminar associated with your specialty area. Students should consult with their academic adviser to ensure all requirements are satisfied.

## Thesis and Examination

A final oral examination is required of all master's candidates. Approximately two weeks before this examination, a candidate must submit to an examining committee a thesis, a formal report or a design of professional quality applying the knowledge gained in course work to the solution of an engineering problem. Students who receive research appointments or traineeships are required to submit a thesis. Formal or design report is at the discretion of the adviser.

## Doctorate in Civil Engineering

April Klug [kluga@missouri.edu](mailto:kluga@missouri.edu)  
Graduate Program Coordinator  
573-882-4442  
573-882-4784 (fax)  
<http://engineering.missouri.edu/civil/>

### Admission Criteria

- Priority admission and funding consideration are given to applications received by February 15/September 15. Applications submitted after February 15/September 15 will be considered, with preference going to those received by May 1/December 1. Prospective students applying after May 1/December 1 will be considered for fall admission on a case by case basis.
- Minimum GPA: 3.0 (both MS and BS degrees)

- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
79	550

- Minimum **Academic IELTS** scores:

<b>Overall Score</b>	<b>6.0</b>
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- Typical Minimum **GRE** scores\*:

<i>When did you take the GRE?</i>	Verbal + Quantitative	Analytical
Prior to August 1, 2011	None	None
On or After August 1, 2011	None	None

\*GRE test is required; no minimum score set; typical acceptance score are around 1100 for Verbal + Quantitative and between 4.0 and 5.0 for Analytical.

### Required Application Materials

#### [To the Graduate School:](#)

All required Graduate School documents

#### *To the Civil Engineering Program:*

Upload all of the following items to the Apply Yourself/Graduate School System. DO NOT send any hard copies to the Civil Engineering department.

- 3 Letters of Recommendation
  - At least two from a faculty member who has taught or advised you
- GRE scores
- Resume
- Statement of Purpose
  - See guidelines: <http://engineering.missouri.edu/civil/degree-programs/statement-of-purpose.php>

### Financial Aid from the Program

If you wish to be considered for financial aid, please complete the financial section of the departmental application.

Electronic submissions of all application materials are preferred; however, paper submittals will be accepted.

### **Qualifying for Candidacy**

Students are accepted for advisement upon CE Graduate Admissions Committee review. Formal acceptance to the PhD program is based on a qualifying examination, administered by faculty members in the student's area of concentration, during the first year of post-master's work. In cases where students desiring PhD candidacy take a master's degree with thesis option in this department, the master's oral examination *may* be combined with the qualifying examination at the discretion of the advisor and dissertation committee.

### **Plan of Study**

PhD programs are committee administered and tailored to fit the needs of each individual student. A minimum of 72 credit hours, including the credit hours taken during the MS program beyond the bachelor's degree, are required. Students who received the MS degree from other than MU may transfer up to 30 hours of credit from their MS degree. The candidate must pass a comprehensive examination and submit and defend a dissertation at a final oral examination.

### **More Information**

More information about the Department of Civil and Environmental Engineering and further details about specific programs and application materials may be obtained from the department's website: <http://www.civil.missouri.edu>.

### **Courses**

See Civil Engineering (CV ENG) in the myZou online system.

## Classical Studies

College of Arts and Science  
405 Strickland Hall  
573-882-0679  
<http://classics.missouri.edu/>

The Department of Classical Studies offers graduate work leading to the master of arts degree in classical languages with emphasis on Latin, Greek or both classical languages. The PhD degree in classical studies requires work in both Greek and Latin.

### Career Preparation

Graduate programs in classical studies are designed to prepare students for professional careers as teachers and scholars of classical literature and ancient civilization. Besides acquiring expertise in the traditional classical disciplines, students are encouraged to become familiar with other areas, such as later literatures and cultures, on which the classical tradition has exercised a decided effect.

### Facilities and Resources

Because MU is a contributing member of the American Academy in Rome and the American School of Classical Studies in Athens, the facilities of those organizations are available to graduate students from Missouri. Study in Athens or Rome is often feasible after the completion of a master's degree. On campus, students have at their disposal the resources of Ellis Library, which are excellent in the major fields of Greek and Latin languages and literatures, and in ancillary fields. This collection is supplemented by the department's Walter Miller Collection. The Museum of Art and Archaeology contains many items of interest to classicists.

### Classical Studies Faculty

Dennis E. Trout  
chair, associate professor, PhD, Duke University. Late antiquity, Roman history, epigraphy.

Barbara P. Wallach  
associate professor, PhD, University of Illinois. Classical rhetoric and oratory, Lucretius, Cicero.

Daniel M. Hooley  
professor, PhD, University of Minnesota. Classical tradition, translation studies.

John M. Foley  
professor, PhD (English and comparative literature), University of Massachusetts. Oral tradition, Homer.

David J. Schenker  
associate professor, PhD, University of California, Berkeley. Greek drama, Plato.

Charles Saylor  
professor emeritus, PhD, University of California, Berkeley. Roman comedy, Latin literature.

Theodore A. Tarkow  
professor, PhD, University of Michigan. Greek drama, Greek lyric poetry.

Raymond Marks  
associate professor, director of graduate studies, PhD, Brown University. Roman epic, post-Augustan poetry.

Anatole Mori  
associate professor, PhD, University of Chicago. Hellenistic poetry, epic.

Richard Foley  
assistant professor, PhD, Northwestern University. Ancient philosophy, David Hume

Michael Barnes  
assistant teaching professor, PhD, University of Missouri. Greek and Roman epic, classical tradition.

Karen Acton  
visiting assistant professor, PhD, University of Michigan. Latin Republican and early Imperial Roman history.

Darcy Krasne  
visiting assistant professor, PhD, University of California, Berkeley. Roman poetry, Greek and Roman mythology.

## Master's in Classical Studies

### Admission Contact Information

Daniel Hooley (hooleyd@missouri.edu)  
405 Strickland Hall, Columbia, MO 65211  
573-882-0679

### Admission Criteria

Fall deadline: April 1, Deadline for teaching assistantship applicants: February 1  
Spring deadline: November 1

- Minimum GPA: 3.0 during last 2 years
- Bachelor of arts degree from an accredited college or university
- Reading knowledge of Greek and/or Latin
- GPA of at least 3.0 in Greek and/or Latin courses
- Minimum GRE score: no minimum
- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

### Required Application Materials

#### *To the Graduate School*

- 3 letters of recommendation
- Statement of interest
- 10-20 pp. writing sample
- Transcripts
- GRE scores

Application materials that cannot be submitted directly to the Graduate School may be sent to the Classical Studies program.

### **Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

### **Plan of Study**

The minimum course of study is 30 semester hours. Of these, at least 12 hours in Greek, Latin, classics and related fields must be at the 8000/9000 level or above, and at least six hours must be in courses in other departments. At least 21 of the 30 hours must be completed in Greek, Latin or classics in the department. Classics 7000 is required of all students during their first year of graduate study. Students who wish to have a minor may take 10-12 hours in another department or complete an ancient studies minor.

### **Languages**

Some command of German and French (or Italian) is helpful from the outset, and MA candidates are required to have demonstrated proficiency in one of the languages by the time that they begin their second year of graduate study. Degree candidates take MA language tests (Latin and/or Greek) in the 2nd or 3rd year of graduate studies.

### **Written Works and Oral Examination**

A final oral examination is given by a faculty committee selected by the student in consultation with the adviser. This examination will include defense of either the thesis or a compiled portfolio of seminar papers. If the former option is elected, the thesis will account for six credit hours.

## **Doctorate in Classical Studies**

### **Admission Contact Information**

Daniel Hooley (hooleyd@missouri.edu)  
405 Strickland Hall, Columbia, MO 65211  
573-882-0679

### **Admission Criteria**

Fall deadline: April 1, Deadline for teaching assistantship applicants: February 1  
Spring deadline: November 1

- MA with a major in Greek, Latin or classics, or the equivalent of a minimum of 21 hours of graduate work in the language(s). Reading knowledge of Greek and Latin and a reading knowledge of German and French (or Italian)
- Minimum GRE score: no minimum

- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

## Required Application Materials

### [To the Graduate School](#)

- 3 letters of recommendation
- Statement of interest
- 10-20 pp. writing sample
- Transcripts
- GRE scores

Application materials that cannot be submitted directly to the Graduate School may be sent to the Classical Studies program.

### Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

### Language Requirements

Proficiency in one of the modern foreign languages (i.e., French, German, or Italian) must be demonstrated by the time of registration for the second year of graduate study; proficiency in the second language must be demonstrated by the time of registration for the third year.

### Plan of Study

A minimum of 72 hours of graduate credit is required for the PhD degree. A maximum of 30 hours of this total may consist of hours transferred from the MA degree. At least 21 additional hours must be taken in the department at the graduate level. A minimum of eight hours of dissertation credit is required. At least two courses in related ancient fields, one of which must be in ancient history or classical archaeology, must be taken at the graduate level. Proficiency in Greek and Latin composition must be demonstrated at some point by course work or examination.

### Minors and Areas of Concentration

All candidates must include in their plan of study a minor or area of concentration consisting of at least 12 hours at the graduate level outside the department. Suggested areas include ancient history, classical archaeology, the classical tradition, late antiquity, the oral tradition, rhetoric, or romance languages. A structured minor in ancient studies also is available.

### Examinations

All candidates are required to complete two four-hour qualifying examinations, one in Greek and one in Latin.

### **Comprehensive: Written**

After completing residency, language, and course requirements, PhD candidates must pass the comprehensive examination consisting of four written examinations in the following fields: Greek literature, Latin literature, special author or topic, and area of concentration or minor field. With the approval of the adviser and the candidate's committee, extra course work beyond the required 12 hours may be substituted for the written examination in the area of concentration or minor field. Ancient Studies minors are automatically excused from the examination in the minor field.

### **Comprehensive: Oral**

The oral comprehensive examination is taken only after the candidate successfully passes the written examinations.

### **Dissertation**

Within one month of completion of both written and oral comprehensive exams, or at the beginning of the Fall term if the exams are taken in May, the candidate must meet with the doctoral program committee to obtain formal approval of the dissertation topic. Continuous enrollment must be maintained while the candidate completes the dissertation. At least eight hours of dissertation credit are required. A final oral defense of the dissertation is held upon completion of the dissertation.

### **Courses**

See Classical Studies in the myZou online system.

See Classics (CLASS)

See Greek (GREEK)

See Latin (LATIN)

## Communication Graduate Programs

College of Arts and Science

108 Switzler Hall

573-882-4431

<http://communication.missouri.edu/>

### About the Program

The program takes a theoretical, critical, and experimental approach to the study of communication. The MA program is designed to further enhance the understanding of the communication process by allowing students to study various aspects of communication in greater depth. Graduates are employed in corporate communication, educational and instructional media, sales, research and consulting. The doctoral program is designed for those interested in an academic career of college or university teaching and research. Doctoral students graduate with a strong theoretical background in interpersonal, mass media, organizational, or political communication.

### Funding

Graduate students are eligible to apply for fellowships and graduate teaching assistantships. Funding is normally limited to doctoral students.

### Communication Faculty

Michael J. Porter

chair, associate professor, PhD, University of Iowa. Television audience analysis, visual literacy, structure of television narratives and communication education.

Mitchell S. McKinney

director of graduate studies, associate professor, PhD, University of Kansas. Political communication, mass media and politics, presidential rhetoric, rhetorical criticism.

Jennifer Stevens Aubrey

associate professor, PhD, University of Michigan. Mass media effects, mass media theory, and gender images in the media.

Debbie S. Dougherty

associate professor, PhD, University of Nebraska. Organizational communication, qualitative research methods, destructive workplace processes, social class.

Rebecca Meisenbach

associate professor, PhD, Purdue University. Organizational rhetoric, identity, nonprofit communication.

Lissa Behm-Morawitz

assistant professor, PhD, University of Arizona. Mass media effects, new media, gender, and race/ethnicity.

Melissa Click

assistant professor, PhD, University of Massachusetts, Amherst. Media and cultural studies, feminist and queer theory, audience and fan studies.

Colleen Colaner

assistant professor, PhD, University of Nebraska. Family communication, Interpersonal communication, communication and identity.

Collin Hesse

assistant professor, PhD, Arizona State University. Interpersonal communication, communication and physiology, emotions, quantitative research methods.

J. Brian Houston

assistant professor, PhD, University of Oklahoma. Political communication, community resilience.

Ben Warner

assistant professor, PhD, University of Kansas. Political communication, political extremism, new technology in campaign contexts.

David Dunkin

adjunct professor, MA, University of Missouri. Television production and technology.

Michael W. Dunn

adjunct professor, PhD, University of Michigan. Broadcast management and programming.

Roger Karwoski

adjunct professor, MS, University of Wisconsin, Platteville. Programming and production.

Loren Reid

professor emeritus, PhD, University of Iowa. Rhetoric and public address.

## Master of Arts in Communication

### Admission Contact Information

Martha Crump (crumpm@missouri.edu)  
108 Switzler Hall; Columbia, MO 65211  
573-882-4432

## Admission Criteria

Fall deadline: January 15

Minimum GPA: 3.0

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	600

Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal	Quantitative	Analytical
Prior to August 1, 2011	500	500	4.0
On or After August 1, 2011	153	144	4.0

Students who do not have an undergraduate degree in communication may be required to take course work beyond the required 30 hours to provide necessary background.

## Required Application Materials

[To the Graduate School:](#)

All required Graduate School documents

[To the Communication Program:](#)

- Departmental application
- 3 letters of recommendation
- Example of scholarly writing (no more than 25 pages)
- Transcripts
- Statement of purpose (no more than 500 words) explaining the student's intended field of study, professional goals and other reasons for wishing to enter the graduate program
- GRE scores
- Resume

## Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

## Plan of Study

Not more than 6 semester hours of the required 30 hours of credit may be transferred from another university or campus of the University of Missouri System. There is no language requirement. For the assignment of advisers, students should see the director of graduate studies.

## Thesis and Nonthesis Options

The master of arts degree may be completed under either a thesis option, approved by an advisory committee, or a non-thesis option (with a comprehensive examination and project). Both plans require a minimum of 30 hours of graduate credit, including at least 15 hours of course work at the 8000/9000 level. MA candidates may take up to 6 hours of credit for their MA project for the non-thesis option. MA candidates take a minimum of 6 hours in 9090 Thesis Research for the thesis option.

## Credit Hours for Production

No more than 9 hours of course work or independent study in television production or scriptwriting will be accepted for the MA degree. Students may opt to take more production hours but they may not be included in the candidate's plan of study.

## Length of Study

The MA must be completed in 8 years.

## Doctorate in Communication

### Admission Contact Information

Martha Crump (crumpm@missouri.edu)  
 108 Switzler Hall; Columbia, MO 65211  
 573-882-4432

### Admission Criteria

Fall deadline: January 15  
 Minimum GPA: 3.0 preferred  
 Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	600

Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal	Quantitative	Analytical
Prior to August 1, 2011	500	500	4.0
On or After August 1, 2011	153	144	4.0

Admission procedures for students who have completed the MA degree elsewhere and wish to become PhD candidates are identical to the departmental requirements outlined for MA candidates. Only those applicants who show evidence of a clear likelihood of successful doctoral work are admitted.

### Required Application Materials

#### [To the Graduate School](#)

All required Graduate School documents

#### [To the Communication Program](#)

GRE scores  
 Departmental Application  
 3 letters of recommendation  
 Example of scholarly writing (no more than 25 pages)  
 Transcripts  
 Statement of Interest  
 Resume

### Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

### Plan of Study

Before registering for courses, the student must confer with their temporary adviser until a permanent adviser is assigned.

## Committee and Qualifying Requirements

A doctoral program committee approves the student's course of study and determines if the student has passed the qualifying requirements during the spring semester of the first year. Only after passing the qualifying requirements will the student be admitted to candidacy for the PhD degree in communication.

For a student whose MA program was done at MU, the six-hour comprehensive examination or the MA thesis defense constitutes the qualifying process. The student may proceed beyond the MA degree only upon the recommendation of the MA examining committee.

## Courses

The PhD candidate must take at least 48 hours of course work beyond the MA. Students with an MA degree in another discipline may be required by their doctoral program committee to complete additional course work. Course work will include 36 hours within the department. The following courses are required:

- Introduction to Graduate Studies (8110)
- Seminar in Quantitative Research Methods (8120)
- Seminar in Communication Theory (9170)
- Research (comprehensive exams) (9050)
- One of the following:
  - Seminar in Qualitative Research Methods (8130)
  - Rhetorical Criticism (8160)
  - Seminar in Television Criticism (8150)
  - Content Analysis (8140)

Including the courses listed above, students must complete a total of 15 hours of research methods classes. Nine of these hours may be taken outside the department.

Students must also complete a 6-hour collateral field block outside the department representing a coherent unit of study and relates to an area of major research interest.

## Comprehensive Examination

The comprehensive examination, including a 30-page literature review, a 15-hour written exam and an oral defense, will cover all areas of studies in the field. During the semester students take comprehensive exams they enroll in Communication 9050.

## Dissertation

The doctoral dissertation is written under the direction of the candidate's adviser. The dissertation and the final oral examination on the dissertation complete the requirements for the PhD in communication. Students take a minimum of six hours of Communication 9090 Dissertation Research.

## Length of Study

Course work and comprehensive exams for the PhD must be completed in five years. The dissertation must be completed within five years of completing comprehensive examinations. Satisfactory rate of progress means making adequate progress to meet these time requirements. Students working at a typical pace should be able to complete the doctorate in 4 years beyond their master's.

## Courses

See Communication (COMMUN) in the myZou online system.

# Communication Science and Disorders Graduate Programs

Julie Aston  
301 Lewis Hall  
573-884-2940

<http://shp.missouri.edu/csd/>

## About Communication Science and Disorders

The field of Communication Science and Disorders, or CSD, encompasses the related but distinct disciplines of speech-language pathology (SLP), audiology and speech, language, and hearing sciences (SLHS). Speech-language pathologists and audiologists are professionals educated in human communication and its disorders. Speech-language pathologists diagnose and treat disorders such as delayed language development, stuttering, articulation and voice problems. Audiologists specialize in the prevention, identification, assessment and rehabilitation of hearing disorders. Speech, language, and hearing scientists are professionals concerned with exploring trends in the communication sciences, as well as developing strategies for improving or adding to the knowledge base within the fields of speech-language pathology and audiology.

MU established its first independent master's and doctoral programs in speech-language pathology and audiology in the 1940s. The MU master's degree program in speech-language pathology has been continuously accredited by the Council on Academic Accreditation in Audiology and Speech-Language Pathology since 1966. An active local chapter of the National Student Speech Language Hearing Association is sponsored by the program.

## Degrees Offered

- MHS in Communication Science and Disorders, with an emphasis area in Speech-Language Pathology
- PhD in Communication/Communication Science and Disorders Focus

The master's degree prepares students for national certification in speech-language pathology and for professional clinical practice in both health care and educational settings. The doctoral degree involves a program of research and advanced study beyond the clinical master's degree in preparation for a career in research and college teaching or administration.

## Career Opportunities

A wide variety of work settings are available to speech-language pathologists and audiologists. Possibilities range from hospitals, clinics, and rehabilitation centers to schools, colleges and universities, government agencies, and private practice. Speech, language, and hearing scientists work primarily in colleges and universities, research labs and government agencies. Professional certification in speech-language pathology and audiology is awarded by the American Speech-Language-Hearing Association (ASHA). The master's degree, which is the entry-level degree for speech-language pathologists, typically takes two to three years beyond the undergraduate degree depending on the student's

undergraduate field of study. Students wishing to pursue a career in audiology will need to attend a program that offers clinical doctorate in audiology (AuD), the entry-level degree for audiologists.

### **Facilities and Resources**

The department uses many cooperative facilities in Columbia, both on and off the MU campus, as clinical and scientific resources. Among these are the University Hospitals and Clinics, Rusk Rehabilitation Center, Ellis Fischel Cancer Center, Truman Memorial Veterans Hospital, Adult Day Connection, Assistive Technology Evaluation Center, Thompson Center for Autism and Neurodevelopmental Disorders, Missouri Rehabilitation Center, and Columbia Public Schools. Other cooperative facilities are available both within and outside the state. The department operates the MU Speech and Hearing Clinic, a diagnostic and treatment center serving individuals with communication disorders from the campus and the community, the MU Robert G. Combs Language Preschool, and the Accent Modification and Pronunciation Program. In addition, there are many research opportunities for students in the laboratories of individual faculty where they may gain experience with sophisticated equipment for research and clinical evaluation in normal and disordered speech, language, and hearing. A master's thesis option is available to students interested in conducting research.

### **Funding**

All graduate students are considered for available scholarships, fellowships, work-study grants, traineeships and graduate teaching and research assistantships

### **Communication Science and Disorders Faculty**

Barbara Brinkman

director of the MU Speech and Hearing Clinic, clinical associate professor, MA, University of Colorado. Speech-language pathology.

Linda S. Day

research associate professor emerita, PhD, University of Missouri. Speech-language pathology, language science.

Mary K. Fagan

assistant professor, PhD, University of Missouri. Speech-language pathology.

Dana R. Fritz

coordinator of the MU Accent Modification and Pronunciation Program, clinical associate professor, PhD, University of Missouri. Speech-language pathology.

Judith C. Goodman

chair, associate professor, PhD, University of Chicago. Language science.

Greta Hull

director of the Robert G. Combs Language Preschool, clinical instructor, MHS, University of Missouri. Speech-language pathology.

Leanna B. Lawrence

clinical assistant professor, MHS, University of Missouri. Speech-language pathology.

Teresa E. Lever

assistant professor, PhD, East Carolina University. Speech-language pathology.

Barbara A. McLay

program director and director of graduate studies, clinical associate professor, MA, University of Iowa. Audiology.

Mary Ann Scheneman

clinical assistant professor, M Ed, University of Virginia. Speech-language pathology.

Stacy A. Wagovich

associate professor, PhD, University of Georgia. Speech-language pathology.

## Master of Health Science, Emphasis in Speech-Language Pathology

### Admission Contact Information

Julie Aston [mucsd@missouri.edu](mailto:mucsd@missouri.edu)

301 Lewis Hall; Columbia, MO 65211

573-884-2940

### Admission Criteria

Deadline for Summer entrance: January 15

Deadline for Spring entrance (for applicants without prerequisite course work in CSD only): October 15

- Undergraduate GPA: 3.0 (on last 60 hours of course work)
- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
100*	600

\*Minimum TOEFL (iBT) score of 100, with minimum score of 28 on speaking

- Minimum **GRE** scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative
Prior to August 1, 2011	1000 (preferred)
On or After August 1, 2011	300 (preferred)

## **Required Application Materials**

### [To the Graduate School](#)

Online Graduate School application including:

- 3 letters of recommendation submitted online
- Statement of Interest submitted online
- Resume submitted online
- Official GRE scores
- Official Transcripts (including ALL college credits)

### [To the Communication Science and Disorders Program](#)

Personal interviews may be requested

## **Admission Process**

Acceptance for admission to master's level study is determined by the Departmental Graduate Admissions Committee.

## **Prerequisite Course Work**

If the student's undergraduate major is in a field other than communication disorders, the MHS program will require a minimum of three and a half years. The student will spend the first year and a half of the master's program completing prerequisite course work prior to beginning clinical practicum and graduate course work.

## **Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program Web site or ask the program contact for details.

## **Plan of Study**

MHS candidates are required to complete a minimum of 48 semester hours in graduate-level courses with grades of B- or higher. No fewer than 24 hours must be earned in 8000/9000-level course work offered by the program. A maximum of 10 hours in clinical practicum courses may be counted toward the 48-hour requirement.

## **Thesis Option**

The student may choose the thesis option for the master's degree; work toward the thesis may count for up to six hours of credit.

## Examination

During the final semester of course work, we expect master's degree candidates to achieve a passing score on the Praxis Examination in Speech-Language Pathology. This exam serves as the comprehensive examination for the degree. See the program's online Graduate Student Handbook for additional information.

## Doctorate in Communication Science and Disorders

### Admission Contact Information

Judith Goodman, PhD [mucsd@missouri.edu](mailto:mucsd@missouri.edu)  
 309 Lewis Hall; Columbia, MO 65211  
 573-882-8407

### Admission Criteria

Deadline for Fall entrance: January 15

Deadline for Summer entrance: January 15

- Minimum 3.4 GPA (A=4.0) for the last 60 hours of college/university course work
- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
100*	600

\*Minimum TOEFL (iBT) score of 100, with minimum score of 28 on speaking

- Minimum **GRE** scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative
Prior to August 1, 2011	1100 (preferred)
On or After August 1, 2011	306 (preferred)

Note: Acceptance for admission to doctoral studies is determined by a selection committee. Only those students who show clear likelihood for success in doctoral-level studies and research are admitted.

## Required Application Materials

### [To the Graduate School](#)

- Online Graduate School application
- 3 to 5 letters of recommendation submitted online
- Letter of intent submitted online
- A personal curriculum vitae submitted online
- Official GRE scores
- Official transcripts (including ALL college credits)

[To the Communication Science and Disorders Program](#)

- At least 1 example of the applicant's scholarly work (a thesis or substantial paper)
- Personal interviews may be requested

**Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program Web site or ask the program contact for details.

**Plan of Study**

Students who are admitted must pass a qualifying examination, complete a minimum of 60 credit hours beyond the master's degree (typically, 12 hours of research design and statistics; 30 hours of didactic course and seminar credit, including at least 12 hours in CSD and at least 12 outside the department; and research credit hours to bring the total to 60), pass written and oral comprehensive examinations and successfully complete and defend a dissertation.

Each individual student's doctoral studies program is designed in consultation with the student's major adviser and must be approved by a faculty advisory committee.

**Courses**

See Communication Science/Disorders (C S D) in the myZou online system.

## Computer Science Graduate Programs

Director of Graduate Studies  
Department of Computer Science  
201 Engineering Building West  
University of Missouri  
Columbia, MO 65211  
<http://engineering.missouri.edu/cs/>

### About the Computer Science Program

The Department of Computer Science is a fast-growing and research-active entity at the University of Missouri. In fact, it is the hub of all campus computer science activities that involve well established research programs in computational biology and bioinformatics, cyber-security, distributed and mobile computing, geospatial information mining and retrieval, intelligent systems, multimedia communications, large dataset scientific visualization, networking, spoken language processing and human-machine interfaces, wireless sensor networks, etc. Additionally, members of the department lead the University's institutional efforts in developing infrastructure for bioinformatics, computational biology, and high-performance computing and networking. Our major research projects are heavily funded by both federal agencies and industries. While National Science Foundation (NSF), National Institute of Health (NIH), National Geospatial-Intelligence Agency (NGA), Department of Energy (DoE), and Department of Defense (DoD) are examples for federal funding, Microsoft and Monsanto are representatives for industrial funding.

### Degrees Offered

The Department of Computer Science offers the Master of Science in Computer Science, the Doctor of Philosophy in Computer Science, and the Master of Engineering graduate programs of study. The graduate degree programs prepare prior recipients of four-year BS degrees in computer science or closely related areas for further study at the doctoral level or for successful careers as specialized computer professionals. The PhD programs are a professional research degree designed to prepare students for advanced professional careers, including college teaching and research, as well as research and development in industrial, government, and nonprofit organization. Specialized training is available through close interaction with the faculty in their active research fields.

### Research Facilities

Research facilities are well established around faculty members' expertise in bioinformatics and computational biology, biological and biomedical image analysis, graphics, mobile computing, artificial intelligence, multimedia, networking, human-computer interaction, information management systems, and computer science foundations. These facilities are clustered in core laboratories for bioinformatics, multimedia and visualization, video processing, spoken-language processing, mobile networking and communications, wireless sensor networks, high-performance computing, cyber security, and medical informatics.

In addition to online subscriptions to technical publications, the Ellis Library has over 3.2 million books, and the Engineering Library houses specialized collections in computer science. Students, faculty and staff members have access to a wide range of computing resources within the research laboratories and distributed throughout the campus including a large-scale cluster computing environment. The educational computing environment

includes student laboratories for programming and Web access comprised of Windows, Mac OS, Linux, and UNIX systems.

### **Faculty Research Areas**

The faculty members of the Department of Computer Science participate in the full spectrum of undergraduate and graduate education. Graduate education, in addition to direct involvement in projects funded by the federal government and industries, places equal emphasis on interdepartmental and cross-college research. The aim is to produce computer scientists who can function well in interdisciplinary research teams. Close integration of research with education is an invariant goal in the department's graduate programs. It emphasizes in-depth studies that can also be tailored to fit graduate students' individual interests.

*Bioinformatics and Computational Biology:* Genomic and postgenomic data analysis, intelligent information systems for physicians, protein structure modeling and prediction, semantic interoperability of biological information and computations; structure-function relationships; deconvolution of complex phenotypes.

*Distributed Computing and Networking:* Wireless networking, mobile computing, sensor networks, multimedia communication, distributed systems, cybersecurity, Internet and Web technology, e-learning.

*Human-Computer Interaction and Intelligent Systems:* Spoken-language processing, multimedia, visualization, graphics, information fusion, intelligent health-care systems, artificial intelligence.

*Information and Data Management Systems:* Information retrieval; digital library; database; data mining and knowledge recovery from geospatial, medical, and biological databases.

*Theory:* Algorithms and complexity, formal methods, programming language semantics.

### **Financial Aid**

Teaching and research assistantships are available for qualified students in the graduate programs. The Department also offers fellowships (including US Department of Education GAANN Fellowships and Shumaker Bioinformatics Fellowships) to a limited number of new PhD students. In addition, there are other fellowships and scholarships available at the university level.

Teaching assistantships and research assistantships are available with tuition waivers in the Department. Requests for financial aid are examined at the same time as those for graduate admission, which are due before January 15 for fall semester and October 1 for spring semester.

### **Student Group**

The department's graduate enrollment is about 100, with approximately half enrolled in the PhD program. Advised by the Director of Graduate Studies, the CS Graduate Student Council is an active body that works with the department and provides social support as well as student input for the continuous improvement of the graduate programs in computer science.

## **Computer Science Faculty**

Dong Xu  
chair, professor; PhD, University of Illinois at Urbana-Champaign.

Yi Shang

director of graduate studies, professor; PhD, University of Illinois at Urbana-Champaign.

Michael Jurczyk

director of undergraduate studies, associate professor; PhD, University of Stuttgart, Germany.

Chi-Ren Shyu

professor; PhD, Purdue University; director, MU Informatics Institute.

Wenjun (Kevin) Zeng

professor; PhD, Princeton University.

Yunxin Zhao

professor; PhD, University of Washington.

Xinhua Zhuang

professor; PhD equivalent, Peking University, China.

Jianlin Cheng

associate professor; PhD, University of California, Irvine.

Ye Duan

associate professor; PhD, State University of New York at Stony Brook.

William L. Harrison

associate professor; PhD, University of Illinois at Urbana-Champaign.

Toni Kazic

associate professor; PhD, University of Pennsylvania.

Kannappan Palaniappan

associate professor; PhD, University of Illinois at Urbana-Champaign.

Youssef G. Saab

associate professor; PhD, University of Illinois at Urbana-Champaign.

Gordon K. Springer

associate professor; PhD, Pennsylvania State University.

Jeffrey Uhlmann

associate professor; PhD, University of Oxford (UK).

Dmitry Korin

assistant professor; PhD, University of New Brunswick, NB, Canada.

Dale Musser

associate teaching professor; PhD, Ohio State University; director, Information Technology program.

Markita Price  
associate teaching professor; PhD, University of Minnesota.

Michela Becchi  
adjunct assistant professor; PhD, Washington University in St. Louis.

Guilherme DeSouza  
adjunct associate professor; PhD Purdue University.

James M. Keller  
adjunct professor; PhD, University of Missouri.

Satish Nair  
adjunct professor; PhD, Ohio State University.

Mihail Popescu  
adjunct assistant professor; PhD, University of Missouri.

Marjorie Skubic  
adjunct professor; PhD, Texas A&M University.

## Application Procedures

Application for admission to a graduate degree program in CS involves submitting a formal application through the Graduate School's online application for admission ([http://gradschool.missouri.edu/prospective/prospective\\_apply.htm](http://gradschool.missouri.edu/prospective/prospective_apply.htm)). An application must be accompanied by an application fee. In addition, the applicant must have the following original paperwork sent *directly* from the originating institutions to the Graduate School:

1. Official transcripts from ALL institutions attended
2. Official GRE score report from Educational Testing Service in New Jersey (and TOEFL or IELTS scores for international applicants)

The following supplemental materials must be uploaded in the online application:

1. Your resume
2. A personal goal statement indicating why you feel prepared to pursue the degree program and why you want to pursue this degree (uploaded in your online application)
3. Minimum course requirement form if you do not have a BS in computer science (uploaded in your online application)
4. Three letters of recommendation from professors who know your abilities that must address your ability and readiness to pursue a graduate program in computer science (submitted by your references directly to your online application)

In order to be considered for admission in a particular semester, the Director of Graduate Studies, according to the following deadlines, must receive all required paperwork:

Fall admission: Applications and all paperwork must be received by March 1<sup>st</sup>. *NOTE:* If applying for financial assistance in the department, applications and all paperwork must be received by *January 15<sup>th</sup>*.

Spring admission: Applications and all paperwork must be received by October 1<sup>st</sup>.

*Note:* Copies of the required documents (transcripts, GRE scores, etc.) cannot be accepted in lieu of the official reports from the originating institutions. Copies of these records can be submitted for evaluation, but any decision on admission is non-binding until the official records have been received.

All MU students (current or prior) must meet the same requirements as external students. The only difference is that MU grad students file one of the following forms (in lieu of an MU Application Form):

- a) Current Non-Degree Graduate Students: *Change of Division, Degree, Program, Emphasis, or Advisor* form,
- b) Current graduate students in another department: *Change of Division, Degree, Program, Emphasis, or Advisor* form (same as a)
- c) Previous graduate students returning to same program: ReActivation form.

These forms can be obtained from the CS Graduate Advisor's office in 244 EBW or the Graduate School, 210 Jesse Hall.

## Admission

Students applying to the CS graduate program must have a sufficient background in mathematics and computer science to be able to enroll in and perform satisfactorily in the CS courses numbered 7000 and above. Students applying for admission must fulfill the following minimum requirements that include material contained in specific CS courses or their equivalent taken at another institution. It is preferred that students have earned a BS degree in Computer Science. However, students from other disciplines meeting the minimum requirements will be considered for admission.

1. Proficiency in a procedural programming language equivalent to that gained by taking CS 1050 and 2050 (Algorithm Design & Programming I and II). The preferred programming language is Java. This material includes fundamental algorithm design and data structures.
2. Three semesters of formal course work in Calculus (Math 1500, 1700 and 2300 at MU).
3. Knowledge of statistics equivalent to that contained in Stat 4710 (Introduction to Mathematical Statistics).
4. Knowledge of discrete mathematical structures equivalent to that covered in Math 2320 (Discrete Mathematical Structures).
5. Knowledge of computer system architecture equivalent to that contained in CS 3270 (Introduction to Digital Logic) and CS 3280 (Assembly Languages and Computer Organization).
6. Four courses with grades B or better equivalent to those defined as follows:
  - a. CS 4050 (Design and Analysis of Algorithms I)
  - b. CS 4320 (Software Engineering) or 4330 (Object-Oriented Design)
  - c. CS 4410 (Theory of Computation I), 4430 (Compilers I), or 4450 (Principles of Programming Languages)
  - d. CS 4520 (Operating Systems I)
7. A GPA of at least 3.0 (A=4.0) for the last half of the undergraduate curriculum.
8. Acceptable Minimum **GRE** scores (taken within last 5 years): 25 percentile on the verbal part, 80 percentile on the quantitative part, and 4 on the analytical writing part.
9. For those not schooled in English as their native language, a recommended minimum **TOEFL** score (taken within last two years):

Internet-based test (iBT)	Paper-based test (PBT)
90	577
or IELTS:	6.5-7.0

10. For admission into the PhD program, the student must have either:
- A Bachelor's degree in Computer Science with a GPA of 3.4 (out of 4.), or
  - An equivalent of a Master's degree in Computer Science, or a closely related field, with a GPA of least 3.4 (out of 4.0).

## Graduation Requirements

Students must complete the following requirements in order to earn the respective graduate degrees from the CS department. The Master of Science degree program has both a thesis and a non-thesis option, which can be chosen by the student after consultation with their selected adviser.

## MS Degree

All students completing a master's degree must fulfill the following minimum requirements:

- The student must earn a minimum of 30 credit hours of course work *approved* by the CS Department. This course work must include at least 15 credit hours of course work numbered 8000 or above (CS 8990 Thesis Research credit is counted in the required 15 credit hours, but CS 8980 is not).
- The overall GPA of course work taken as an enrolled graduate student must be at least 3.0 (out of 4.0).
- Courses taken in other departments (up to 6 credit hours) will be considered for approval as part of a student's MS program and the approval is sought prior to the student undertaking the course work.
- A 4000-level course listed in the minimum requirements for graduate admission cannot be taken at the equivalent 7000 level as part of the required hours for the MS, ME, or PhD programs.
- Non-Thesis Option:**  
In order to complete the non-thesis option, the student must complete an independent project under a faculty adviser approved by the department. This project is carried out by enrolling in CS 8980 (Non-Thesis Research) for at least one hour of credit. This project is documented and presented to a faculty committee of at least three graduate faculty members and defended in a public defense as part of a final oral examination. The CS 8980 course grade is assigned by the student's faculty adviser upon the conclusion of the oral examination. This course is graded on an S/U basis and cannot be used to increase the student's overall GPA in graduate work. In this option, at most, 3 credit hours of Research, Reading, and/or Problem courses (such as CS 8980, 8990, 8085) can be counted toward the 30-hour MS graduate requirements.
- Thesis Option:**  
In order to complete the thesis option, the student must complete an independent project under a faculty adviser approved by the department. This project is carried out by enrolling in CS 8990 (Thesis Research) for at least three hours of credit. A maximum of six credit hours of CS 8990 can be counted toward the required 30 credit hours for the MS degree program. The thesis project is documented in a formal thesis, presented to a faculty committee of at least three graduate faculty members (one of whom is a faculty member from another department) and defended in a public defense as part of a final oral examination. The CS 8990 course grade(s) is/are assigned by the student's faculty advisor upon the conclusion of the oral examination.

CS 8990 is graded on an S/U basis and cannot be used to increase the student's overall GPA in graduate work. In this option, at most 9 credit hours of Research, Reading, and/or Problem courses (such as CS 8980, 8990, 8085) can be counted toward the 30-hour MS graduate requirements.

7. Seminar Attendance: The approval of the M3 form is tied to the attendance records for the department's seminar series. MS students are required to satisfy the seminar attendance requirement in at least *two* semesters prior to graduation. Attendance at half of the approved CS seminars per semester meets this requirement.
8. M Forms: By the end of the second semester in the program, the M1 *Plan of Study* form should be prepared and submitted, with the aid of a faculty adviser in the department. An adviser should be selected during the student's first semester. If a thesis option is chosen, the student should form a thesis committee and submit the M2 *Request for Thesis Committee* form. The M3 *Report of Master's Examining Committee* form is submitted after the thesis or project defense during the final semester.
9. Annual Review Requirement of the Graduate School. All graduate students are required to complete the Annual Review Requirement by updating their information in the Graduate Student Progress System by the end of their second, fourth, etc. semesters of their program. The CS department requires that this report be attached to each M form before being signed by the student's adviser and the CS director of graduate studies.

## ME Degree

The requirements for the Master of Engineering degree are the same as those for the Master of Science (MS) in Computer Science degree with the following exceptions:

1. The student must complete at least 36 hours of graduate courses.
2. A minimum of 30 credit hours must be earned from University of Missouri System institutions.
3. At least 21 hours must be courses offered by the computer science department.
4. At least 15 hours must be 8000 level courses offered by the computer science department (excluding CS 8085).
5. CS 8980, CS 8990, and CS 9990 may not be taken.
6. At most 3 hours of CS 8085 may be taken.
7. No final examination is required.

The entrance requirements for the MS and ME degrees are the same.

## PhD Degree

All students completing a PhD degree must fulfill the following minimum requirements:

1. Complete all of the course work requirements of the Master's degree in CS or have an MS degree in CS from another institution. The student must have maintained an overall GPA of at least 3.4/4.0 in their prior graduate level course work (excluding research and problems courses).
2. Pass a qualifying examination to be admitted to candidacy in the CS PhD program.

3. Earn a minimum of 72 credit hours of course work and research past the student's BS degree.
4. Pass a comprehensive examination covering their areas of expertise.
5. Complete a doctoral dissertation on a topic approved by the candidate's advisory committee.
6. Defend the dissertation in a final oral examination.
7. Have at least one journal paper submitted, accepted or published, as approved by the adviser.
8. Seminar Attendance: The approval of the D4 form is tied to the attendance records for the department's seminar series. PhD students are required to satisfy the seminar attendance requirement in at least *four* semesters prior to graduation. Attendance at half of the approved CS seminars per semester meets this requirement.
9. D Forms: By the end of the second semester in the program, ideally, the D1 *Qualifying Exam Results & Doctoral Committee Approval* and the D2 *Plan of Study for the Doctoral Degree* forms should be submitted to the Graduate School. The D3 form *Doctoral Comprehensive Examination Results* is submitted when the student has completed the Comprehensive Exam. The dissertation defense is followed by submission of the D4 *Dissertation Defense* form.
10. Annual Review Requirement of the Graduate School: All graduate students are required to complete the Annual Review Requirement by updating their information in the Graduate Student Progress System by the end of their second, fourth, etc. semesters of their program. The CS Department requires that this report be attached to each D form before being signed by the student's adviser and the CS Director of Graduate Studies.

\*Students cannot take CS 9990 before passing the PhD qualifying exam.

#### **Credit toward a Second Master's Degree:**

A student who has completed one Master's degree at MU or elsewhere may present, upon the recommendation of the student's adviser and approval by the Director of Graduate Studies and the Graduate School, a maximum of six hours of credit earned in the previous program toward a second Master's degree.

#### **Courses**

See Computer Science (CMP SC) in the MyZou online catalog.

## Diagnostic Medical Ultrasound (MHS) Graduate Program

409 Lewis Hall

573-884-2994

Diagnostic Medical Ultrasound website:

<http://shp.missouri.edu/dmu/index.php>

The Master of Health Science in Diagnostic Medical Ultrasound is offered by the [School of Health Professions](#), Department of Cardiopulmonary and Diagnostic Sciences. The Diagnostic Medical Ultrasound Program (DMU) is a 35-40 hours per week, 52 weeks per academic year clinical education program.

### Future Certification and Careers

Upon successfully completing the requirements of the DMU Program, MHS Graduates will be eligible to apply to the American Registry of Diagnostic Medical Sonographers (ARDMS) for registry in Abdomen, Obstetrics and Gynecology, Vascular Technology and Cardiac Ultrasound.

### Financial Aid

Please contact the financial aid office. Some programs require an application and extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

### Diagnostic Medical Ultrasound Faculty

Moses Hdeib, MD, PhD, RDMS, RDCS, RVT; Clinical Professor, Program Director, Director of Graduate Studies.

Ecaterina Mariana Hdeib, MA, RDMS; Clinical Assistant Professor.

Douglas W. Clem, PhD, RDCS, RVT Clinical Associate Professor/Clinical Coordinator

Sharlette Anderson, MHS, RDMS, RVT, RDCS; Clinical Assistant Professor / Clinical Coordinator

Kelsy Merideth, RDMS, RVT; Clinical Assistant Professor / Clinical Coordinator

### Master of Health Science Degree in Diagnostic Medical Ultrasound

#### Admission Contact Information

Dr. Moses Hdeib [hdeibm@health.missouri.edu](mailto:hdeibm@health.missouri.edu)

409 Lewis Hall

Columbia, MO 65211

573-884-2994

## Admission Criteria

Deadline for spring entrance: December 1

- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)	Test of Written English (TWE)
55	550	4.5

- Minimum GRE score: check with Program Director of Graduate Studies
- Undergraduate GPA minimum: 3.00 (A=4.0) for the last 60 hours of college work

Potential applicants who have all the prerequisites for admission to the program should submit their application early (before November) in the fall of the academic year in order to be considered for early acceptance with start in the following spring semester. Please contact the director of graduate studies.

## Required Application Materials

### [To the Graduate School:](#)

All required Graduate School documents  
GRE scores

### [To the Diagnostic Medical Ultrasound Program:](#)

Departmental Application  
Transcripts

## Degree Requirements

Graduate students must maintain a 3.0 grade point average in all courses required for the degree. Failure to achieve a semester cumulative grade point average of 3.0 in required courses will result in delay of graduation or dismissal from the program. Students are expected to maintain full-time enrollment in the sequenced curriculum and complete the degree requirements as outlined in the course of study.

## For More Information

Moses Hdeib, MD, PhD, RDMS, RDCS, RVT  
Diagnostic Medical Ultrasound  
409 Lewis Hall  
Columbia, MO 65211  
573-884-2994 or send an e-mail Dr. Hdeib: [hdeibm@health.missouri.edu](mailto:hdeibm@health.missouri.edu)

## Courses

See Diagnostic Medical Ultrasound (DMU) in the MyZou online system.

## Dispute Resolution Master of Laws (LLM) Degree

Center for the Study of Dispute Resolution  
206 Hulston Hall  
573-882-2020  
E-mail: [mulawcdr@missouri.edu](mailto:mulawcdr@missouri.edu)  
Web: <http://law.missouri.edu/csdr/llm>

### About the Dispute Resolution (LLM) Program

Students in the Master of Laws (LLM) dispute resolution program have a unique opportunity to gain a deeper understanding of theoretical, policy, design and ethical issues in dispute resolution. They study with leading dispute resolution scholars who generate important academic work influencing dispute resolution theory and practice around the world. Small class sizes create a close community with faculty and students.

Our program blends theoretical analysis, practitioner skills, and systems design work in courses usually limited to LLM students. Our diverse student body — by age, race, nationality, legal background — enriches the level of discussion, inside and outside the classroom.

The LLM meets the needs of those with backgrounds as advocates, neutrals, law-trained court administrators and government agency personnel, among others.

### Graduate Degrees Offered

- Master of Laws in Dispute Resolution
- LLM students can earn dual degrees (MA and PhD) from the School of Journalism.

The program also is affiliated with MU's Center for the Study of Organizational Change and Truman School of Public Affairs, with an opportunity to pursue a certificate in Public Affairs in conjunction with the LLM.

The MU School of Law offers a [juris doctor \(JD\) program](#), which has its own admission process.

### Dispute Resolution Faculty

Paul H. Ladehoff  
director of the LLM Program in Dispute Resolution and director of Campus Mediation Services, adjunct professor, JD, University of Nebraska.

Robert G. Bailey  
director of the Center for the Study of Dispute Resolution and assistant dean; JD, University of Missouri.

Rafael Gely  
associate dean for academic affairs, James E. Campbell Missouri Endowed Professor, senior fellow at the Center for the Study of Dispute Resolution; JD, PhD, University of Illinois.

John Lande

Isidor Loeb Professor, senior fellow at the Center for the Study of Dispute Resolution; JD, Hastings College of Law; PhD, University of Wisconsin-Madison.

Ilhyung Lee

Edward H. Hinton Professor, senior fellow at the Center for the Study of Dispute Resolution; JD, Boston College.

Richard C. Reuben

James Lewis Parks Professor, senior fellow at the Center for the Study of Dispute Resolution; JD, Georgia State University; JSD, Stanford University.

Rodney J. Uphoff

Elwood L. Thomas Missouri Endowed Professor, senior fellow at the Center for the Study of Dispute Resolution, director of the University of Missouri South Africa Educational Program; JD, University of Wisconsin.

James Westbrook

Earl F. Nelson and James S. Rollins Professor Emeritus; JD, Duke University; LLM, Georgetown University.

Carli N. Conklin

associate professor, senior fellow at the Center for the Study of Dispute Resolution; JD, University of Virginia.

Dennis D. Crouch

associate professor, senior fellow at the Center for the Study of Dispute Resolution; JD, University of Chicago.

S.I. Strong

associate professor, senior fellow at the Center for the Study of Dispute Resolution; JD, Duke University; PhD, University of Cambridge.

James Levin

associate director of the Center for the Study of Dispute Resolution, adjunct professor; JD, Northeastern University.

## **Dispute Resolution Courses**

Following are the required core courses for the LLM together with some recommended electives relevant to the dispute resolution field. Students choose electives from the law school and other MU departments according to their interests and statement of purpose for enrolling in the program.

Required Core Courses (12-13 credits):

Dispute System Design (3)

LLM Arbitration Seminar (3)

LLM Major Research Project (3)

Non-Binding Methods of Dispute Resolution (3-4)

Recommended Electives:

Conflict and Conflict Management (3)

Cross-Cultural Dispute Resolution (3)

Emotional Intelligence in Law (1)

Group Dynamics and Conflict Resolution (3)\*

- LLM Externship (1-3)
- LLM Independent Study (1-3)
- Mediation Clinic (1)
- Organizational Analysis and Change (3)\*
- Organizational Dynamics and Leadership (3)\*
- Practicum on Dispute Resolution Training and Education (1-2)
- Public Policy Dispute Resolution (3)

*\*Courses offered by MU's Truman School of Public Affairs.*

## Master of Laws in Dispute Resolution

### Admission Contact Information

Karen Neylon (neylonk@missouri.edu)  
206 Hulston Hall; Columbia, MO 65211  
573-882-2020

### Admission Criteria

Applications are reviewed on a rolling basis as space is available.

- Minimum GPA: 2.5 in JD program; 3.0 for graduate or advanced degree programs
- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
100	600

- JD or its foreign equivalent; in exceptional cases, applicants may be admitted without a law degree if they have substantial experience with dispute resolution.
- Significant legal experience preferred

### Required Application Materials

- All required Graduate School documents
- Professional resume (upload through online application or mail directly to program)
- Statement of purpose (upload through online application or mail directly to program)
- 2 letters of recommendation (use the form provided through our site)
- Financial support application form (if applicable)

Please visit <http://law.missouri.edu/csdr/lm/admissions.html> for application instructions.

### Financial Aid from the Program

The LLM Program offers limited departmental financial support – the Rankin M. Gibson LLM Scholarship and the LLM Fellowship. The program does not offer graduate teaching or graduate research assistantships. The [application form](#) for the department funding explains the two different awards and provides instructions on how to apply.

## **Degree Requirements**

The LLM program requires 24 credit hours of study. Required courses account for 12-13 credits and the remaining 11-12 credits are elective courses. 6 of the elective credits can be taken in other MU departments (see the list of courses). To graduate, a student must have completed all graduate work attempted at MU with a grade point average of 3.0 (A=4.0) or better.

With full-time study, students should complete degree requirements within 1 academic year of matriculation. Part-time students in a continuous course of study could probably complete the program within 2 academic years. All degree requirements must be completed within a period of 3 years beginning with the first semester of enrollment in the program.

## **More Information**

Application materials and additional information about the program are available on the [LLM website](#). Students also can write or call the LLM Program Coordinator, Center for the Study of Dispute Resolution, 206 Hulston Hall, Columbia, MO 65211, 573-882-2020.

## **LLM Courses**

See Law (LAW) in the myZou online system.

## Economics Graduate Programs

College of Arts and Science  
118 Professional Building  
573-884-7989  
573-882-2697 (fax)

### About the Program

The Department of Economics offers graduate work leading to the master of arts and the doctor of philosophy degrees. The program prepares students for careers in government and private enterprises, colleges, universities and research institutions through training in the techniques and applications of economic analysis, interpretation of data and the formulation and appraisal of public policy. Admission may be granted at any time to qualified students.

### Degrees Offered

- MA and PhD in economics
- Cooperative Dual Degrees: MA in applied mathematics and economics, MA in economics and statistics

### Specializations

The department offers fields of specialization in many traditional fields in economics with particular strength in monetary and financial economics, industrial organization, labor economics, and education economics.

### Dual Degrees

The Departments of Mathematics and Economics offer selected students the option of obtaining dual degrees: an MS degree in applied mathematics and an MA degree in economics. The Departments of Economics and Statistics offer selected students the option of obtaining dual degrees: an MS degree in statistics and an MA degree in economics within an integrated program. Whereas obtaining separate master's degrees would nominally require a minimum of 60 credit hours of course work, students enrolled in the dual master's degree program may obtain degrees based on 48 credit hours of course work. Students may be able to complete degree requirements within 2½ years.

### Financial Support

Student financial support is available to graduate students as teaching and research assistantships, allocated based on promise and performance in the program. In addition, direct fellowship support may also be available to selected candidates. Tuition is waived for students who receive assistantship or fellowship support. January 1 is the deadline for applications for assistantships for the school year beginning in August, but earlier submissions are desirable. Late applications will be accepted subject to the availability of openings and funds.

### More Information

For specific information and/or application forms, please write the Graduate Secretary, 118 Professional Building, Columbia, MO 65211, or send an e-mail or visit our website.

## **Economics Faculty**

David M. Mandy

chair, professor; PhD, University of Illinois at Urbana-Champaign. Econometrics, microeconomic theory and industrial organization.

Xinghe Wang

director of graduate studies, professor; PhD, University of Iowa. Microeconomics, industrial organization and mathematical economics.

Ronald M. Harstad

J. Rhoads Foster Professor in the Economics of Regulated Industries; PhD, University of Pennsylvania. Game theory, auctions, laboratory economics, value elicitation.

Joseph H. Haslag

executive director, Economic & Policy Analysis Research Center, professor  
Kenneth Lay Chair in Economics; PhD, Southern Methodist University, Monetary theory.

Christopher Otrok

Sam Cook Chair in Economics; professor; PhD, University of Iowa. Macroeconomics, asset pricing, time series econometrics.

Jeffrey D. Milyo

professor; PhD, Stanford University. Applied microeconomics, health, law, political economics, public economics.

Peter R. Mueser

professor; PhD, University of Chicago. Labor economics.

Shawn X. Ni

professor; PhD, University of Minnesota. Macroeconomic theory.

Michael Podgursky

professor; PhD, University of Wisconsin-Madison. Labor economics and economics of education.

Saku Aura

associate professor; PhD, Massachusetts Institute of Technology. Public economics, household decision making.

Emek Basker

associate professor; PhD, Massachusetts Institute of Technology. Industrial organization.

Oksana Loginova

associate professor; PhD, Duke University. Microeconomic theory and industrial organization.

Neil A. Raymon

associate professor; PhD, University of Colorado-Boulder. Macroeconomic theory.

Vitor Trindade

associate professor; PhD, University of California, San Diego. International economics and development economics.

Chao Gu

assistant professor; PhD, Cornell University. Macroeconomics and monetary economics, banking, economic theory.

Yu-Chin Hsu

assistant professor; PhD, University of Texas. Econometrics.

Cory Koedel

assistant professor; PhD, University of California, San Diego. Labor economics, economics of education, public economics, applied microeconomics.

Dara N. Lee

Assistant professor; PhD, Boston University. Labor economics, law and economics, economics of crime.

J. Isaac Miller

assistant professor; PhD, Rice University. Theoretical and applied time series, financial econometrics, energy economics.

Richard L. Wallace

chancellor and professor emeritus; PhD, Vanderbilt University. Public utility regulation and health economics.

W. Whitney Hicks

professor emeritus; PhD, Stanford University. Economic development.

Maw Lin Lee

professor emeritus; PhD, University of Wisconsin. Applied econometrics.

Carmen F. Menezes

professor emeritus; PhD, Northwestern University. Microeconomic theory.

Charles G. Geiss

associate professor emeritus; PhD, University of North Carolina. Mathematical economics.

Donald J. Schilling

associate professor emeritus; PhD, University of North Carolina. International finance.

## **Master of Arts in Economics**

Admission Contact Information

Lynne Riddell [riddell@missouri.edu](mailto:riddell@missouri.edu).

118 Professional Bldg.

Columbia, MO 65211

573-884-7989

### **Admission Criteria**

Fall deadline: January 1

Spring deadline: October 1

Bachelor's degree in any field

Minimum **GRE** scores:

<i>When did you take the GRE?</i>	Verbal	Quantitative
Prior to August 1, 2011	400	700
On or After August 1, 2011	146	155

Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
79	550

Minimum **Academic IELTS** scores:

Listening	
Reading	
Writing	
Speaking	
<b>Overall score</b>	<b>6.0</b>

Students with a bachelor's degree in any field may apply for admission into the master's program. Applicants are admitted on the basis of an undergraduate record, with particular emphasis on performance in economics, mathematics, and statistics courses, performance on the GRE, and letters of recommendation. Although the graduate program assumes mathematical background through calculus (normally two or three semesters of college calculus), as well as undergraduate economics training, applicants with more limited backgrounds may be accepted into the program. Such individuals will be assigned supporting course work, some or all of which may be counted toward fulfilling requirements.

### **Required Application Materials**

#### [To the Graduate School:](#)

All required Graduate School documents

Resume (uploaded through the online application or mailed directly to the department)

Personal statement (uploaded through the online application or mailed directly to the department)

#### [To the Economics Program](#)

Official transcripts from each college or university attended. The department will forward the transcripts to the Graduate School

3 letters of recommendation (uploaded through the online application or mailed directly to the department)

Official GRE scores

International students: copy of official TOEFL or IELTS scores

### **Degree Requirements**

To fulfill requirements for the MA degree, a candidate must complete a 30-hour approved program of study. This includes 15 credit hours of core courses: Econ 7370 (mathematical economics); Econ 8451 (microeconomics); Econ 8453 (macroeconomics); Econ 8472 (econometric methods); and Econ 8473 (applied econometrics).

In addition, students must take Stat 7710 (Introduction to Mathematical Statistics) and Econ 8413 (MA research workshop). Note that Econ 9451 may be substituted for Econ 8451, Econ 9453 may be substituted for Econ 8453, Econ 9473 may be substituted for Econ 8472, and enrollment in 9000-level courses may require consent of the department and/or the instructor.

## PhD Track

Students can also earn an MA while working toward a PhD by passing the comprehensive examination.

## Doctorate in Economics

### Admission Contact Information

Lynne Riddell [riddell@missouri.edu](mailto:riddell@missouri.edu)  
 118 Professional Bldg.; Columbia, MO 65211  
 573-884-7989

### Admission Criteria

Fall deadline: January 1  
 Spring deadline: October 1

The minimum requirements for admission into the PhD program are

Undergraduate GPA 3.0

Minimum **GRE** scores:

<i>When did you take the GRE?</i>	Verbal	Quantitative
Prior to August 1, 2011	400	700
On or After August 1, 2011	146	155

Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
79	550

Minimum **Academic IELTS** scores:

Listening	
Reading	
Writing	
Speaking	
Overall Score	6.0

Ordinarily, to be accepted for advisement in the PhD program, a student must have a master's degree in economics, or, alternatively, the student must meet the requirements for admission to the MA program, together with the requirement of an adequate background in economics, mathematics and statistics.

## Required Application Materials

### [To the Graduate School:](#)

All required Graduate School documents

Resume (uploaded through the online application or mailed directly to the department)

Personal statement (uploaded through the online application or mailed directly to the department)

### [To the Economics Program](#) (go there for details):

Official transcripts from each college or university attended. The department will forward the transcripts to the Graduate School

3 letters of recommendation (uploaded through the online application or mailed directly to the department)

Official GRE scores

International students: copy of official TOEFL or IELTS scores

## Degree Requirements

The PhD program is designed to encompass training in economic theory and quantitative methods, as well as flexibility for students in choosing course work to suit their interests and intended careers.

For those entering the program with a bachelor's degree, the following courses are required:

Stat 7710 (mathematical statistics);

Econ 7370 (mathematical economics);

Econ 8451, Econ 9451 and Econ 9452 (microeconomics);

Econ 8453, Econ 9453 and Econ 9454 (macroeconomics);

Econ 8472, Econ 9473 and Econ 9474 (econometric methods);

6 credit hours of Econ 9413 (PhD research workshop);

6 credit hours of 9000-level economics courses in each of two areas of specialization;

Two other 9000-level economics courses (excluding 9090 and 9480);

3 additional credit hours of elective course work within the department, or approved courses in related areas outside economics; and 12 credit hours of dissertation research (for a total of 72 credit hours).

Courses taken to satisfy these requirements (except dissertation research) may be taken while earning an MA at MU, or, as with students entering the program with prior graduate coursework, at other accredited colleges and universities as recommended by the Graduate Studies Committee.

## Examinations

**Qualifying Examination:** Students pursuing the PhD degree must pass a qualifying examination. Upon completion of relevant required courses in the first year, students take the qualifying examination,\*which is a written examination that covers microeconomic concepts, calculus, matrix algebra, optimization, statistics and econometrics. The exam is 6 hours in length, usually administered in parts over two days. The exam must be taken in May following the first year of graduate study and is graded in three levels: 0, 1, and 2. Students who receive a score of 2 pass the exam. Students who receive a score of 1 may retake the exam the following August. Students who receive a score of 0 fail and may not continue in the PhD program. Only pass and fail grades will be awarded on the August exam. Students who fail the exam may continue in the MA program.

**Comprehensive Examination:** Students pursuing the PhD degree must pass a comprehensive examination. The comprehensive exam has a written section and an oral section. Upon completion of required courses in the

second year, students take the written portion of the comprehensive examination, which covers all second-year courses (Microeconomics, Macroeconomics, and Econometrics). The exam is 6 hours in length; it is administered in parts, with two-hours devoted to each of the three core subjects. The first offering of the exam is in May. Students who fail to pass all three parts of the exam the first time may retake the failed part(s) the following August. Students who fail the written exam may continue in the MA program. The oral portion of the comprehensive exam is administered by the student's dissertation committee as part of the dissertation proposal defense. At the discretion of the student's dissertation committee, written questions over the fields relevant to the proposal may be included as part of the proposal defense.

*\*Applicants with outstanding background may be selected by the Graduate Studies Committee to be offered the opportunity to take the August qualifying exam prior to the start of their first semester. Such students who pass the August qualifying exam will move directly to second year courses. Students who fail will start with the normal first year courses.*

### **Specialization**

Fields: Students are required to complete a course of study in two defined areas of specialization. It is expected that one of the areas will be related to the objectives of the student's dissertation. The exact areas of specialization from which the student can choose are listed below. Each course of study consists of two classes in the area followed by a research paper. Students are required to receive a passing grade in each course along with a passing grade on the research paper. The instructors of the field courses oversee the content of the research paper and the instructor of the Ph.D. research workshop (9413) oversees the mechanics of the paper. A field requirement is satisfied after both field course instructors and the 9413 instructor sign off on the paper. Students are not allowed to combine courses from separate fields. The department commits itself to offering a second course in any field to all students who have completed an initial course in the field, within two semesters of the student completing the initial course (not counting the summer semester). This course may consist of a readings course with one of the faculty members in the field in lieu of a regular course. If a readings course is provided, then the faculty member is required to provide the department with the reading list for the course.

### **List of fields and courses:**

Econometrics – Economics 9476 and 9477  
Industrial Organization – Economics 9455 and 9456 or 9471  
International Economics – Any two of Economics 9425, 9426, 9427, or 9460  
Labor Economics – Economics 9411 and 9412  
Monetary Economics – Economics 9430 and 9431  
Public Economics – Economics 9415 and 9416  
Public Policy – Public/International – Economics 9415 or 9416 and Economics 9425, 9426, 9427, or 9460  
Quantitative Microeconomic Policy Analysis – Economics 9446 and 9447

### **Dissertation**

The dissertation must make a substantial contribution to knowledge. Upon completion of the dissertation, students pursuing the Ph.D. degree must pass a final oral examination. This exam can include an evaluation of the dissertation, the student's defense of the dissertation, and the student's general comprehension of economics, and is open to the academic community.

### **Statement on Satisfactory Progress**

1. Taking and completing required course work on schedule and maintaining a GPA of at least 3.0.
2. Enrollment in a full-time plan of study, i.e., completion of at least 9 graded hours per semester.
3. Taking and passing qualifying and comprehensive examinations on schedule.
4. Students who have completed all course work and are working on the final stage of the PhD program are encouraged to present their written proposal within a reasonable amount of time.

### **Courses**

See Economics (ECONOM) in the myZou online system.

## Educational Leadership & Policy Analysis Graduate Programs

College of Education

202 Hill Hall

573-882-8221

573-884-5714 (fax)

Educational Leadership & Policy Analysis website: <http://education.missouri.edu/ELPA/index.php>

The graduate programs in the Department of Educational Leadership and Policy Analysis are designed to meet the specific educational needs of the student in a particular area of emphasis. Graduates find employment in a wide range of settings including colleges and universities, public schools, policy agencies, professional associations, government and business and industry.

**The PhD Program in ELPA** requires a minimum of 60 hours beyond the master's degree. The goal of the PhD program is the preparation of professional researchers and scholars who have high levels of competence in conducting research that adds to the knowledge base.

The program also has a goal of meeting the student's individual career goals and interests through the development of an appropriate plan of study. Each emphasis area has slightly different requirements and areas of focus; however, all 3 emphasis areas require a department-wide core; emphasis area coursework; electives; a research core; and the completion of a minimum of 6 hours for the dissertation.

**The Statewide Cooperative EdD Program** in Educational Leadership is designed to enhance the knowledge and competencies of educational leaders so they provide optimal leadership in organizations that educate a wide range of learners from youth to adult. The program's curriculum is designed to prepare leaders who are inquiring, reflective practitioners who are competent in defining and solving complex problems in education.

The **Educational Specialist (EdSp) Program** is designed to enhance the knowledge and competencies of K-12 educational administrators and to lead to advanced principal certification and/or superintendent certification. The program has a thematic, integrated, problem-based curriculum intended to prepare school and district leaders who are inquiring, reflective practitioners. The curriculum is aligned with state standards for certification.

The department's **master's programs** are intended to provide initial preparation for leaders in a variety of educational contexts, including higher education and PK-12 schools. Programs vary according to emphasis area and are designed to meet student's individual career goals and interests — e.g., student affairs administration, initial principal certification and general higher education administration.

A minimum of 33 credit hours is required for the M Ed or MA in Higher Education and a minimum of 30 hours is required for the M Ed in Educational Leadership

### Satisfactory Rate of Progress

All ELPA students are expected to make satisfactory progress toward their degrees. Satisfactory progress of students will be determined through an annual review by the director of graduate studies, graduate students' academic advisers and their committees. Judgments about satisfactory progress will involve consideration of the following:

Graduate School time limits for programs

GPA for departmental courses

Continuous enrollment and active engagement in course work or research (EdD and PhD)  
Student performance in research credits  
Timely resolution of incomplete grades

**Degrees available in the following emphasis areas:**

- MA in Higher Education
- M Ed in Higher Education
- M Ed in Educational Leadership
- EdSp in Educational Administration
- EdD in Educational Leadership
- PhD in Educational Administration
- PhD in Educational Policy Studies - PK-12 or Higher Education
- PhD in Higher Education

**Graduate Certificates**

- Education Policy Studies
- Higher Education Administration

**Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

**Educational Leadership and Policy Analysis Faculty**

John Wedman

Division Executive Director, professor; PhD, University of Oklahoma. Analogical Problem Solving, Performance Support Systems, and Technology Integration in Teaching & Learning

Joe F. Donaldson

director of graduate studies, professor; PhD, University of Wisconsin-Madison. Adult and continuing education.

Steven W. Graham

professor; PhD, University of Iowa. Higher education, continuing education.

Bradley Curs

associate professor; PhD, University of Oregon. Economics of education, higher education finance and college access and affordability

Jeni Hart

associate professor; PhD, University of Arizona. Faculty, organizational climate and transformation and gender issues within academe.

Peggy Placier

associate professor; PhD, University of Arizona. Policy, sociology and history of education; teacher education.

Juanita Simmons

associate professor; PhD, University of Texas-Austin. Curriculum design, urban leadership, magnet school operations and staff development.

Rozana Carducci

assistant professor; PhD, University of California – Los Angeles. Postsecondary leadership, academic capitalism, student affairs, qualitative methodology.

Emily Crawford

assistant professor, PhD, Pennsylvania State University

Immigration policy; educational access for immigrant children and undocumented students; comparative & international education; ethics in education, education law.

Ty-Ron Douglas

assistant professor, PhD, University of North Carolina Greensboro.

Curriculum studies, cultural/social foundations of education & leadership, Black masculinity/Black family/African diaspora studies.

Sarah Diem

assistant professor; PhD, University of Texas – Austin. Social and cultural context of educational policy, school desegregation, poverty and educational policy.

Rajeev Darolla

assistant professor; PhD, George Washington University. Education policy, urban policy, postsecondary education, social disparities, research methods.

Cassandra Harper

assistant professor; PhD, University of California–Los Angeles. College students, multiracial identity and institutional research and assessment.

James Sebastian

assistant professor, PhD, University of Wisconsin Madison

School reform, especially in urban settings, and educational leadership influences on reform.

Noelle Witherspoon Arnold

assistant professor; PhD, University of Alabama. Auto/biographical research methods, womanist theory, religion and spirituality in education, ethics in education.

Carol Maher

assistant professor of professional practice; PhD, University of Missouri. Leadership, school culture, and adult learning.

Jennifer Fellabaum

assistant teaching professor, PhD, University of Missouri. Identities in higher education, organizational analysis, faculty issues, student affairs.

### *Adjunct Faculty*

Kimberly Hoffman

adjunct associate professor; PhD, University of Missouri.

Julie Middleton

adjunct associate professor; PhD, University of Missouri.

Von Pittman  
adjunct associate professor; PhD, University of Georgia.

Terry Barnes  
adjunct assistant professor; PhD, Southern Illinois University.

Monica Beglau  
adjunct assistant professor; EdD, University of Wyoming.

Ann Behrens  
adjunct assistant professor; EdD, University of Missouri.

Christopher Belcher  
adjunct assistant professor; EdD, University of Missouri.

Wanda Brown  
adjunct assistant professor, PhD, University of Missouri.

David Brunsmma  
adjunct assistant professor, PhD, University of Notre Dame.

DeAngela Burns-Wallace  
adjunct assistant professor; EdD, University of Pennsylvania.

John Comerford  
adjunct assistant professor; PhD, University of Kansas.

Pam Conway  
adjunct assistant professor; EdD, University of Missouri.

Patty Corum  
adjunct assistant professor; PhD, University of Missouri.

Cheryl Cozette  
adjunct assistant professor; EdD, University of Missouri.

Vicki Curby  
adjunct assistant professor; PhD, University of Missouri.

Marc Doss  
adjunct assistant professor, EdD, University of Arkansas

Mark Ehlert  
adjunct assistant professor; PhD, University of Missouri.

Mardy Eimers  
adjunct assistant professor; PhD, Syracuse University.

Susie Gauzy  
adjunct assistant professor, EdD, University of Missouri.

Seunghee Han  
adjunct assistant professor, PhD, University of Missouri.

Jill Hermsen  
adjunct assistant professor; PhD, University of Missouri.

Angela Hull  
adjunct assistant professor, PhD, University of Missouri.

Rhonda Key  
adjunct assistant professor, PhD, University of Missouri.

Ann Korschgen  
adjunct assistant professor; PhD, University of Wisconsin-Madison.

Mary Laffey  
adjunct assistant professor, PhD, University of Missouri.

Dan Lowry  
adjunct assistant professor; EdD, University of Missouri.

Gabrielle Malfatti-Rachell  
adjunct assistant professor, EdD, University of Missouri.

Mark Miles  
adjunct assistant professor, PhD, University of Missouri.

Heather Mosley Linhardt  
adjunct assistant professor, PhD, University of Missouri

Stacey Preis  
adjunct assistant professor, PhD, University of Missouri

Kim Presko  
adjunct assistant professor; PhD, University of Missouri.

Cathy Scroggs  
adjunct assistant professor; PhD, University of Missouri.

Kristi Smalley  
adjunct assistant professor, EdD, University of Missouri.

Bernard Solomon  
adjunct assistant professor, PhD, University of Missouri.

Beth Tankersley-Bankhead  
adjunct assistant professor, PhD, University of Missouri.

Lori Wilcox  
adjunct assistant professor, PhD, University of Missouri.

Jeffrey Zeilenga  
adjunct assistant professor, PhD, University of Arizona.

*Faculty Emeriti*

Richard L. Andrews  
professor emeritus; PhD, Purdue University.

Dan Cockrell  
clinical associate professor emeritus; EdD, Oklahoma State University.

Karen Cockrell  
associate professor emeritus; EdD, Oklahoma State University.

Irv Cockriel  
professor emeritus; PhD, University of Missouri.

Jerry W. Valentine  
professor emeritus; PhD, University of Nebraska.

**Doctorate of Philosophy (PhD) Program in ELPA**

**Admission Contact Information**

Educational Leadership & Policy Analysis  
College of Education, 202 Hill Hall  
573-882-8221 573-884-5714 (fax)  
[ELPA website](http://education.missouri.edu/ELPA/index.php): <http://education.missouri.edu/ELPA/index.php>

**Admission Criteria**

Fall deadline – January 15  
Spring deadline – September 15

- \* Competitive GRE score
- \* Minimum GPA: 3.0 (A=4.0)

Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

Minimum **Academic IELTS** scores:

Listening	
Reading	
Writing	
Speaking	
<b>OVERALL Score</b>	<b>5.5</b>

Admissions screening and decisions for all graduate programs are not made until all required materials have been submitted. Admissions recommendations are based on a profile developed from data that include undergraduate (last 60 hours) and graduate grade point averages, scores on the Graduate Record Examinations (GRE), recommendations, evidence of successful professional experiences and samples of scholarly writing.

[Required Application Materials to the Graduate School:](#)

- Official copies of transcripts
- Official GRE scores
- Official TOEFL or IELTS scores (international applicants only)
- 3 recommendations, two of which are from faculty who have taught/advised the applicant
- Departmental application
- Current resume
- Samples of scholarly writing

[Required Application Materials to the Program](#)

- Assistantship application, if interested

**Doctorate of Education (EdD) in Educational Leadership**  
*(also known as The Statewide Cooperative EdD Program)*

The Statewide Cooperative EdD Program in Educational Leadership requires a minimum of 76 credit hours beyond the baccalaureate degree. The program, offered in a cohort format, includes 34 hours of course work in 6 contiguous semesters, beginning in the summer and concluding in the spring semester 2 years later. In addition to course work credit, 12 credit hours of dissertation research are required.

**Admission Contact Information**

Educational Leadership & Policy Analysis  
 College of Education  
 202 Hill Hall  
 573-882-8221  
 573-884-5714 (fax)  
[ELPA website: http://edd.missouri.edu/](http://edd.missouri.edu/)

**Admission Criteria**

December 1st of even-numbered years

- Competitive GRE score
- Minimum GPA: 3.0 (A=4.0)
- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

- Minimum **Academic IELTS** scores:

Listening	
Reading	
Writing	
Speaking	

<b>OVERALL Score</b>	<b>5.5</b>
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Admissions screening and decisions for all graduate programs are not made until all required materials have been submitted. Admissions recommendations are based on a profile developed from data that include undergraduate (last 60 hours) and graduate grade point averages, scores on the Graduate Record Examinations (GRE), recommendations and evidence of successful professional experiences.

[Required Application Materials to the Graduate School:](#)

- All required Graduate School documents

[Required Application Materials to the Program](#)

- Official copies of transcripts
- Official GRE scores
- Official TOEFL or IELTS scores (international applicants only)
- 3 departmental recommendation forms, two of which are from faculty who have taught/advised the applicant.
- Departmental application
- Current resume

**Educational Specialist Program in ELPA**

**Admission Contact Information**

Educational Leadership & Policy Analysis  
 College of Education  
 202 Hill Hall  
 573-882-8221  
 573-884-5714 (fax)  
[ELPA website](http://education.missouri.edu/ELPA/index.php): <http://education.missouri.edu/ELPA/index.php>

**Admission Criteria**

No deadline

**Per ELPA policy, students have five years to complete their EDS degree.**

- Minimum GPA: 3.0 (A=4.0)
- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

- Minimum **Academic IELTS** scores:

Listening	
Reading	
Writing	
Speaking	
<b>OVERALL Score</b>	<b>5.5</b>

Admissions screening and decisions for all graduate programs are not made until all required materials have been submitted. Admissions recommendations are based on a profile developed from data that include undergraduate

(last 60 hours) and graduate grade point averages, recommendations and evidence of successful professional experiences.

[Required Application Materials to the Graduate School:](#)

- Official copies of transcripts
- Official TOEFL or IELTS scores (international applicants only)
- 3 recommendations
- Departmental application
- Current resume

[Required Application Materials to the Program](#)

- Assistantship application, if interested

**Masters Programs in ELPA**

**Admission Contact Information**

College of Education  
 202 Hill Hall  
 573-882-8221 573-884-5714 (fax)  
[ELPA website](http://education.missouri.edu/ELPA/index.php): <http://education.missouri.edu/ELPA/index.php>

**Admission Criteria**

**M Ed in Educational Leadership:**

No deadline

**Per ELPA policy, students have five years to complete their M Ed degree.**

- Minimum GPA: 3.0 (A=4.0)
- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

- Minimum **Academic IELTS** scores:

Listening	
Reading	
Writing	
Speaking	
<b>OVERALL Score</b>	<b>5.5</b>

**MA or M Ed in Higher Education:**

Fall deadline – January 15  
 Spring deadline – September 15

Per ELPA policy, students have five years to complete their MA or M Ed degree.

- Minimum GPA: 3.0 (A=4.0)
- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

- Minimum **Academic IELTS** scores:

Listening	
Reading	
Writing	
Speaking	
<b>OVERALL Score</b>	<b>5.5</b>

Admissions screening and decisions for all graduate programs are not made until all required materials have been submitted. Admissions recommendations are based on a profile developed from data that include undergraduate (last 60 hours) and graduate grade point averages, recommendations and evidence of successful related experiences.

[Required Application Materials to the Graduate School:](#)

- Official copies of transcripts
- Official TOEFL or IELTS scores (international applicants only)
- 3 recommendations, two of which are from faculty who have taught/advised the applicant (for MED/MA in Higher Ed applicants only)
- Departmental application
- Current resume

[Required Application Materials to the Program:](#)

- Departmental assistantship application, if interested (student affairs assistantship application processes are separate; contact the department for more information).

A minimum of 33 credit hours and a capstone project are required for the M Ed in Higher Education, 33 credit hours and a thesis are required for the MA in Higher Education, and 30 hours is required for the M Ed in Educational Leadership.

**Education Policy Studies Graduate Certificate**

\*Federal Gainful Employment Disclosure in the back of this catalog.

**Contact Information**

Educational Leadership and Policy Analysis  
 202 Hill Hall  
 573-882-8221

[http://education.missouri.edu/ELPA/program\\_areas/degree\\_pages/policy\\_studies\\_certificate.php](http://education.missouri.edu/ELPA/program_areas/degree_pages/policy_studies_certificate.php)

The importance of education policy in U.S. society is evident in the attention it receives from scholars, politicians, media pundits, and citizens. Because nearly all citizens attend school for some part of their lives, they have ideas about what schools should accomplish and how they should be run. Education policy receives a great deal of attention from policy makers at all levels and in all branches of government.

Economically, public education (pre-K through higher education) constitutes a major part of the states' budgets, and a significant local investment as well. In addition, researchers gain new perspectives by comparing U.S. public schools with the private sector, which provides education to a significant number of students in many locales, as well as with schools in other nations. In academe, the study of education policy is an interdisciplinary endeavor, involving scholars from philosophy, political science, economics, sociology, history, public administration, journalism, and other fields.

The graduate certificate in Education Policy gives students access to a coherent set of courses that will enable them to understand this complexity. The certificate provides students with:

- Knowledge they can apply to the study of education policy within their major discipline or to their work in policy settings.
- Skills in analyzing education policy issues, i.e., understanding differing values, political and economic arguments, costs/benefits, and policy processes.
- Conceptual tools to use in understanding and resolving policy implementation problems.

**Required Courses** (Nine semester hours/three courses)

- \* ED LPA 7458 Sociology of Education
- \* ED LPA 9460 Philosophic Theories in Education
- \* ED LPA 9462 History of U.S. Education Policy

**Elective Course** (Three semester hours/one course)

- \* ED LPA 9459 International Education and National Development
- \* ED LPA 9463 Politics of Education
- \* ED LPA 9465 Policy Analysis Using Large Databases

Applications accepted anytime. For more information about this graduate certificate, contact the ELPA Department by phone at 573-882-8221 or by e-mail at [elpagrad@missouri.edu](mailto:elpagrad@missouri.edu)

**Higher Education Administration Graduate Certificate\***

\*Federal Gainful Employment Disclosure in the back of this catalog.

**Contact Information**

Department of Educational Leadership and Policy Analysis  
202 Hill Hall  
573-882-8221

[http://education.missouri.edu/ELPA/program\\_areas/degree\\_pages/HACE\\_certificate.php](http://education.missouri.edu/ELPA/program_areas/degree_pages/HACE_certificate.php)

Due to multiple and growing demands upon the academy for quality control, accountability, and productivity, administration of higher education has become increasingly complex. The Graduate Certificate in Higher Education Administration is designed to address the need for enhanced understanding of the higher education institutional context and for improved skills in areas required for effective administration of the higher education enterprise.

The Graduate Certificate in Higher Education Administration is designed to provide students with an overview of higher education administration and governance, and with some technical knowledge about various aspects of administration, e.g., finance, law, policy.

**Required Courses** (Six semester hours/two courses)

- \* ED LPA 9450 Administration and Governance of Higher Education
- \* ED LPA 9451 Higher Education Finance

**Elective Courses** Includes (Six semester hours/two courses)

- \* ED LPA 9440 Race, Gender and Ethnicity in Higher Education
- \* ED LPA 9444 Program Planning in Higher Education
- \* ED LPA 9446 Student Affairs Administration
- \* ED LPA 9447 College Student Culture and Environment
- \* ED LPA 9449 History of Higher Education in the United States
- \* ED LPA 9452 Overview of Higher Education
- \* ED LPA 9454 Introduction to Postsecondary Law
- \* ED LPA 9455 The Community College
- \* ED LPA 9457 Higher Education Policy

For more information about this graduate certificate, contact the ELPA Department by phone at 573-882-8221 or by e-mail at [elpagrad@missouri.edu](mailto:elpagrad@missouri.edu).

## ELPA Courses

See Educational Leadership & Policy Analysis (ED LPA) in the myZou online system.

# Educational, School and Counseling Psychology Graduate Programs

College of Education  
14 Hill Hall

573-882-7732 or 573-884-5989

<http://education.missouri.edu/ESCP/>

## About the Program

ESCP offers master's, educational specialist, and PhD degrees in Educational Psychology, School Psychology, Counseling Psychology, and Health Education and Promotion. The PhD programs in counseling psychology and school psychology are accredited by the American Psychological Association. The 2005 Faculty Scholarly Productivity Index ranked MU's graduate program in counseling psychology 4th in the nation and the 2010 U.S. News & World Report ranked it 9<sup>th</sup> nationally.

Our faculty members create a rich and stimulating learning environment for students through their teaching, research, and service. ESCP has three centers that provide students and faculty with many opportunities to collaborate on research and service-related projects while focusing on improving life for learners in all environments.

## Career Opportunities

Our graduates find employment in a wide range of settings, including colleges and universities, public schools, agencies, clinics, hospitals, business and industry, research laboratories and government service. Occupations include, but are not limited to, school counselors, licensed professional counselors, faculty members, school psychologists, psychometricians, health educators and educational researchers.

## Degrees Available

The following degrees and emphasis areas are available:

### *Counseling Psychology (PhD, EdSp, M Ed)*

Subspecialties of the M Ed include:

- Career and Sport Psychology
- Elementary School Counseling
- Secondary School Counseling
- Mental Health Practices in Schools (online, also available as an EdSp degree)
- Positive Coaching (online)
- Multicultural Education Graduate Certificate (online)

### *Educational Psychology (PhD, M Ed, MA)*

Subspecialties include:

- Cognition and Development
- Measurement and Statistics

*Health Education & Promotion (PhD, M Ed, MA)*

*School Psychology (PhD, EdSp) APA Accredited, on probation*

### **Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program Web site or ask the program contact for details.

## **Educational, School and Counseling Psychology Faculty**

David A. Bergin  
associate professor; PhD, Stanford University.

Kathleen Boggs  
associate teaching professor; PhD, University of Utah.

Connie M. Brooks  
assistant clinical professor; PhD, University of Missouri.

Deborah L. Carr  
assistant professor; PhD, University of Missouri.

Daniel L. Clay  
dean of Education & Joanne H. Hook Dean's Chair in Educational Renewal; PhD, University of Missouri.

Lisa Y. Flores  
associate professor; PhD, University of Missouri.

Craig L. Frisby  
associate professor; PhD, University of California, Berkeley.

Norman C. Gysbers  
Curators' Professor; PhD, University of Michigan.

Puncky P. Heppner  
Curators' Professor; PhD, University of Nebraska.

Mary Heppner  
professor; PhD, University of Missouri.

Keith Herman  
associate professor, PhD, University of Florida.

Joseph A. Johnston, Jr.  
professor, PhD, University of Michigan.

Andrew J. Knoop  
assistant clinical professor, director, Assessment and Consultation Clinic; PhD, University of Missouri.

Melissa A. Maras  
assistant professor; PhD, Miami University.

Matthew Martens  
associate professor; PhD, University of Missouri.

Richard T. McGuire, Jr.  
assistant teaching professor; PhD, University of Virginia.

Alejandro Morales  
assistant professor; PhD, University of Nebraska-Lincoln.

Lori Newcomer  
assistant research professor; PhD, University of Missouri.

Cheryl A. Offutt  
assistant teaching professor; PhD, Michigan State University.

Steven J. Osterlind  
professor; PhD, University of Southern California.

Wendy M. Reinke  
associate professor; PhD, University of Oregon.

T. Chris Riley-Tilman  
associate professor; PhD, Syracuse University.

Roberta J. Scholes  
associate teaching professor; PhD, University of Missouri.

Alex Waigandt  
associate professor; PhD, University of Oregon.

Kenneth T. Wang  
assistant professor; PhD, Pennsylvania state University.

Ze Wang  
assistant professor; PhD, University of Missouri.

John Wedman  
professor and interim department Chair; PhD, University of Oklahoma.

Stephen D. Whitney  
associate professor; PhD, University of Washington.

Barbara Williamson  
associate teaching professor; PhD, University of Tennessee, Knoxville.

Roger L. Worthington  
professor; PhD, University of California, Santa Barbara.

### **Faculty Emeriti**

John W. Alspaugh  
professor emeritus; EdD, University of Missouri.

Richard B. Caple  
professor emeritus; EdD, Teachers College, Columbia University.

Richard Cox  
professor emeritus; PhD, University of Oregon.

Richard A. English  
professor emeritus; PhD, University of Arizona.

James R. Koller  
professor emeritus; PhD, University of Missouri.

Joseph T. Kunce  
professor emeritus; PhD, University of Missouri.

John F. McGowan  
professor emeritus; PhD, University of Missouri.

Michael J. Patton  
professor emeritus; PhD, The Ohio State University.

Richard W. Thoreson  
professor emeritus; PhD, University of Missouri.

Robert R. Trimble  
associate professor emeritus; PhD, Oklahoma State University.

Frank E. Wellman  
professor emeritus; PhD, University of Nebraska.

Virginia R. Wheeler  
assistant professor emeritus; PhD, University of Missouri.

## **MA, M Ed or EdSp in Educational, School and Counseling Psychology**

### **Admission Contact Information**

LaToya Luther (lutherl@missouri.edu)  
14 Hill Hall; Columbia, MO 65211  
573-882-7732

**Admission Criteria**

- Minimum GPA: 3.0
- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
92	580

- Recommended **GRE** scores:  
*When did you take the GRE?*

	Verbal + Quantitative
Prior to August 1, 2011	1000
On or After August 1, 2011	300

**Recommended Analytic Writing score = 4**

**Deadlines**

- Fall deadline: December 1<sup>st</sup>. However, the deadline for the Educational Psychology program is January 15<sup>th</sup>
- M Ed/MA in Health Education & Promotion deadline is rolling
- Career & Sport Psychology deadline is rolling
- M Ed, EdSp track in Mental Health Practices in Schools (online degrees); deadline for online degree is rolling

If an applicant is admitted but does not hold a bachelor’s degree in a related discipline or does not have relevant background course work, the applicant must complete prerequisite courses as specified by the faculty of the department.

**Required Application Materials**

*To the Graduate School:*

- All required Graduate School documents
- Official transcripts
- GRE scores
- TOEFL scores
- 3 letters of recommendation via the online application
- Personal statement and vitae via online application per departmental requirements

## Doctorate in Educational, School & Counseling Psychology

### Admission Contact Information

LaToya Luther ([lutherl@missouri.edu](mailto:lutherl@missouri.edu))  
 14 Hill Hall  
 Columbia, MO 65211  
 573-882-7732

### Admission Criteria

Recommended GRE scores:

When did you take the GRE?	Verbal + Quantitative
Prior to August 1, 2011	1200
On or After August 1, 2011	305

**Recommended Analytic Writing score = 4.5**

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
92	580

### Deadlines

Fall deadline: December 1<sup>st</sup>. However, the deadline for the Educational Psychology program is January 15<sup>th</sup>.

### Required Application Materials

#### [To the Graduate School:](#)

- All required Graduate School documents
- Official transcripts
- GRE scores
- TOEFL scores
- 3 letters of recommendation via the online application
- Personal statement and vitae via online application per departmental requirements

### Courses

See Educational, School and Counseling Psychology (ESC PS) [in the myZou online system](#).

# Electrical and Computer Engineering Graduate Programs

349 Engineering Building West  
Columbia, MO 65211  
Phone: 573-882-4436  
Email: [umcengrecede@missouri.edu](mailto:umcengrecede@missouri.edu)  
<http://engineering.missouri.edu/ece/>

Established in 1885, the Department of Electrical & Computer Engineering has a long tradition of excellence. Our classes are small with extensive design and laboratory experimentation. Research opportunities exist for both undergraduate and graduate students in Communication and Signal Processing, Physical Electronics, Intelligent Systems, Systems Modeling and Control, Nano and Micro Electronics, and Digital / Computer Systems.

## Career Opportunities

Throughout the 20th century, the electrical engineering and computer engineering professions devised many of the innovations that dominated the technology landscape. In the 21st century, electrical and computer engineers will be at the forefront of a wide spectrum of technologies including nanotechnology, biotechnology, sensors, power generation, electric vehicles, and telecommunications.

## Degrees Offered

At the University of Missouri, the Department of Electrical and Computer Engineering offers accredited programs of study leading to Bachelor of Science (BS), Master of Science (MS), and Doctoral (PhD) degrees.

## Areas of study include:

*Communications and Signal Processing.* Satellite remote sensing, geospatial intelligence, image/video processing, land-mine detection, speech signal processing, wireless communications, underwater communications.

*Physical Electronics.* Medical applications and advanced sterilization of food, water and products using pulsed power, pulsed power applications and research (MU Gigawatt Rep-rate Test Stand. Lasers, high voltage switching and power conditioning, high voltage pulse technology and plasmas with the 2.5 MV, 250 kA MU-Terawatt Test Stand), interesting plasma science applications, like high voltage accelerators to propel micro spacecraft, electromagnetic launchers, radio-frequency effects on electronics, power electronics, microwave photonics, electrooptics and photoconductive switches.

*Intelligent Systems.* Basic and applied research in computational intelligence (neural networks, fuzzy systems, evolutionary computation, swarm intelligence), spatial reasoning for scene understanding and human/robot interaction, pattern recognition and automated decision making, eldercare technology, computer vision and image processing, human activity analysis, cognitive robotics, landmine and explosive detection.

*Systems Modeling and Control.* Control systems, computer process control, digital and sampled data control, robotics, system biology; biologically realistic modeling, computational, neuroscience, theoretical neuroscience, electrophysiology.

*Nano and Micro Electronics.* Nano/microelectromechanical systems (N/MEMS), micro sensors and actuators, High K dielectrics, nano structures, complex heterostructures (i.e. HEMTs, VCSELs, detectors, HBTs, etc), BioMEMS and biomedical microsystems.

*Digital System and Circuit Design, Computer Process Control.* Excellent computer equipment and other laboratory facilities are used for research sponsored by various government and industry sources. The ECE department is the home department of the following University centers: Center for Geospatial Intelligence, Center for Micro/Nano Systems and Nanotechnology, Center for Eldercare and Rehabilitation Technology, Center for Physical Electronics and Power Electronics, Center for Electromechanics and Energy Conversion, Interdisciplinary Center for Research in Earth Science Technologies, Institute for Computational Neurobiology.

### **Internal Funding**

*Teaching Assistantships.* Teaching assistantships are normally awarded to qualified graduate students with appropriate communication skills who assist faculty members in various phases of instruction. International students may not be appointed to teaching assistantships in their first semester on campus. International students must pass a language screening test at a proper level to be eligible for the TA positions available.

*Research Assistantships.* Research assistantships are granted to students qualified for working with professors on particular research projects. The research assistants are selected by faculty members who have research funds to support graduate students. Therefore, students should contact the faculty members directly for the RA possibility.

*Fellowships.* The department faculty actively pursue funding for selected research fellowships. Available fellowship opportunities can be found by contacting the ECE Graduate Office. Additionally, a limited number of "Teaching Fellows" are awarded annually to outstanding PhD students, particularly for those preparing for academic careers. Details can be obtained from the ECE Graduate Office.

## **Electrical and Computer Engineering Faculty**

Noah D. Manring  
Interim chair, professor; PhD, Iowa State University.

Randy Curry,  
professor; PhD, University of St. Andrew, Scotland.

Curt Davis  
professor; PhD, University of Kansas.

Shubhra Gangopadhyay  
professor; PhD, Indian Institute of Technology, Kharagpur.

Zhihai He  
associate professor; PhD, University of California, Santa Barbara.

Dominic Ho  
professor; PhD, Chinese University of Hong Kong.

Naz Islam  
professor; PhD, Rensselaer Polytechnic Institute, Troy, NY

James M. Keller  
director of graduate studies, Curators' Professor; PhD, University of Missouri.

Satish Nair  
professor; PhD, Ohio State University.

Robert O'Connell  
professor; PhD, University of Illinois.

Harry W. Tyrer  
professor; PhD, Duke University.

Marjorie Skubic  
professor; PhD, Texas A&M University.

Guilherme DeSouza  
associate professor; PhD, Purdue University.

Greg Engel  
associate professor; PhD, Texas Tech University.

Scott Kovaleski  
director of undergraduate studies; associate professor; PhD, University of Michigan.

Jae Wan Kwon  
associate professor; PhD, University of Southern California.

Justin Legarsky  
associate professor; PhD, University of Kansas.

Gregory Triplett  
associate professor; PhD, Georgia Institute of Technology.

Mahmoud Almasri  
associate professor; PhD, Southern Methodist University.

Michela Becchi  
assistant professor; PhD, Washington University, St. Louis

Tony Xu Han  
assistant professor; PhD, University of Illinois-Urbana/Champaign.

Alina Zare  
assistant professor, PhD, University of Florida

## Master of Science in Electrical or Computer Engineering (MS)

### Admission

349 Engineering Building West, Columbia, MO 65211

Phone: 573-882-4436

Email: [umcengreogradoff@missouri.edu](mailto:umcengreogradoff@missouri.edu)

<http://engineering.missouri.edu/ece/>

### Admission Criteria

Fall deadline: February 15

Spring deadline: September 1

Note: Applications received after these deadlines will be evaluated as time allows.

- Minimum GPA: 3.0 for the last 60 hours

- Minimum **GRE** scores:

<i>When did you take the GRE?</i>	Quantitative	Verbal	Analytical
Prior to August 1, 2011	80 <sup>th</sup> percentile	<i>will be considered</i>	<i>will be considered</i>
On or After August 1, 2011	80 <sup>th</sup> percentile	Will be considered	Will be considered

*International applicants only:*

- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
80	550

- Minimum **Academic IELTS** scores:

Listening	5.5
Reading	5.5
Writing	5.5
Speaking	5.5

### Required Application Materials:

- *Statement of Purpose* (upload to the Supplemental information section of the application)
- *Copies of your official transcripts* (upload to the Educational History section of the application)
- *Copies of your GRE scores* (upload to the Test Information section of the application)
- *Copies of your TOEFL or IELTS Scores* (for non-native English speakers only) (upload to the Test Information section of the application)
- *3 letters of Recommendation* (the department accepts electronic recommendations – in the recommendation section of the online application, enter the information for three recommenders. Each recommender will receive an email with instructions on how to complete the recommendation). The department does also accept hard copy letters of recommendation. The letters may be mailed to: Graduate School, 210 Jesse Hall, Columbia, MO 65211.

[To the Graduate School:](#)

Official Transcripts. The mailing address is: Graduate School, 210 Jesse Hall, Columbia, MO 65211.

*Note:* when registering for GRE or TOEFL exams, be sure to designate your program of interest at the University of Missouri – Columbia. MU's Institutional Code is 6875 (no departmental code is necessary).

### **Admissions Criteria for the MS in Electrical or Computer Engineering**

To be accepted outright by the director of graduate studies (DGS), the student needs to have a BS degree in either Electrical Engineering or Computer Engineering in addition to meeting the above requirements. Students who meet the academic requirements but have degrees in other engineering or science disciplines can be accepted directly into the MS program by the graduate program committee (GPC). Such students are strongly encouraged to consult with the DGS or their advisor about appropriate bridge courses. Based on individual circumstances, students may be advised to register as an undeclared graduate student to fill in background course work prior to admission into the department.

Students who do not meet the above requirements may still be admitted on probation by the GPC if there are mitigating factors. Students admitted on probation must receive at least a 3.0 GPA for the first 12 hours of graded graduate coursework completed in their first two semesters. Failure to achieve this GPA will result in expulsion from the ECE MS program.

### **Appeal Process**

All students have the right to a timely formal appeal to the GPC. Upon receipt of an admission decision or disciplinary action, the student has 10 working days in which to request a formal appeal. The DGS will convene a meeting of the GPC, the student, and the student's advocate (if appropriate) within 10 working days of receiving the request. The decision of the GPC at the hearing is final.

### **Degree Requirements**

To fulfill the requirements for the MS degree, the following rules apply:

- A candidate must complete 30 hours, including at least 12 hours of 8000-level graded course work (exclusive of ECE 8990 or ECE 8085 or ECE 8010 hours).
- At least six of these graded 8000 level course hours need to come from ECE.
- At least 15 hours of graded course work (total combination of 7000 and 8000 level courses, exclusive of ECE 8990, 8085, or 8010 hours) must be taken from the Electrical and Computer Engineering Department course offerings.
- A maximum of six hours of graduate credit may be transferred from another campus in the University of Missouri System or other university, while a maximum of eight hours of graduate credit may be used from a previous MU master's degree.
- At most, three hours of course work in supervised study (ECE 8010) may be taken during the MS program and they will be graded on an S/U basis.
- At least one course from each of three different emphasis areas must be taken; a minimum of two of the emphasis areas must be in Electrical and Computer Engineering. (Each ECE graduate course is designated to an emphasis area. Contact the ECE graduate office for a current list).
- A minimum of 3 hours to a maximum of 6 hours of research (ECE 8990) or problems (ECE 8085) are required, based on whether the student writes a master's thesis or a master's Report.
- The student's cumulative GPA must be at least 3.0 to graduate.

The requirements for the MS degree must be met within an eight year period. Each candidate must pass a final oral examination to demonstrate mastery of the work included in the thesis or in a substantial independent project. These MS requirements apply to ECE graduate students first enrolled in MU ECE in the Fall semester 2007 or later. UM ECE graduate students enrolled prior to Fall semester 2007 may choose to follow the MU ECE MS requirements that were in effect for their MU ECE graduate admission semester.

### **Academic Probation**

A student whose GPA drops below 3.0 is automatically placed on academic probation. In such a case, the student has one semester to raise his or her cumulative GPA to 3.0. Failure to do so will result in expulsion from the program. Additionally, a student who receives the grade of "C" in 9 hours of coursework will be expelled. As with acceptance, students here also have a right to the same formal appeal process described above.

### **Selection of an Advisor**

Students must choose an academic advisor who will then provide guidance for the selection of coursework, and in the choice and execution of a research question. The student's academic advisor and the Director of Graduate Studies must approve all coursework used to satisfy the credit hour requirements for this degree. After performing satisfactorily for a minimum of one semester, the student, with the adviser's assistance, completes the Program of Study form that outlines the plan of study for the student's graduate program. [M1 - Program of Study form](#)

The form is forwarded through the DGS to the Graduate School for approval. In the event that an adviser retires or leaves MU, he/she may continue to serve as the student's main adviser unless there is written academic program policy prohibiting such an arrangement. If an adviser is unable or unwilling to continue to serve, the academic program, with the leadership of the DGS, will assist the student to ensure that a replacement is found.

The Program of Study form must be filed with the Graduate School by the end of the student's second semester of enrollment. Upon approval of the program by the Graduate School, the student is a candidate for the degree. If changes must be made on a student's Program of Study form, a [Program of Study Substitution form](#) is used.

### **Thesis Option**

For students under the thesis option of the MS degree, i.e., students enrolling for ECE 8990, an M-2 [Request for Thesis Committee form](#) is required to be submitted for approval by the department DGS and the Graduate School by the end of the student's second semester.

A thesis committee is composed of three members of the MU faculty: a major adviser from the academic program, a second reader from the academic program, and an outside reader who is a member of the graduate faculty from a different MU graduate program. Upon approval of the department DGS, the student may petition the Graduate School to allow a person who is not a member of the MU graduate faculty to serve as the third reader. The petition should include a written justification for such a request and a copy of the person's curriculum vitae. The Graduate School maintains copies of curriculum vitae previously received and approved, and if such a request is anticipated, the student should contact the Graduate School to see if the curriculum vita of a particular person is already on file. Students need to supply committee members with copies for review/evaluation at least one week prior to the defense date.

Information about submitting the thesis can be found in the [Thesis and Dissertation Guidelines](#).

### Non-Thesis Option

For students who enroll in ECE 8085 (Problems), a problem report rather than a thesis is required. The student is not required to submit the M-2 form (request for a thesis committee). Instead, the student must have the report approved by his or her advisor and two other members of the graduate faculty, forming the student's Problem Committee. It is not required that a member outside of ECE be included, although it is permissible for such a member of the MU graduate faculty to be appointed. At least one of the three members must have a primary academic appointment in ECE. Students need to supply committee members with copies for review /evaluation at least one week prior to the defense date. At that time, an announcement is to be made to the department faculty and graduate students to allow them to attend the defense. The student must defend the problem report to the committee, and make any needed adjustments in format and corrections/clarifications based on input from the committee. A final copy of the problem report must be filed with the ECE graduate office.

### Report of the Master's Examining Committee

The purpose of the M-3 [Report of the Master's Examining Committee Form](#) is to have an official record of the final examining process, whether it is a thesis defense or presentation of a report. The student's committee will indicate on this form if the student has passed the final exam. This form must be submitted to the Graduate School by a deadline for the semester in which the students plan to graduate. For a report option, the 3rd reader of the committee may be from the student's department. The form is due in the Graduate School two weeks prior to graduation.

### Master of Engineering Degree/Electrical and Computer Engineering Focus

The ME degree is designed for entering master students interested in a terminal master's degree, who have a demonstrated need for a professional, non research degree in engineering, and have a academic interest in the department. The Graduate School Application for Admission states that *focus areas are not official emphasis areas and are not listed on the MU transcripts*. Hence,, the transcript and Diploma for any student completing an ME degree will only indicate Master of Engineering, with no designation of the ECE Department.

The entrance requirements for the ME degree/Electrical and Computer Engineering Focus are the same as for the MS EE and MS CmpE degrees. They are repeated here for completeness.

### Entrance Requirements for the ME Program

- GPA: 3.0 (with A = 4.0) in the last 60 hours of the BS program
- Minimum **GRE** scores:

<i>When did you take the GRE?</i>	Quantitative	Verbal	Analytical
Prior to August 1, 2011	80 <sup>th</sup> percentile	<i>will be considered</i>	<i>will be considered</i>
On or After August 1, 2011	80 <sup>th</sup> percentile	Will be considered	Will be considered

*International applicants only:*

- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
80	550

- Minimum **Academic IELTS** scores:

Listening	5.5
Reading	5.5
Writing	5.5
Speaking	5.5

- 3 letters of recommendation
- Statement of purpose
- Transcripts

Note: When registering for the GRE and TOEFL exams, be sure to designate the University of Missouri-Columbia and your program of interest as locations to receive the scores. MU's Institutional Code for the GRE and TOEFL is: 6875.

## Doctorate in Electrical and Computer Engineering

### Admission Contact Information

349 Engineering Building West  
 Columbia, MO 65211  
 573-882-4436  
 Email: [umcengrecegradoff@missouri.edu](mailto:umcengrecegradoff@missouri.edu)

The ECE department offers the Doctor of Philosophy in Electrical and Computer Engineering.

### Admission Criteria for the PhD Electrical or Computer Engineering

Deadline for Fall entrance: February 15  
 Deadline for Spring entrance: September 1

- Minimum GPA: 3.5 (with A = 4.0) in the last 60 hours of the MS graded coursework
- Minimum **GRE** scores:

<i>When did you take the GRE?</i>	Quantitative	Verbal	Analytical
Prior to August 1, 2011	90 <sup>th</sup> percentile	<i>will be considered</i>	<i>will be considered</i>
On or After August 1, 2011	90 <sup>th</sup> percentile	Will be considered	Will be considered

*International applicants only:*

- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
80	550

- Minimum **Academic IELTS** scores:

Listening	5.5
Reading	5.5
Writing	5.5
Speaking	5.5

- Holds the equivalent of a BS degree in electrical or computer engineering with an outstanding record, or holds the equivalent of an MS degree in electrical or computer engineering

Consideration in doctoral program admissions is given to the applicant's grade trends, experience and maturity, and to the availability of expertise in areas of the applicant's technical interest.

**Required Application Materials:**

- *Statement of Purpose* (upload to the Supplemental information section of the application)
- *Copies of your official transcripts* (upload to the Educational History section of the application)
- *Copies of your GRE scores* (upload to the Test Information section of the application)
- *Copies of your TOEFL or IELTS Scores* (for non-native English speakers only) (upload to the Test Information section of the application)
- *3 letters of Recommendation* (the department accepts electronic recommendations – in the recommendation section of the online application, enter the information for three recommenders. Each recommender will receive an email with instructions on how to complete the recommendation). The department does also accept hard copy letters of recommendation. The letters may be mailed to: Graduate School, 210 Jesse Hall, Columbia, MO 65211.

[To the Graduate School:](#)

**Official Transcripts.** The mailing address is: Graduate School, 210 Jesse Hall, Columbia, MO 65211.

Note: when registering for GRE or TOEFL exams, be sure to designate your program of interest at the University of Missouri-Columbia. MU's Institutional Code is 6875 (no departmental code is necessary).

To be accepted outright by the director of graduate studies (DGS), the student needs to have an MS degree in either Electrical Engineering or Computer Engineering.

Students who meet the academic requirements but have degrees in other engineering or science disciplines can be accepted into the PhD program by the Graduate Program Committee (GPC).

Students who don't meet the above requirements may still be admitted by the GPC if there are mitigating factors. Consideration in doctoral program admissions is given to the applicant's grade trends, experience and maturity, and to the availability of expertise in areas of the applicant's technical interest.

**Outstanding BS students who meet the following requirements may be accepted directly for advisement in the department's doctoral program:**

- Holds the equivalent of a BS degree in electrical or computer engineering
- GRE quantitative score of at least the 90th percentile
- TOEFL score of at least 550 paper-based. IELTS score: 5.5
- A 3.5 or better grad point average (A=4.0) in their undergraduate studies
- Submission of three letters of recommendation from persons familiar with the applicant's engineering or related work
- Submission of a statement of research interests

Additional information can be obtained from the Graduate Division of the Department of Electrical and Computer Engineering, 349 Engineering Building West, Columbia, MO 65211, or via email:

[umcengrecegradoff@missouri.edu](mailto:umcengrecegradoff@missouri.edu)

## **Appeal Process**

All students have the right to a timely formal appeal to the GPC. Upon receipt of an admission decision or disciplinary action, the student has 10 working days in which to request a formal appeal. The DGS will convene a meeting of the GPC, the student, and the student's advocate (if appropriate) within 10 working days of receiving the request. The decision of the GPC at the hearing is final.

## **Transfer of Credit**

The doctoral committee may recommend up to 30 hours of post-baccalaureate graduate credit from an accredited university be transferred toward the total hours required for the doctoral degree. It is the responsibility of the doctoral committee to determine the appropriateness of coursework for transfer credit. All requests for exceptions to this policy must be approved by the Dean of the Graduate School. This policy applies to students who begin their enrollment during the Fall Term 2006 and subsequent semesters.

*(Note: The preceding represents a change in policy and becomes effective for graduate students beginning their doctoral programs during the Fall semester 2006. For students who began their doctoral programs prior to the fall 2006 semester, consult the [appropriate catalog](#) or the Graduate School for policies pertaining to transfer of credit.)*

The committee may recommend that courses taken through MU's Extension division be counted toward the credit hour requirement. Extension or correspondence course work from institutions other than MU may not be used to meet the total hours required for the doctoral degree.

## **Time Limits on Transfer Credits**

All courses to be applied to the plan of study must be completed within 8 years of filing the plan.

## **Requirements to obtain the PhD degree in Electrical Engineering and Computer Engineering**

1. The student must be qualified to be a PhD candidate.

Students admitted with an MS degree must prove competency in a written qualifying examination conducted by a PhD qualifying committee within 3 semesters of admission.

Students admitted directly from a BS degree program must complete the 24 hours of graded coursework requirements of the MS degree during the first two years of their program. This will prepare them for the PhD qualifying examination process, to be passed within 4 semesters after this requirement is satisfied, and will allow them to obtain an MS degree if a thesis or project report is completed and defended, consistent with MS requirements, or to obtain an ME degree once the course work requirement has been satisfied. A student may petition the faculty for an extension of the two year requirement.

2. A minimum of 72 semester hours beyond the BS are required by the Graduate School; the student's doctoral program committee sets the total number of credit hours and specific courses to be completed as part of his/her PhD program. However, the Graduate School requires a minimum of 15 hours of 8000/9000 level classes to be taken at MU exclusive of research, problems, and supervised study.

3. The candidate must pass a written and oral comprehensive examination.

4. The student must complete a doctoral dissertation on a topic approved by his or her Doctoral Advisory Committee and defend the dissertation in an oral final examination.

These PhD requirements apply to ECE graduate students first enrolled in MU ECE in the Fall semester 2007 or later. UM ECE graduate students enrolled prior to Fall semester 2007 may choose to follow the MU ECE PhD requirements that were in effect for their MU ECE graduate admission semester.

### **Selection of an Adviser**

The student selects an adviser or co-advisers, by mutual consent, from doctoral faculty members who are dissertation supervisors in the department or area program in which the major work is planned. In the event that an adviser retires or leaves MU, he/she may continue to serve as a student's adviser unless there is written academic program policy prohibiting such an arrangement. If an adviser is unable or unwilling to continue to serve, the academic program, with the leadership of the director of graduate studies, will assist to ensure that a replacement is found.

### **Doctoral Degree Forms**

By the end of the second semester of study at MU, a student should begin submitting degree program forms which will aid the academic program and the Graduate School in tracking the student's progress toward degree completion. These forms include the following:

- [D1 Qualifying Exam Results & Doctoral Committee Approval\(PDF\)](#)  
Submitted after passing qualifying exams
- [D2 Plan of Study Form \(PDF\)](#)  
Submitted no later than the end of the student's third semester.
- [D3 Result of the Comprehensive Examination \(PDF\)](#)  
Submitted to the Graduate School within one month of exam completion
- [D4 Report of the Doctoral Dissertation Defense \(PDF\)](#)  
Submitted by the Graduate School deadline for the semester in which the students plan to graduate.
- [Change of Committee \(PDF\)](#)
- [Plan of Study Course Substitution Form \(PDF\)](#)

More information is available at: <http://gradschool.missouri.edu/policies/doctoral/requirements/>

### **Qualifying Examination/Process**

To be officially admitted to the PhD program, the student must pass a qualifying examination/process. The student is given two opportunities to pass the Qualifying Examination with a score of 70% or above.

### **Qualifying Exam Rules**

1. To be eligible to take the Qualifying Examination, graduate students must be accepted for advisement in the Ph.D. program. The examination must be passed before the end of his or her second year of advisement as a Ph.D. student. Each student may take the exam twice. Students who have been accepted into the PhD program with a BS degree must complete the 24 hours of graded coursework requirements of the MS degree during the first two years of their program. This will prepare them for the PhD qualifying examination process, to be passed within two years after the requirement is satisfied, and will allow them to obtain an MS degree if a thesis or project report is completed and defended, consistent

with the MS requirements, or to obtain an ME degree once the course work requirement has been satisfied. A student may petition the faculty for an extension of the two year requirement.

2. All eligible students who intend to take the exam must complete the REQUEST FOR QUALIFYING EXAMINATION form and submit it to the ECE Graduate Office within four weeks after the start of the semester. At this time the student will be asked to select two of the seven topic areas over which he or she wishes to be examined. Only students on the approved lists will be allowed to take the exam. When a student submits the REQUEST FOR QUALIFYING EXAMINATION form, the Graduate Office will provide:

- a. The date, time and place of the examination;
- b. A reminder to bring their ID card to the exam.
- c. A copy of the **Qualifying Examination Rules**.
- d. A copy of the **Guidelines For Qualifying Exam Committee**.

3. The examination shall be prepared and administered during the 12<sup>th</sup> week of both the fall and winter semesters by the Qualifying Examination (QE) Committee. The ECE Graduate Committee currently serves as the QE Committee since it contains a representative from each of the 6 focus areas in the department. The Graduate Director will select the specific date, time and place of the exam at the beginning of each semester.

4. It shall be a written examination taken by all students desiring to qualify during the given semester.

5. The exam will contain five questions from each of the two areas selected by the student. Each student must select and answer five questions from this set, with no more than three questions from one area. The exam will be closed book, with two standard pages of notes, front and back, allowed. A book of mathematical tables will be provided by the department. The exam will last four hours.

6. The QE committee shall administer the examination and identify passing candidates. The ECE faculty as a whole have the responsibility to approve that action.

### **Qualifying Examination Guidelines**

These guidelines have been prepared to help maintain consistency in the form and difficulty of the Department's qualifying examination.

1. The QE Committee shall consist of one faculty representative from each of the following topic areas, except Foundations:
  - a. Communications and Signal Processing Area;
  - b. Intelligent Systems Area;
  - c. Physical and Power Electronics Area;
  - d. System Modeling and Control;
  - e. Micro/Nano Electronics;
  - f. Digital/Computer Systems; and
  - g. Applied Physics
  - h. Foundations

The ECE graduate Committee serves as the QE Committee since it contains a representative from each research area. The ECE department chair appoints the Graduate Committee with input from the Graduate Director.

2. The faculty from each topic area will be responsible for maintaining a list of topics which constitute the core material an MS graduate should be expected to have mastered. The members of each group will be responsible for preparing questions for the exam covering topics from the list. For the major core focus area, questions will come from 4000/7000 – 8000 level courses. Questions for the topics in the Foundation area will be from a set of required 3000 level courses.
3. The QE Committee will solicit questions from the faculty group, but the Committee will have the responsibility of combining these questions into a fair, comprehensive exam. The QE Committee member for each group will be responsible for coordinating his or her group. The representatives of each topic group shall call a meeting of all faculty from that group for the purpose of reviewing the exam questions to be submitted to the Qualifying Exam Committee. The group's submission must be approved by a majority vote of those present.
4. Solutions will be graded by faculty members who prepared the questions. The grading must be completed within two weeks after the exam. A guideline is that each question should be doable by a strong MS graduate in 40 to 45 minutes.
5. Solutions will be graded on a 100 point scale with 70 points as a minimum passing grade.
6. Each student's performance will be reviewed by the QE Committee and a majority vote of the QE Committee is required for passing.
7. The QE Committee must report the results of the exam to the ECE Faculty within four weeks of the exam.

## **Courses**

See Electrical and Computer Engineering (ECE) in the myZou online system.

# English Graduate Programs

College of Arts and Science  
114 Tate Hall  
573-882-6421  
<http://english.missouri.edu>

## About the Program

With more than one hundred M.A. and Ph.D students and about 500 undergraduates, we are one of the largest and most diverse departments on the Columbia campus. We offer a wide range of courses in British and American Literature and Creative Writing, as well as special emphases in African Diaspora Studies, Critical Theory, English Language and Linguistics, Folklore and Oral Tradition, and Rhetoric and Composition.

## Degrees

- Master of Arts in English
- Doctor of Philosophy in English

## Subject Areas

Lecture courses, seminars and directed research are available in British and American language and literature, creative writing, folklore and oral tradition, critical theory, rhetoric and composition, language and linguistics, and African diaspora studies.

## Funding

Students admitted to the graduate program usually receive a fellowship or teaching assistantship. Outstanding applicants will also be eligible to compete for a variety of college and university fellowships. The deadline for applications to both the MA and PhD programs is January 1. Announcements of awards are made by early April.

## Publications Experience

Students will also have the opportunity to assist faculty in editing *The Missouri Review*, a nationally recognized journal of fiction, poetry and essays; *Oral Tradition*, the only journal involved in the comparative study of oral traditions; *The Eighteenth Century Novel*; and *The Journal for Early Modern Cultural Studies*.

## English Faculty

David Read  
chair, professor; PhD, University of Chicago.

Noah Heringman  
associate chair, associate professor; PhD, Harvard University.

Samuel Cohen  
director of graduate studies, associate professor; PhD, CUNY.

Elizabeth Chang  
director of undergraduate studies, associate professor; PhD, University of California - Berkeley.

Speer Morgan  
director of creative writing program, professor; PhD, Stanford University.

Aliki Barnstone  
professor; PhD, University of California-Berkeley.

Scott Cairns  
professor; PhD, University of Utah.

John M. Foley  
professor; PhD, University of Massachusetts.

Clenora Hudson-Weems  
professor; PhD, University of Iowa.

George Justice  
professor; PhD, University of Pennsylvania.

Elaine Lawless  
professor; PhD, Indiana University.

Trudy Lewis  
professor; PhD, University of Illinois-Chicago.

Devoney Looser  
professor; PhD, SUNY-Stony Brook.

Patricia Okker  
professor; PhD, University of Illinois-Urbana Champaign.

Karen Piper  
professor; PhD, University of Oregon.

Sw. Anand Prahlad  
professor; PhD, University of California-Los Angeles.

Thomas V. Quirk  
professor; PhD, University of New Mexico.

Ellie Ragland  
professor; PhD, University of Michigan.

Richard B. Schwartz  
professor; PhD, University of Illinois.

Marly Swick  
professor; PhD, The American University.

Nancy West  
professor; PhD, University of North Carolina-Chapel Hill.

Donald Anderson  
professor emeritus; PhD, Duke University.

Robert M. Bender  
professor emeritus; PhD, University of Michigan.

Thomas D. Cooke  
professor emeritus; PhD, University of Pittsburgh.

Albert J. Devlin  
professor emeritus; PhD, University of Kansas.

Howard Fulweiler  
professor emeritus; PhD, University of North Carolina.

Howard Hinkel  
associate professor emeritus; PhD, Tulane University.

Charles H. Hinnant  
professor emeritus; PhD, Columbia University.

Richard A. Hocks  
professor emeritus; PhD, University of North Carolina.

William V. Holtz  
professor emeritus; PhD, University of Michigan.

Winifred B. Horner  
professor emeriti; PhD, University of Michigan.

Douglas G. Hunt  
associate professor emeritus; BA, Oxford University.

Timothy Materer  
professor emeritus; PhD, Stanford University.

Lynne McMahon  
professor emeriti; PhD, University of Utah.

Catherine Parke  
professor emeriti; PhD, Stanford University.

Martha Patton  
Professor emerti; PhD, University of Missouri.

M. Gilbert Porter  
professor emeritus; PhD, University of Oregon.

John R. Roberts  
professor emeritus; PhD, University of Illinois.

Sherod Santos  
professor emeritus; PhD, University of Utah.

Gladys Swan  
associate professor emeriti; MA, Claremont Graduate School.

C. Gilbert Youmans  
professor emeritus; PhD, University of Wisconsin.

Vicki Carstens  
associate professor; PhD, University of California-Los Angeles.

John Evelev  
associate professor; PhD, Duke University.

Elisa Glick  
associate professor; PhD, Brown University.

Matthew Gordon  
associate professor; PhD, University of Michigan.

Andrew Hoberek  
associate professor; PhD, University of Chicago.

William Kerwin  
associate professor; PhD, University of North Carolina-Chapel Hill.

Maureen Konkle  
associate professor; PhD, University of Minnesota.

April Langley  
associate professor; PhD, University of Notre Dame.

Emma Lipton  
associate professor; PhD, Duke University.

Christopher Okonkwo  
associate professor; PhD, Florida State University.

Carsten Strathausen  
associate professor; PhD, University of Oregon.

Donna Strickland  
associate professor; PhD, University of Wisconsin-Milwaukee.

Martha Townsend  
associate professor; PhD, Arizona State University.

Frances Dickey  
assistant professor; PhD, Johns Hopkins University.

Rebecca Dingo  
assistant professor; PhD, The Ohio State University.

Lily Gurton-Wachter  
assistant professor; PhD; University of California-Berkeley.

Sheri-Marie Harrison  
assistant professor; PhD, University of Miami.

Joanna Hearne  
assistant professor; PhD, University of Arizona.

Steve Karian  
assistant professor; PhD; University of Wisconsin-Madison.

Johanna Kramer  
assistant professor; PhD, Cornell University.

Anne Myers  
assistant professor; PhD, UCLA.

Alexandra Socarides  
assistant professor; PhD, Rutgers University.

## **Master of Arts in English**

### **Admission Contact Information**

Victoria Thorp [thorpv@missouri.edu](mailto:thorpv@missouri.edu)  
114A Tate Hall, Department of English; Columbia, MO 65211  
573-882-4676

### **Admission Criteria**

Fall deadline: January 1

- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

- Minimum GRE score: not set
- Minimum GPA: 3.0 overall, higher in courses in major
- Majored in English as an undergraduate, with at least 18 hours in upper division courses in literature or linguistics. Students with other undergraduate majors may be admitted provided their background in

English studies is suitable and provided they complete an appropriate course of preliminary study. Promising students who do not meet one or more of these criteria may at the discretion of the director of graduate studies be encouraged to enroll as non-degree graduate students.

### **Required Application Materials**

*To the Graduate School* (210 Jesse Hall; Columbia, MO 65211):

- All required Graduate School documents (go to website for details)

*To the Program* (go to website for details):

- English Department application form
- GRE scores; The general test is required. Students are also welcome to submit subject test scores, and strongly encouraged to do so if their previous work is in a field other than English.
- 3 letters of recommendation (use departmental form)
- Official transcripts
- Statement of purpose
- 2 10-20 page critical/scholarly papers (1 for creative writing applicants)
- Creative writing applicants: also submit a sample of your fiction (30 pages) and/or poetry (20 pages) or a one-act play
- Supplementary information sheet (for MA/PhD and PhD track applicants only)

### **Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

### **Plan of Study**

The MA is a 4-semester (2-year) program with 30 hours of course work (at least 15 hours at the 8000-level) in English.

- MA students may take up to 6 hours (7000-level or above) outside the English department.
- In addition to literary study, students may also select from among the 6 emphasis areas to accompany the program in British and American Literature: African Diaspora Studies, Creative Writing, Critical Theory, Folklore and Oral Tradition, Language and Linguistics, and Rhetoric and Composition.
- A foreign language is not required for the master's degree.

### **Final Assessment Options**

A student may elect to write an MA thesis (while taking 6 hours of English 8090), to present a portfolio and take an oral exam, or to take a written comprehensive exam based on a reading list.

### **Thesis**

Students who choose the MA thesis (50-75 pages) should, at the outset of master's work, discuss possible thesis topics with the faculty member or members who seem most likely to constitute the student's MA Thesis Committee (two English department members and one outside member). Students present and defend their theses to this committee in an oral examination.

**Portfolio/Oral Exam**

Students electing this option will chose two faculty members to work with in revising two essays previously written during their M.A. work. The Director of Graduate Studies, in consultation with the student, will chose a third faculty member to serve on the student’s portfolio committee. Students will defend the two revised essays, as well as those not chosen for revision, in a two-hour oral exam. The committee may pass or fail the examinee on any part(s) of the portfolio. In the case of partial or total failure, the student will retake the oral portions that were failed and may need to revise further one or both of the revised essays.

**Written Exam Based on Reading List**

The exam consists of three questions answered over a four-hour time period. Students in Literature and in Literature with a Creative Writing Emphasis are assigned to a three-member M.A. Comprehensive Exam Committee and write on three literature-based questions. Students with emphases in African Diaspora, Critical Theory, English Language & Linguistics, Folklore & Oral Tradition, or Rhetoric & Composition are assigned to a committee that includes two members from literature and one member from the emphasis area. They write two literature-based questions and one emphasis-area-based question.

**Satisfactory Progress**

The Department of English expects all candidates to make satisfactory progress toward completing their graduate degrees. The MA should be completed within three calendar years after matriculation. No grades of C will be counted toward the completion of the required number of hours for the MA.

**MA/PhD Track**

The department also offers an MA in an MA/PhD program intended for especially well-prepared students who have BA degrees and know they wish to pursue the PhD. It offers enhanced financial aid and an accelerated time to degree. Students complete MA requirements and begin taking PhD course work in their second year in the program. Academic requirements for the two degrees are identical with the academic requirements for the separate MA and PhD degrees.

**Doctorate in English**

**Admission Contact Information**

Victoria Thorp [thorpv@missouri.edu](mailto:thorpv@missouri.edu)  
 Department of English  
 114A Tate Hall, Columbia, MO 65211  
 573-882-4676

**Admission Criteria**

Fall deadline: January 1

- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

- Minimum GRE score: not set
- MA in English or its equivalent

## Required Application Materials

### To the Graduate School

- All required Graduate School documents (go to website for details)

### To the Program: ([go to website for details](#))

- English department application form
- GRE scores; The general test is required. Students are also welcome to submit subject test scores, and strongly encouraged to do so if their previous work is in a field other than English.
- 3 letters of recommendation (use departmental form)
- Official transcripts
- Statement of purpose
- 2 10-20 page critical/scholarly papers (1 for creative writing applicants)
- Creative writing applicants: also submit a sample of your fiction (30 pages) and/or poetry (20 pages) or a one-act play
- Supplementary information sheet

## Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

## Plan of Study

The PhD is a 5-year program with 30 hours of course work beyond the MA. At least 18 hours in English must be taken at the 8000-level (English 8095 and 9090 do not count toward the 18-hour requirement). Candidates with insufficient background in English may be required to take additional hours upon the recommendation of the advisory committee.

A student may elect one English 8000 problems course (a maximum of three hours of credit), with the prior consent of the director of graduate studies. A minimum of 18 hours of course work beyond the MA (excluding research hours) must be taken in residence at the Columbia campus in order for the candidate to be eligible for a PhD from the University.

## Language Requirement

PhD students should determine how they will fulfill the departmental language requirement in consultation with their faculty advisor and other committee members, since different projects and different areas of study will require different levels of language proficiency. A student's committee can always recommend that the student pursue language study above and beyond the level required by the departmental language requirement for the purpose of their chosen dissertation project.

However, the purpose of the foreign language requirement is to ensure that all students have at least an awareness of their entrance into an international community of scholars and scholarship and ideally an ability to read literature and critical studies in other languages. Although simple fulfillment of the language requirement may not guarantee fluency in another language or culture, it should prepare students to read primary texts related to their fields and equip them with skills to conduct scholarly research on important secondary literature. To this end, the department is committed to the principle that all doctoral students who plan to study language and literature benefit from exposure to another language or languages.

A student may satisfy the foreign language requirement for the PhD in English by demonstrating either 1) basic proficiency in two foreign languages or 2) advanced proficiency in one foreign language.

To demonstrate basic proficiency the student must pass with a grade of B or better a) the intensive introduction to a language or b) the three-semester introductory sequence or c) one course at or beyond the third semester level in the language chosen (such as French or German 4110), or the equivalent of these courses elsewhere. The courses must have been completed or the examinations taken not more than five years prior to the candidate's enrollment in the PhD program. Because not all languages are taught using this format at the University of Missouri, students have the option to demonstrate basic proficiency in one of their two chosen languages by taking an introductory course in another language that is relevant to their research. A student who wishes to obtain this exemption must submit a letter, signed by the student and the chair of his or her committee, explaining why the course is relevant to his or her program of doctoral study. This exemption will be granted only for University of Missouri courses taken during the student's official degree program. Courses taken at another institution, or before the student begins the degree program, are not eligible for this exemption. Students cannot request this exemption for languages taught at MU using the regular structure outlined above (i.e., in a 3-course introductory sequence or a one-semester intensive introduction).

To obtain advanced proficiency the student must either a) pass with a grade of B or better two upper class undergraduate courses (3000- or 4000-level, or the equivalent elsewhere) in the literature of the language chosen or b) pass with a grade of B or better one graduate class (7000- or 8000-level, or the equivalent elsewhere) in the literature of the language chosen. These courses may not be in translation, and any graduate course in a modern language must be taught in that language. Overall, the department recommends taking a graduate-level course as the best option for students who are able to do so, since such courses can also count towards the nine hours of non-English department coursework that PhD students can include in their program of study. Undergraduate language courses (4000-level or below) do not count towards graduate study at the University of Missouri.

The director of graduate studies will work with students to try to arrange for testing for students with proficiency but without course work in an acceptable language (for instance, those who have lived in another country for an extended period of time). This option, and all other exceptions to the language requirement described above, are contingent upon 1) the student's ability to demonstrate a substantial connection between the language in question and his or her program of study and 2) consent of the student's advisor.

### **Doctoral Committee**

By the end of the first year, doctoral students must meet with their advisers to organize a doctoral committee. Students meet with this committee to plan course work and define their primary and secondary fields of study. This meeting satisfies the graduate school requirement for a PhD qualifying examination.

### **Comprehensive Examination**

After all course work, the foreign language requirement and the residency requirement have been completed, the student takes the PhD comprehensive examination. This exam consists of a written section (the Preparatory Essay) and a two-and-a-half hour oral exam. For the comprehensive examination to be successfully completed, the doctoral program committee must vote to pass the student on the entire examination, both written and oral sections, with no more than one dissenting or abstaining vote. If a student fails either part of the exam, he or she will be allowed to retake that part. No student will be allowed to take any part more than twice. All doctoral candidates should realize that no comprehensive exam is limited to the candidate's course work.

## **Dissertation**

As soon as possible after passing the comprehensive examination, a candidate should explore a dissertation topic under the guidance of the student's adviser. The doctoral dissertation is written under the direction of a member of the doctoral faculty at MU.

### **Creative Dissertation Option**

The PhD candidate may choose to write a creative dissertation, which may take the form of a novel, a novella, a book-length collection of short fiction or a collection of poetry. To exercise this option, the candidate must have taken 9 to 12 hours of creative writing seminars as part of the PhD course work.

In addition to the "creative" part of the dissertation, the candidate will compose a prose introduction (2,500- word minimum), to be written after completion of the creative project, to demonstrate the correspondence between the candidate's academic studies and the creative project. The overall length required would be comparable with that of other dissertations approved by the department.

### **Satisfactory Progress**

The Department of English expects all candidates to make satisfactory progress toward completing their graduate degrees. The comprehensive exam should be completed within five calendar years after matriculation, and the PhD should be completed within five calendar years after passing the comprehensive exam. No grades of C will be counted toward the completion of the required number of hours for the PhD.

### **More Information**

For additional information concerning degree programs or for fellowship and assistantship application forms, please write the graduate studies secretary in English, 114 Tate Hall, Columbia, MO 65211; call 573-882-4676; or fax 573-882-5785. Also see the departmental website at <http://english.missouri.edu>.

## **Courses**

See English (ENGLSH) in the myZou online system.

## Fisheries & Wildlife Sciences Graduate Programs

The School of Natural Resources  
302 Anheuser-Busch Natural Resources Building  
573-882-3436  
<http://www.snr.missouri.edu/fw/>

A degree in Fisheries and Wildlife Sciences in the School of Natural Resources is based on a program of study that includes communications, quantitative skills, and basic courses in physical and social sciences. Core classes in biology and ecology and specialized courses that feature animal populations and their aquatic and terrestrial environments enhance the learning experience. Some areas of study include wildlife ecology, water quality, habitat management, fisheries science, and conservation biology.

### Careers

Graduate studies in fisheries, limnology, conservation biology, or wildlife prepare students for careers with state and federal agencies, consulting firms, private conservation organizations, or academic institutions.

### Graduate Certificates

Graduate certificates in conservation biology, college teaching, and geographic information systems (GIS) are available to students who elect to take courses beyond those required for the graduate degree.

### Facilities & Resources

The Department of Fisheries and Wildlife Sciences is housed in the Anheuser-Busch Natural Resources Building. This building provides space for faculty and graduate student offices in close proximity to well-equipped research and teaching laboratories, classrooms, and computer facilities.

### Baskett Wildlife Research and Education Center

The Thomas S. Baskett Wildlife Research and Education Area, formerly known as the Ashland Wildlife Research Area, is a 2,252-acre facility located 5 miles east of Ashland, Missouri, on Highway Y. In use since 1938, it has become an integral part of the School of Natural Resources mission of teaching, research, and extension. The Baskett Area is used as an outdoor laboratory for several classes, including dendrology, ornithology, and wildlife research techniques, and has been the source of more than 150 research publications. For more information see <http://www.aes.missouri.edu/baskett/index.stm>

### The Missouri Cooperative Fish and Wildlife Research Unit

The Missouri Cooperative Fish and Wildlife Research Unit affiliated with the department is operated through a cooperative agreement among the University of Missouri, the Missouri Department of Conservation, and the United States Geological Survey. It is staffed with two Department of the Interior scientists who are members of the university faculty and who offer graduate-level courses and direct graduate student research.

### Vertebrate Collections

The School of Natural Resources also maintains an extensive teaching collection of the vertebrate animals of Missouri, surrounding states, and other countries. The bird and mammal collections contain more than 7,000

specimens. The Glen Smart waterfowl collection consists of more than 200 species of mounted waterfowl of the world. The fish collection contains about 25,000 preserved specimens, including freshwater fishes from Missouri and the Midwest and saltwater fishes from the Atlantic, Pacific, and Gulf coasts.

### **Funding**

Fellowships and teaching and research assistantships are available for most applicants selected for admission. Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details. We require applicants to contact faculty to determine the availability of research assistantships prior to applying to the program.

### **Fisheries and Wildlife Faculty**

John R. Jones  
department chair, professor; PhD, Iowa State University

Mark R. Ryan  
director of School of Natural Resources, professor; PhD, Iowa State University

Douglas B. Noltie  
director of graduate studies, associate professor; PhD, University of Western Ontario

John Faaborg  
professor, Division of Biological Sciences; professor, fisheries and wildlife; PhD, Princeton University

Matthew E. Gompper  
professor; PhD, University of Tennessee

Joshua J. Millspaugh  
professor; PhD, University of Washington

Charles H. Nilon Jr.  
professor; PhD, State University of New York-Syracuse

Robert S. Hayward  
associate professor; PhD, Ohio State University

Dylan C. Kesler  
assistant professor; PhD, Oregon State University

Craig P. Paukert  
cooperative associate professor, unit leader – fisheries, Missouri Cooperative Fish and Wildlife Research Unit; PhD, South Dakota State University

Amanda E. Rosenberg  
cooperative assistant professor; assistant unit leader – fisheries, Missouri Cooperative Fish and Wildlife Research Unit; PhD, Virginia Tech

Elizabeth B. Webb

cooperative assistant professor; assistant unit leader – wildlife, Missouri Cooperative Fish and Wildlife Research Unit; PhD, Texas Tech University

David Galat

cooperative associate professor (emeritus); assistant unit leader-fisheries (assistant unit leader), Missouri Cooperative Fish and Wildlife Research Unit; PhD, Colorado State University

Charles F. Rabeni

cooperative professor (emeritus); Missouri Cooperative Fish and Wildlife Research Unit; PhD, University of Maine

Frank R. Thompson III

cooperative associate professor, project leader-United States Department of Agriculture, Forest Service, North Central Forest Experiment Station; PhD, University of Missouri

Robert Pierce

extension assistant professor; PhD, University of Missouri

Trista Strauch

assistant teaching professor; PhD, Texas A&M

Joanna Whittier

research assistant professor; PhD, Oklahoma State University

Michael Hubbard

adjunct assistant professor; PhD, Iowa State University

David Diamond

adjunct assistant professor; PhD, Texas A&M University

Diana Papoulias

adjunct assistant professor; PhD, University of Missouri

Scott Sowa

adjunct assistant professor; PhD, University of Missouri

Donald Tillitt

adjunct assistant professor; PhD, Michigan State University

Larry Vangilder

adjunct associate professor; PhD, The Ohio State University

Mark Wildhaber

adjunct assistant professor; PhD, North Carolina State University

## Application and Admission Information

### Admission Contact Information

Graduate Secretary

302 Anheuser-Busch Natural Resources Building; Columbia, MO 65211

Janice Faaborg; [faaborgje@missouri.edu](mailto:faaborgje@missouri.edu); 573-882-9422 or Karen Decker; [deckerkf@missouri.edu](mailto:deckerkf@missouri.edu); 573-882-3436

### Admission Criteria

Fall deadline: Rolling

- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
79	550

- Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative
Prior to August 1, 2011	1100
On or After August 1, 2011	1100 equivalent scores

- Minimum GPA: 3.2 in last 60 hours of undergraduate coursework.
- Experience in research or management of natural resources. Practical skills are strongly considered.

### Required Application Materials

#### [To the Graduate School:](#)

- All application materials must be submitted to the [Apply Yourself](#) online application system
- All required Graduate School documents
- A minimum of three letters of recommendation and the accompanying evaluation sheets from people who can attest to the candidate's scholastic and conservation field work abilities
- Departmental application
- Written response to 1 of 5 questions listed on the Fisheries and Wildlife Sciences Graduate Program [Admissions page](#)
- GRE scores
- TOEFL scores (when applicable)
- Publications (optional)
- Resumé or CV

**We require applicants to contact specific faculty to determine the availability of research assistantships prior to applying to the program.**

An applicant contemplating graduate work in fisheries, limnology, conservation biology, or wildlife should have a strong background in biological and physical sciences, including biology, botany, zoology, ecology, physiology, and genetics. In addition, such taxonomic courses as plant taxonomy, invertebrate zoology, ichthyology,

ornithology, and mammalogy are highly desirable, as is a background in chemistry, mathematics, statistics, and physics.

A background of 25 to 30 hours in biological sciences courses is desirable. Minor deficiencies may be remedied during the graduate program; major deficiencies may require preparatory coursework prior to consideration for admission.

Fisheries and Wildlife Sciences degrees emphasize resource management at organismal, population, or ecosystem scales. An emphasis on resource management helps distinguish our program from basic biology; therefore, course work in fisheries or wildlife management, environmental science, resource policy, or other applied ecology fields is advantageous.

## **Master of Science in Fisheries & Wildlife Sciences**

Master's students must complete, with a B average or better, a minimum of 30 hours of course work (15 hours or more at the 8000 course level). Research, problems, special investigations, and special readings courses shall not exceed 12 of the 30 hours.

### **Plan of Study**

Candidates are expected to design and have approved by their committee a plan of study during their first semester in residence and a thesis proposal by their second semester.

### **Thesis & Oral Examination**

A thesis acceptable to the student's graduate committee shall be completed and defended in a final oral examination; all candidates must complete the oral examination and a final thesis seminar before the degree is conferred.

## **Doctorate in Fisheries & Wildlife Sciences**

The Doctor of Philosophy degree in fisheries and wildlife is designed to prepare students for careers in research and teaching or other advanced scientific, academic, or professional careers.

### **Degree Requirements**

The PhD degree is conferred only upon those students who, after extensive study, have demonstrated a high level of achievement in their particular specialization in fisheries and wildlife and have completed independent research contributing to knowledge in the field.

### **Doctoral Committee**

A student pursuing a PhD is expected to pass qualifying, comprehensive, and final examinations administered by the student's doctoral committee. The committee shall be composed of a minimum of 4 members of the MU graduate faculty and will include at least 3 members from the student's doctoral degree program and 1 outside member from a different MU program. At least 2 of the committee members must be MU doctoral faculty.

### **Qualifying Examination**

The qualifying examination includes a general knowledge examination and is designed to evaluate the student's background and determine areas that require further course work.

### **Plan of Study**

The doctoral plan of study requires a minimum of 72 hours of graduate credit from courses taken at MU, transfer credits, and research hours. This program must include at least 15 hours of 8000- and 9000-level course work exclusive of problems, readings, and research credits. Up to 30 hours from an accredited master's program may be applied to the plan of study, subject to committee approval.

### **Residency Requirement**

Students enrolled in the PhD program must also satisfy a residency requirement of at least 3 consecutive semesters in which the student is in residence on the MU campus and enrolled for 6 or more credit hours, unless a prior exception is approved by the director of graduate studies.

### **Courses**

See Fisheries and Wildlife (F\_W) in the myZou online system.

## Food Science Graduate Programs

College of Agriculture, Food and Natural Resources  
256 William Stringer Wing  
573-882-4113  
<http://foodscience.missouri.edu>

### Careers

Candidates are prepared for careers in research or advanced professional careers in the food industry, teaching positions in community and junior colleges, 4-year colleges and in supporting roles in academics or industry. Graduates also may play leadership roles in extension or other adult education programs, food production and quality assurance, or government agencies. Selected careers include research and development for private industry or the federal government, food plant supervision, technical operation, product development, nutrition, distribution, food service and food regulatory work.

### Facilities and Resources

Departmental cooperation with the food industry is excellent. Special facilities for food science study and research include chemical, microbiological, analytical laboratories and pilot plants to study food processing.

### Degrees Offered

Master of Science (MS)  
Doctor of Philosophy (PhD)

### Funding

Assistantships are available to qualified students from funds provided by the Agricultural Experiment Station, research contracts and grants. Fellowships supported by industry and professional societies, based on national competition, are also available.

### Food Science Faculty

Azlin Mustapha  
director of graduate studies, associate professor; PhD, University of Nebraska.

Fu-Hung Hsieh  
professor; PhD, University of Minnesota.

Mark Ellersieck  
research professor emeritus; PhD, University of Missouri.

Robert T. Marshall  
professor emeritus; PhD, University of Missouri.

Andrew D. Clarke  
associate professor; PhD, Colorado State University.

Seonghee Cho  
associate professor; PhD, University of Nevada - Las Vegas.

James Groves  
associate professor; PhD, Kansas State University.

Ingolf Gruen  
food science program chair, undergraduate advisor chair, associate professor; PhD, Virginia Tech.

Dae-Young Kim  
associate professor; PhD, Purdue University.

Mengshi Lin  
associate professor; PhD, Washington State University.

Leslie Jett  
assistant teaching professor; PhD, University of Missouri.

Anthony Peccoux  
assistant professor; PhD, University of  
Bordeaux, France

Bongkosh Vardhanabhuti  
assistant professor; PhD, North Carolina State University.

Lillian Occena-Po  
adjunct associate professor; PhD, Michigan State University.

Guolu Zheng  
adjunct assistant professor; PhD, University of Arkansas-Fayetteville.

## **Master of Science in Food Science**

Admission Contact Information  
JoAnn Lewis (lewisj@missouri.edu)  
256 William Stringer Wing  
Columbia, MO 65211-5160  
573-882-4113

### **Admission Criteria**

Fall deadline: April 1  
Spring deadline: October 31

- Minimum GPA: 3.0
- BS in food science from an accredited university

- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)	IELTS
79	550	5.5

- Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative*	Analytical
Prior to August 1, 2011	1000	3.5
On or After August 1, 2011	297	3.5

\*Note: neither the verbal or quantitative section can be below 400 or its equivalent score.

### Required Application Materials

*To the Graduate School:*

All required Graduate School documents

3 letters of recommendation (submitted through online Graduate School application or mailed directly to Food Science)

*To the Program:*

<http://foodscience.missouri.edu/graduate/>

Refer to the information at the link above

### Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. The food science program does not. Include the financial assistance request in the statement of purpose.

## Doctorate in Food Science

### Admission Contact Information

JoAnn Lewis (lewisj@missouri.edu)

256 William Stringer Wing

Columbia, MO 65211-5160

573-882-4113

### Admission Criteria

Fall deadline: April 1

Spring deadline: October 31

- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)	IELTS
79	550	5.5

- Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative*	Analytical
Prior to August 1, 2011	1000	3.5
On or After August 1, 2011	297	3.5

\*Note: neither the verbal or quantitative section can be below 400 or its equivalent score.

Minimum GPA: 3.0

BS and an MS in food science from an accredited university or equivalent experience. In rare instances, an exceptional student will be allowed to study for the PhD without first completing the MS

### About the PhD Program

The PhD degree can lead to careers in research, college or university teaching and research, or to administrative positions related to foods.

### Degree Requirements

Requiring a minimum of 2 years beyond the master's degree, the doctor of philosophy degree prepares students for teaching, research or other professional careers in food science. A student must:

- Satisfactorily complete the master's degree program or its equivalent with a GPA of 3.0 or better
- Satisfactorily complete the written and oral qualifying examination
- Show evidence of satisfactory performance in the major area of study, inclusive of grade trends and comply with other Graduate School requirements for admission.

### Plan of Study

The program, to be completed under the guidance of a doctoral program committee, consists of:

- A course of study designed to fit the student's academic background and objectives — one-third of the credit earned under the plan of study is research credit, the remainder is in courses selected from food science and its supporting areas, such as chemistry, microbiology, physiology, nutrition, economics, marketing, management and statistics
- Acceptance of a dissertation based on research proposed, performed and defended by the student.

To satisfy degree requirements, a candidate must:

- prepare and defend a research proposal within the first two semesters.. The proposal is designed to test the student's ability to undertake advanced learning and carry out independent research.
- complete the Plan of Study and defend the PhD project proposal
- pass the comprehensive examination over the approved course of study
- present an acceptable dissertation and defend it in a final examination
- present an exit seminar on research
- prepare at least 1 manuscript, acceptable for submission to a refereed journal, before approval of the D-4 (Report of the Dissertation Defense Form) by the director of graduate studies

### Courses

See FOOD SCIENCE (F\_S) in the MyZou online system.

## Forestry Graduate Programs

School of Natural Resources  
203 Anheuser-Busch Natural Resources Building  
573-882-7242  
<http://snr.missouri.edu/forestry/academics/graduate-program.php>

Forestry encompasses both basic and applied science, involving specific interests ranging from biophysical processes in forested ecosystems to plant population studies, but also recognizes overarching fundamental issues of sustainability of natural resources. Forestry graduate education prepares students for opportunities in a variety of disciplines such as forest ecology, tree physiology, hydrology, conservation, policy and silviculture.

### Degrees and Areas of Study

Graduate research programs in the Department of Forestry lead to an MS or PhD in forestry. Specialized graduate education can focus on, but is not limited to, studies in agroforestry, biometrics, community and landscape ecology, dendrochronology, economics, entomology, fire ecology, hydrology, physiological ecology, physiology, policy, silviculture, soils, forest management, stand dynamics, water quality and wood quality.

### Graduate Certificates

Graduate certificates are available in conservation biology (<http://conservbio.missouri.edu/description.php>) and geographic information systems (GIS) (<http://www.geog.missouri.edu/qiscert/index.html>) to students who elect to take courses beyond those required for the graduate degree.

### Partnerships

The graduate program in the Department of Forestry involves partnerships with the USDA Forest Service, Northern Research Station, the Missouri Department of Conservation, the Missouri Department of Natural Resources, the US Geological Survey, the National Park Service and the United States Fish and Wildlife Service. Students may work closely with scientists in these agencies who have affiliated faculty appointments.

### Career Opportunities

A graduate degree in Forestry is designed to prepare students for careers in academic institutions, consulting firms, non-governmental organizations, industry and state and federal agencies.

### Facilities and Resources

Facilities available for research include well-equipped biometrics, ecology, dendrochronology, hydrology, physiology and wood quality laboratories in the Anheuser-Busch Natural Resources Building on campus at Columbia, the Horticultural and Agroforestry Research Center (HARC) and the Baskett Research and Education Area.

*Horticulture and Agroforestry Research Center (HARC)*. HARC is a 540-acre tract about 30 miles northwest of campus near New Franklin, Mo. It is in the loess hills overlooking the Missouri River Valley and is well-suited for agroforestry, agronomic and horticultural field studies.

*Baskett Research Area.* Thomas Baskett Wildlife Research and Education Area, formerly known as the Ashland Wildlife Research Area, is a 2,252-acre facility located five miles east of Ashland, Missouri. In use since 1938, Baskett has become an integral part of the School of Natural Resources mission of teaching, research, and extension. The Baskett Research Area is used as an outdoor laboratory for several classes including dendrology, forest ecology, ornithology, and wildlife research techniques, and has been the source of over 150 research publications. For more information see <http://www.aes.missouri.edu/baskett/>

*Schnabel Woods.* The Schnabel Arboretum Tract is an 80-acre tract of late-successional forest on the bluffs near the Missouri River. It is located eight miles southwest of the MU campus near the river community of McBaine, adjacent to the Missouri Department of Conservation Eagle Bluff Conservation Area and the cross-state Katy Trail State Park. The Schnabel Tract represents a unique, relatively undisturbed example of a river-hills forest ecosystem complex not commonly found in Missouri. The area is used for undergraduate instruction, graduate research and demonstration.

*University Forest.* University Forest is located at the southeastern edge of the Missouri Ozarks, 14 miles north of Poplar Bluff and near Lake Wappapello. It is uniquely situated at the junction of two major ecological sections of the state: The Ozarks and the Mississippi Alluvial Basin. Three forest ecosystem types converge near this area: upland oak-hickory, oak-shortleaf pine and bottomland hardwoods. Using the adjacent 7,000-acre University State Forest managed by the Missouri Department of Conservation, this area is used routinely by the faculty and students of the School of Natural Resources for research.

*Additional Locations.* In addition, lands of the United States Forest Service, United States Fish and Wildlife Service, Corps of Engineers, National Park Service, Missouri Department of Conservation and the Missouri Department of Natural Resources are available for certain research activities. Numerous research projects have also taken place on private lands.

## **Funding**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program Web site or ask the program contact for details. A limited number of research assistantships are available. They are awarded based on (1.) demonstrated scholastic accomplishment; (2.) GRE scores; and (3.) experience related to the proposed field of study.

## **Forestry Faculty**

Francisco X. Aguilar  
assistant professor; PhD, Louisiana State University.

John P. Dwyer  
associate professor; PhD, University of Missouri.

Michael A. Gold  
research professor; PhD, Michigan State University.

Richard P. Guyette  
research professor; PhD, University of Missouri.

Hong He  
professor; PhD, Chinese Academy of Sciences, China.

Jason A. Hubbart  
assistant professor; PhD, University of Idaho.

Shibu Jose  
H.E. Garrett Endowed professor; PhD, Purdue University.

David R. Larsen  
professor; PhD, University of Washington.

Rose-Marie Muzika  
professor; associate director of academic programs, School of Natural Resources, PhD, Michigan State University.

Stephen G. Pallardy  
professor, director of graduate studies; PhD, University of Wisconsin – Madison.

Henry E. Stelzer  
associate professor; chair, PhD, Purdue University.

Michael Stambaugh,  
research assistant professor; PhD, University of Missouri

Mark Coggeshall,  
research assistant professor; PhD, University of Missouri

Marc J. Linit  
professor, associate dean, College of Agriculture, Food and Natural Resources; PhD, University of Arkansas.

Thomas L. Payne  
professor, vice-chancellor and dean, College of Agriculture, Food and Natural Resources; PhD, University of California-Riverside.

Steve R. Shifley  
cooperative associate professor; USDA Forest Service, PhD, University of Minnesota.

Jerry Van Sambeek  
cooperative associate professor; USDA Forest Service, PhD, Washington University.

Daniel Dey  
cooperative assistant professor; USDA Forest Service, PhD, University of Missouri.

John Kabrick  
adjunct assistant professor; USDA Forest Service, PhD, University of Wisconsin-Madison.

## Application and Admission Information

### Admission Contact Information

Dr. Stephen G. Pallardy  
203 ABNR Bldg.  
[PallardyS@missouri.edu](mailto:PallardyS@missouri.edu)

### Admission Criteria

Fall deadline: May 15  
Spring deadline: October 15  
Summer deadline: March 15

- Minimum GPA: 3.0 in last 60 hours
- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
80	550

- Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative*
Prior to August 1, 2011	1100
On or After August 1, 2011	300

\* 50<sup>th</sup> percentile or higher preferred in each category

Particular attention is given to the record of the last 2 years of undergraduate study, and/or the type and quality of professional experience since completion of the undergraduate degree. Doctoral candidates must demonstrate a higher level of achievement in each of these criteria.

### Required Application Materials

#### [To the Graduate School:](#)

All required Graduate School documents  
3 letters of recommendation from individuals qualified to evaluate scholarly capacity and professional qualities  
Letter of intent

#### [To the Program:](#)

Departmental application (use form)  
GRE scores

## Master of Science in Forestry

The master's degree in forestry is designed for students with an undergraduate degree in forestry or in one of the biological, physical or social sciences basic to forestry. The MS degree may lead students with previous professional education in forestry to prepare for research and or teaching, or to provide greater depth in a specialized area.

The MS is a research-based degree. The student is expected to work closely with a faculty advisor on original research, with the approval of a graduate committee. Advanced coursework is expected to complement and enhance the research project. Students generally complete a thesis and are expected to publish their research

results in peer-reviewed scientific journals. A non-thesis option also is available that requires original research normally culminating in authorship of a substantial research paper.

### **Students without a Forestry Undergraduate Degree**

Those without a baccalaureate degree in forestry may wish to further their education in forest science or to attain professional competence by completing course work in forestry. Work required of students without a forestry degree who want a professional forestry education includes courses in dendrology, utilization of forest resources, resource measurements, forest inventory, forest fire control and use, forest ecology, silviculture, forest information systems, watershed management, forest management, forest economics, and public resource policy. Some of these courses do not carry graduate credit.

### **MS in Forestry Plan of Study**

To attain the master's degree, 30 hours of course work must be completed; 15 hours or more must be 8000+ level. Research, problems, special investigations and special readings courses must not exceed 12 of the 30 hours. The GPA of all course work submitted for the degree must be 3.0 or better.

### **Thesis & Exams**

A master's thesis, or a minimum of 5 semester hours of non-thesis research acceptable to the student's committee, shall be completed before the final examination. Research toward a thesis normally shall not exceed 8 hours. Thesis requirements and defense are as defined by the MU Graduate School. A final oral examination is given to all candidates before completion of the degree.

### **Doctorate in Forestry**

The PhD degree in forestry is designed to prepare students for academic careers in research and teaching or other advanced scientific or professional careers. Students entering the PhD program will often have a master's degree, but this is not an absolute requirement.

PhD candidates conduct original research under the supervision of a faculty advisor or advisors and with the participation of a doctoral committee. Students are expected to engage in coursework to prepare for careers in research, industry or academia. The Department of Forestry expects students to take part in professional and educational activities by giving presentations at conferences and presenting seminars. Ph.D. candidates complete a dissertation and are expected to publish their research results in peer-reviewed scientific journals.

### **Doctoral Committee in Forestry**

The student pursuing the doctoral program is expected to pass qualifying, comprehensive and final examinations administered by the student's doctoral committee. This committee is structured as defined by the MU Graduate School and must have a minimum of 4 members, at least 3 members must be from the student's doctoral degree program and 1 outside member from a different MU program. The Forestry Department strongly recommends a 5-person committee for Ph.D. students. At least 2 of the committee members must be MU doctoral faculty.

### **Doctoral Qualifying Examination**

The qualifying examination determines whether the student's background is adequate to enter the PhD program. It also is intended to ascertain if there are areas of weakness in which a candidate will be required to gain background through appropriate course work or areas that prohibit entry into the program.

### **Doctoral Comprehensive Examination**

The objectives of the comprehensive examination are twofold:

1. to determine if a student has acquired sufficient depth and breadth of knowledge in selected areas of concentration
2. to evaluate the candidate's capacity to apply that knowledge in solving applied or theoretical problems.

### **Final Examination**

The final examination is directed primarily toward exploration of the dissertation research project.

### **Foreign Language Requirements**

Requirements for foreign language and a collateral field, if any, are determined by the student's doctoral committee. The doctoral committee is expected to make an assessment of the student's needs as they relate to the student's background and educational objectives.

### **Dissertation**

An independent scholarly dissertation approved by the student's adviser and doctoral committee must be completed.

### **Graduation Requirements**

The PhD degree is conferred only upon those students who, after extensive study, have demonstrated a high level of achievement in their particular specialization in forestry and have completed significant independent research in their field.

### **Courses**

See Forestry (FOREST) in the myZou online system.

## Genetics Area Program Doctorate

Genetics Area Program  
241 Engineering West  
Columbia, MO 65211  
573-882-9007  
877-GENE-PHD (877-436-3743)  
<http://www.gap.missouri.edu/>  
Email: [gap@missouri.edu](mailto:gap@missouri.edu)

### About the Program

The Genetics Area Program prepares graduates for teaching and research careers in genetics. The curriculum provides broad, individual training tailored to the career objectives of the student.

### Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

### Genetics Area Program Faculty

#### Stephen Alexander

professor of biological sciences; PhD, Brandeis University. Mechanisms of DNA repair and resistance to anticancer drugs; mechanisms of protein secretion.

#### Karen L. Bennett

professor of molecular microbiology and immunology; PhD, State University of New York-Buffalo. Developmental biology of nematodes, molecular analysis of germline determination.

#### James A. Birchler

professor of biological sciences; PhD, Indiana University. Gene expression in *Drosophila* and maize.

#### Elizabeth A. Bryda

associate professor of veterinary pathobiology; PhD, Rutgers University and University of Medicine and Dentistry of NJ. Molecular genetic analysis of mouse models of renal disease and auditory disorders.

#### Donald Burke

associate professor of molecular microbiology and immunology; PhD, University of California-Berkeley. Mechanism and evolution of catalysis by ribozymes and the molecular basis of retroviral inhibition by RNA-based drugs.

#### John F. Cannon

chair of Genetics Area Program, associate professor of molecular microbiology and immunology; PhD, University of Wisconsin-Madison. Genetics of *Saccharomyces cerevisiae*; role of protein phosphatase in cell cycle regulation; molecular genetic analysis of RAS function.

Anand Chandrasekhar

associate professor of biological sciences; PhD, University of Iowa. Molecular and cellular analysis of branchiomotor neuron development in zebrafish.

Arun K. Chatterjee

professor of plant pathology; PhD, University of Guelph. Plant-microbe interaction, regulation of expression of virulence genes in plant pathogenic bacteria, protein targeting in gram-negative bacteria; genetics of antibiotic production in fluorescent *Pseudomonas*.

Georgia L. Davis

associate professor of agronomy; PhD, University of Wisconsin. Genetic and physical mapping in maize, identification of maize genes to reduce aflatoxin.

George Davis

professor of medical pharmacology and physiology; PhD, MD, University of California-San Diego. angiogenesis, wound repair and cancer research

Dongsheng Duan

professor of molecular microbiology and immunology; PhD, University of Pennsylvania. Application of recombinant adeno-associated virus (rAAV) in muscle gene therapy.

David W. Emerich

professor of biochemistry; PhD, University of Wisconsin-Madison. Symbiotic nitrogen fixation.

Walter Gassmann

associate professor of plant microbiology and pathology; PhD University of California-San Diego. Molecular mechanisms of plant disease resistance and bacterial pathogenicity structure/function analysis of plant resistance and bacterial avirulence genes.

Sherry Flint-Garcia

Adjunct assistant professor of plant sciences; PhD, University of Missouri. Genetics and breeding to understand agronomic traits in maize.

Craig Franklin

associate professor of veterinary pathology; PhD, DVM, University of Missouri. Pathogenesis of chronic intestinal mucosal inflammation and rodent animal models for human disease.

William R. Folk

professor of biochemistry; PhD, Stanford University. Gene expression in plants and animals, with particular emphasis upon use of molecular genetics to reduce cancer morbidity and improve human nutrition.

Michael Garcia

assistant professor of biological sciences; PhD, Mayo Clinic College of Medicine. Genetics and cell biology of neuronal development.

Miriam W. Golomb

associate professor of biological sciences; PhD, University of California-Berkeley. CBF transcription factors in cell cycle and development. Virulence genes in *H. influenzae*.

Jerome Gorski

professor of child health; MD, Northwestern University. Molecular genetics of birth defects.

Thomas J. Guilfoyle

professor of biochemistry; PhD, University of Illinois. RNA polymerase, hormone-regulated gene expression, in vitro transcription.

J. Perry Gustafson

professor of agronomy; PhD, University of California-Davis. Cereal genetics.

Gretchen Hagen

research professor of biochemistry; PhD, University of Georgia. Plant molecular biology, control of gene expression by plant hormones.

Mark Hannink

professor of biochemistry; PhD, University of California-San Diego. Mechanisms of oncogenic transformation by retroviral oncogenes, transcription factors and gene regulation. Embryo-toxicity of environmental contaminants.

Gerald Hazelbauer

professor and chair of biochemistry; PhD University of Wisconsin. Transmembrane receptors, signaling, sensory adaptation and protein kinases in bacterial chemotaxis.

Lene J. Holland

associate professor, medical pharmacology & physiology; PhD, University of California-San Francisco. Regulation of gene expression by steroid hormones.

Timothy P. Holtsford

associate professor of biological sciences; PhD, University of California-Riverside. Evolution of floral traits, molecular evolution, systematics, conservation genetics.

Gary S. Johnson

associate professor, veterinary pathobiology; DVM, PhD, Kansas State University. Inherited diseases of man and domestic animals. Genetic risk factors for diabetic complications and cardiovascular diseases.

Martin L. Katz

professor of ophthalmology; PhD, University of California-Santa Cruz. Molecular basis for disease pathology in the hereditary ceroid-lipofuscinoses.

Toni Kazic

associate professor of computer science; PhD, University of Pennsylvania. Computational biology, bioinformatics, formal languages, and analysis of networks.

Mark Kirk

associate professor of biological sciences; PhD, Rice University. Stem cell therapies for neurodegenerative diseases & CNS tumors.

Hari B. Krishnan

adjunct professor of agronomy; PhD, Washington State University. Modification of soybean seed composition, Rhizobium-soybean symbiosis.

David R. Lee

associate professor of molecular microbiology and immunology; PhD, University of Virginia. Major histocompatibility complex class I antigen presentation. Induction of CD8+ T lymphocyte responses. Activation of dendritic cells.

Mannie Liscum

professor of biological sciences; PhD, The Ohio State University. Photosignal transduction and hormone responses in higher plants.

Chris Lorson

professor of veterinary pathobiology; PhD, Washington University. Molecular genetics; spinal muscular atrophy; RNA processing.

Dennis B. Lubahn

professor of biochemistry/child health; PhD, Duke University. Biochemical genetics of estrogen and receptors: environmental and phytoestrogen action in ER-minus mice. Estrogens and DNA methylation/imprinting, and their functions in herbal medicine.

Mark E. Martin

associate professor of biochemistry; PhD, University of Mississippi Medical Center. Regulation of transcription factor activity.

Bruce A. McClure

professor of biochemistry; PhD, University of Minnesota. Self-incompatibility, biochemical and genetic basis for pollen rejection.

Michael D. McMullen

adjunct associate professor of agronomy; PhD, University of Chicago. Genetic and molecular basis of plant responses to biological stresses.

Kathleen J. Newton

professor of biological sciences, PhD; Indiana University. Plant mitochondrial genetics.

Henry Nguyen

professor of plant sciences; PhD, University of Missouri. Molecular genetics of abiotic stress tolerance and plant productivity in stress environments and the application of genomics and genetic engineering technologies to crop improvement.

Brenda Peculis

associate professor of biochemistry; PhD, John Hopkins University. Ribosome biogenesis; RNA:RNA and RNA:protein interactions; RNA structure; nucleic acid biochemistry; protein structure/function.

Charlotte L. Phillips

associate professor of biochemistry/child health; PhD, North Carolina State University. Inherited connective tissue diseases and metabolic disorders.

David J. Pintel

professor of molecular microbiology and immunology; PhD, University of Illinois Medical School. Molecular genetics and biochemistry of parvovirus gene expression and RNA processing.

R. Michael Roberts

Curators' Professor of Animal Sciences; DPhil, Oxford University. Maternal embryo interactions in early pregnancy.

Stefan Sarafianos

assistant professor of molecular microbiology and immunology; PhD, Georgetown University. Structural biology and enzymology of viral replication enzymes.

James E. Schoelz

professor of plant pathology; PhD, University of Kentucky. Host specificity of plant viruses.

Raymond D. Semlitsch

professor of biological sciences; PhD, University of Georgia. Evolution of complex life cycles using amphibians as a model system.

David Setzer

professor of biological sciences; PhD, Stanford University. DNA-protein interactions; biochemical mechanisms in the transcription of eukaryotic genes; mechanisms of transcription termination; specific analysis of the zinc finger protein TFIIA and 5S rRNA gene regulation.

David A. Sleper

professor of agronomy; PhD, University of Wisconsin-Madison. Breeding and genetics of tall fescue and soybean.

Gary Stacey

professor of plant microbiology and pathology; PhD, University of Texas. Molecular biology of plant-microbe interactions; symbiotic nitrogen fixation; soybean biotechnology; and peptide transport in plants.

Change Tan

associate professor of biological sciences; PhD, University of Pennsylvania. Generating conditional mutations and studying cytokinesis during *Drosophila* gametogenesis.

John J. Tanner

professor of chemistry; PhD, Brown University. X-ray crystallography, proteins and enzymes, molecular dynamics simulations.

Jerry Taylor

professor of animal sciences; PhD Texas A&M. ID of genes responsible to variation in milk production, meat quality and feed conversion efficiency in cattle.

John C. Walker

professor of biological sciences; PhD, University of Georgia. Molecular mechanisms regulating cellular signaling in plants.

Habib Zaghouani

professor of molecular microbiology & immunology; PhD University of Paris. Molecular mechanisms of T cell tolerance.

Troy Zars

associate professor of biological sciences; PhD, University of Notre Dame. Molecular, genetic, and systems approaches to memory processes in *Drosophila*.

Shuqun Zhang

associate professor of biochemistry; PhD, University of Texas at Austin. Function of mitogen-activated protein kinases in plant stress responses.

## Admission Criteria

Fall deadline: January 15

- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
93	580

- Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative	Analytical
Prior to August 1, 2011	1100	4.5
On or After August 1, 2011	302	4.5

- Minimum GPA: 3.0 in last 60 hours
- Bachelor's degree
- One or more courses in each of the following: organic chemistry, biochemistry, mathematics (calculus and statistics), physics, introductory genetics
- Research experience highly desirable
- Broad background in biology

Note: Deficiencies in the subjects listed can be remedied after admission.

## Required Application Materials

### **To the Graduate School:**

All required Graduate School documents

### **To the Genetics Area Program:**

*Genetics Area Program application (download form from website)*

GRE scores

TOEFL scores (international applicants)

3 letters of recommendation (use provided form)

Personal statement

## Degree Requirements

The minimum requirements for the PhD degree are:

- advanced courses in genetics, biochemistry and molecular biology
- regular participation in the genetics area seminar program
- successful completion of a comprehensive examination

- at least one semester of teaching in a genetics course
- 3 seminar presentations
- research, dissertation and oral defense

These are *beyond* the Graduate School's requirements. Others are determined in consultation between the student and faculty adviser.

**Course Information:**

Contact the Genetics Area Program Doctorate

Email: [gap@missouri.edu](mailto:gap@missouri.edu)

Phone : 573-882-9007 or 1-877-436-3743.

## Geography Graduate Program

College of Arts and Sciences  
8 Stewart Hall  
573-882-8370  
<http://www.geog.missouri.edu/>

### About Geography

The Department of Geography offers a Master of Arts degree that prepares students for a variety of professions, including careers in academics, research, public service, and the private sector. The MA program has a high success rate of preparing students for doctoral study in top-tier geography departments across the United States.

A primary strength of the department is the blending of major research facilities and opportunities with individual student-faculty interaction to build a strong sense of community. Students interested in questions of human geography, the physical environment, or geographic information sciences will find that the department has facilities and faculty expertise to build a successful plan of study.

Core areas of study in the department include human geography, nature/society relationships, physical-environmental systems, and application of geographic information sciences. The faculty has an active program of research and field work in North America, the Middle East and Middle America. They pride themselves on a creative instructional and interdisciplinary pattern of activity. The department emphasizes close contact between faculty and graduate students.

Individualized graduate programs allow latitude in areas of specialization such as regional, cultural, and physical geography, as well as geographic information sciences, remote sensing, environmental studies and geographic education. Strong collateral course work in such fields as anthropology, soil and atmospheric science, economics, geology, political science, forestry, computer science and history meets the special interests of many graduate students.

### Degree Offered

Master of Arts

### Facilities and Resources

An exceptional departmental collection of reference materials, including maps, journals and books, is available to graduate students in the department's Wheeler Library and Seminar Room. The holdings of Ellis Library in geography and related fields are extensive and MU's computer facilities are readily available. In addition, the department is home to the Geographic Resources Center (GRC), the Missouri Spatial Data Information Service and the Spatial Analysis and Modeling teaching laboratory. These facilities serve as an interdisciplinary center for GIS, remote sensing, cartography, computer graphics and digital spatial databases of enormous variety.

## **Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details. In Geography, a total of approximately 6 graduate teaching and research assistantships are awarded on a competitive basis annually. Applicants desiring consideration for one of these positions should indicate this in their application to the department.

## **Geography Faculty**

Larry G. Brown

assistant professor; PhD, University of Missouri. White supremacy movements in the USA, geography of religion and belief systems, use of qualitative methods in geography, political and religious movements in Latin America.

Curt H. Davis

adjunct professor, PhD, University of Kansas. radar systems, RF & microwave signal propagation, wireless communication systems, satellite and airborne remote sensing systems, satellite altimetry, high resolution earth image processing, ice sheet mapping and change detection, digital elevation models, urban mapping and feature extraction, and geospatial information processing.

Grant P. Elliott

assistant professor, PhD University of Minnesota. Biogeography; macroecology; landscape ecology; dendochronology; climatology.

William R. Elliott

adjunct professor; PhD, Texas Tech University. Biospeleology, cave atmospheres, pesticide studies, industrial hygiene.

Matthew W. Foulkes

associate professor; PhD, University of Illinois. Poverty migration in rural Missouri communities, food security in Missouri, migration systems within mobile-home parks.

Timothy L. Haithcoat

director, Geographic Resources Center and Missouri Spatial Data Information Service; deputy director, Center for Geospatial Intelligence; MS, University of Missouri. Accuracy and implications of scale and resolution changes in geospatial analyses, geospatial representation of human geographies, conflation of linear networks of varying scales and accuracies, and techniques for spatial data generalization.

James D. Harlan

program director, Geographic Resources Center; MA, University of Missouri. Historic vegetation, mapping of the Lewis and Clark route across Missouri, rural Missouri communities.

Joseph J. Hobbs

chair, professor; PhD, University of Texas-Austin. Geography of the Middle East; pastoral nomadism; indigenous peoples and protected areas; research and education in Vietnam.

Robert B. Jacobson

adjunct professor; Research Hydrologist (U.S.G.S.); PhD, Johns Hopkins University. Quantifying the relations among physical river processes, habitat availability, and biotic responses in the Missouri River watershed; predicting the factors involved in channel instability in streams of the Missouri Ozarks and their effects on aquatic habitat.

Soren C. Larsen

associate professor; PhD, University of Kansas. Cultural and Indigenous geography: politics of place, sense of place, environmental perception and learning, rural and resource-dependent communities.

Gail S. Ludwig

associate professor emeritus; DA, University of Northern Colorado. GIS for K-12 students, instructional technology and multimedia development, necrogeography and geographic research methodology.

Timothy C. Matisziw

assistant professor; PhD, Geography, The Ohio State University. Network analysis and design, location modeling, environmental conservation, urban/regional planning and risk assessment, geographic information science, transportation geography, urban/regional planning.

Mark H. Palmer

assistant professor; PhD, University of Oklahoma. Indigenous geographies, geographic information systems, natural resources, North America, history of cartography, qualitative methods, place-based approach to earth systems science

Christopher L. "Kit" Salter

professor emeritus; PhD, University of California, Berkeley. The role of the road in American culture, small town growth and development, and American popular culture and its use of landscape for icons.

Walter A. Schroeder

associate professor emeritus; PhD, University of Missouri. Reconstruction of the land cover of Missouri from nineteenth century field notes of the US General Land Office survey and other uses of those field notes, developing ecoregions of Missouri at different levels of generalization, historical geography of the eastern Ozarks, 1770-1830.

Michael A. Urban

associate professor; PhD, University of Illinois at Urbana-Champaign. Physical and cultural dynamics of anthropogenic landscape change, historical patterns of resource perception and environment change, recovery of streams following channelization and modification events, philosophical issues in geography and geomorphology, application of environmental ethics in environmental management.

Cuizhen (Susan) Wang

associate professor, PhD, Michigan State University. Bio-environmental remote sensing, GIS and spatial analysis, land use and land cover change mapping, optical/microwave synergistic modeling, environmental stress monitoring and assessment, prairie grassland conservation, bioenergy.

Shannon White

geospatial extension specialist; PhD, North Carolina State University. Geospatial science, geographic education, instructional technology.

## Application and Admission Information

### Admission Contact Information

Dr. Soren Larsen

Geography admission page: <http://www.geog.missouri.edu/grad/app.html>

### Admission Criteria

Fall deadline: January 15

- Minimum GPA: 3.0
- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

- Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative
Prior to August 1, 2011	1000
On or After August 1, 2011	297

Preparation for graduate work in geography should include undergraduate courses in geography. Upon consultation with their adviser, students with insufficient background work in geography may be required to take additional undergraduate courses.

### Required Application Materials

All elements of the application including those required by the department are submitted through the Graduate School online application. For complete instructions, see <http://www.geog.missouri.edu/grad/app.html>.

#### To the Graduate School:

- All required Graduate School documents
- 3 letters of recommendation (submitted through the online application)GRE scores
- Supplemental department application (with Statement of Purpose)

### Plan of Study MA in Geography

The Master of Arts degree requires completion of 32 semester hours of course work. Two research options are available: a thesis and a non-thesis option. The non-thesis option requires the completion of a research paper. 15 or more of the 32 hours must be in courses at the 8000 level. Non-thesis candidates may take no more than 6 hours of special problems, special readings, special investigations, or research.

Every student must take Geography 8750 and Geography 8760, 6 additional hours of seminar-structured course work and 6 hours of course work in geographic methods.

A student's specific program of courses is selected jointly by the student and the graduate adviser, designated during the first semester in residence. All students of either option must pass a comprehensive oral examination at the end of their graduate work.

## **Courses**

See Geography (GEOG) in the myZou online system.

## Geological Sciences Graduate Programs

College of Arts and Science  
101 Geological Sciences Building  
573-882-6785  
<http://geology.missouri.edu/index.html>

### About the Geological Sciences Program

The areas of research covered by faculty are broad and diverse, with strong research expertise in the general areas of geochemistry, petrology and geophysics-tectonics. These strengths allow us to focus on problems identified by the National Research Council to be socially relevant and to be fundamental to an understanding of earth processes. Dynamic faculty, along with their students, are making significant contributions to numerous areas of basic and applied research. This research is supported by excellent, state-of-the-art analytical facilities in the department and on campus. Our graduate program prepares students for a wide range of professions within the geological sciences; students have been placed in private, federal, state, and academic institutions. Prospective students are encouraged to contact any faculty member directly for additional information.

### Degrees

The department offers two graduate programs: the master of science degree and the doctor of philosophy degree.

### Areas of Specialization

The areas of specialization are biogeochemistry, clay mineralogy, aqueous and isotope geochemistry, geophysics, hydrogeology, igneous petrology, metamorphic petrology, micropaleontology, ore deposits, invertebrate paleontology, sedimentation, stratigraphy, structural geology, tectonics, and paleoclimatology.

### Facilities and Resources

Adequate space and excellent facilities are available for research in the Geological Sciences Building, which also houses an excellent geology library. Modern and sophisticated equipment is available for supervised student use in many fields. The Geology Field Camp is in the Wind River Mountains near Lander, Wyoming. See the Department website at (<http://geology.missouri.edu/index.html>).

## Geological Sciences Faculty

Kevin L. Shelton  
chair, professor; PhD, Yale University. Economic geology and stable isotope geochemistry.

Mian Liu  
professor; PhD, University of Arizona. Geophysics and geodynamics.

Kenneth G. MacLeod  
professor; PhD, University of Washington. Paleontology and biogeochemistry.

Peter Nabelek  
professor; PhD, State University of New York at Stony Brook. Petrology and geochemistry.

Eric A. Sandvol  
professor; PhD, New Mexico State University. Geophysics and seismotectonics.

Michael B. Underwood  
professor; PhD, Cornell University. Marine sedimentation and tectonics.

Martin Appold  
associate professor; PhD, Johns Hopkins University. Hydrogeology and economic geology.

Robert L. Bauer  
director of graduate studies, associate professor; PhD, University of Minnesota. Structural geology and metamorphic petrology.

Francisco Gomez  
associate professor; PhD, Cornell University. Paleoseismology and neotectonics.

Cheryl A. Kelley  
associate professor; PhD, University of North Carolina at Chapel Hill. Biogeochemistry.

Alan Whittington  
associate professor; PhD, The Open University. Igneous & metamorphic petrology and tectonics.

Marie-Helene Cormier  
assistant professor; PhD, UC Santa Barbara. Marine geophysics and tectonics.

James Schiffbauer  
assistant professor, PhD, Virginia Technological University. Geobiology and paleontology

Miriam Barquero-Molina,  
field camp director, assistant teaching professor; PhD, University of Texas at Austin. Structural geology.

## Degrees

The department offers two graduate programs:

- The Master of Science degree
- The Doctor of Philosophy degree

The **master's degree** program includes a thesis and a non-thesis option, both of which require 30 credit hours beyond the bachelor's degree. The thesis option is accomplished by taking 18 to 21 graduate course credits and preparing a written thesis involving 9-12 credits of research or problems credits. Students have until the middle of their second semester in residence at the university to choose a supervisor and a thesis topic. The non-thesis track requires 27 hours of graduate course credits plus 3 hours of research credit leading to completion of a smaller-scope research project.

The **doctoral degree** requires 72 hours beyond a bachelor's degree, and may include as many as 24 hours credit from a prior master's degree. Doctoral candidates must pass a qualifying exam during their first year in residence to assess their general background so that a meaningful program of study can be constructed. The usual doctoral program involves courses within and outside the department, and researching the dissertation topic prior to taking

the comprehensive examination by the end of the second year. The results of the dissertation research are presented to the faculty and graduate students when the student has completed the project.

**Admission Contact Information**

Dr. Robert Bauer ([bauerr@missouri.edu](mailto:bauerr@missouri.edu)), director of graduate studies

**Admission Criteria**

Fall deadline: none set, but February 15 for guaranteed consideration for departmental financial aid

- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
71	530

- Minimum Academic IELTS scores:

Listening	
Reading	
Writing	
Speaking	
OVERALL Score	5.5

- GRE Scores and GPA: Our quantitative assessment of applicants uses a combination of GPA for the last 60 hours and the student’s GRE verbal, quantitative and analytical writing scores. We have a formula that weights the GPA and total GRE scores equally. Applicants with a GPA less than 3.0 may be considered, but their acceptance would require very strong GRE scores or exceptional circumstances.

**Required Application Materials**

[To the Graduate School:](#)

All required Graduate School documents. We require applicants to submit applications through our online system.

[To the Geological Sciences Program:](#)

3 letters of recommendation (submitted through the Graduate School’s online application system)  
 Personal statement (uploaded into Graduate School application online)  
 GRE scores

**Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

**Courses**

See Geological Sciences (GEOL) in the myZou online system.

## German Master of Arts

College of Arts and Science  
451 Strickland Hall  
573-882-4328

<http://german.missouri.edu/degprogs/germangradstudies.html>

The German and Russian Studies Department offers BA and MA degrees in two cultures and languages of critical significance in the world today - German and Russian. The German program prepares students for admission to PhD programs and for professional language careers in a number of fields. Courses in language, literature, teaching techniques and skills, seminars in various specialized aspects of German studies, and directed study and research provide candidates with opportunities to acquire a comprehensive background in German studies. Teaching assistants receive training in pedagogy.

### Resources and Facilities

Resources include extensive library holdings in German literature, cultural studies, and teaching methodology, and an electronically equipped audiovisual laboratory for language training.

### Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

### German Faculty

Roger Cook  
professor of German; PhD, University of California-Berkeley.

Stefani Engelstein  
associate professor of German; PhD, University of Chicago.

Monika Fischer  
associate teaching professor of German; PhD, University of Oregon.

Sean Franzel  
co-director of undergraduate studies; assistant professor of German; PhD, Cornell University.

Sean Ireton  
co-director of undergraduate studies; associate professor of German; PhD, University of Washington.

Kristin Kopp  
director of graduate studies, associate professor of German; PhD, University of California-Berkeley.

Brad Prager  
associate professor of German; PhD, Cornell University.

Carsten Strathausen  
associate professor of German; PhD, University of Oregon.

## Application and Admission Information

### Admission Contact Information

Dr. Kristin Kopp  
[koppkr@missouri.edu](mailto:koppkr@missouri.edu)  
218A Strickland  
Columbia, MO 65211  
573-882-3367

### Admission Criteria

Fall deadline: First preference given to applications received by February 1

Note: Applications received by February 1 receive first consideration

Spring deadline: August 1

Note: Applications to begin Spring semester are not encouraged. Assistantships are typically not available for graduate students beginning Spring semester.

- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

- Minimum GPA: 3.0
- Undergraduate major in German or equivalent

Note: The department reserves the right to evaluate the work presented for admission and to determine how the student may make up for background deficiencies.

### Required Application Materials

#### [To the Graduate School:](#)

All required Graduate School documents

#### [To the Program:](#)

Departmental application  
3 letters of recommendation

### Degree Requirements

Students must complete a minimum of 30 hours of graduate-level courses with a GPA of B or higher. No fewer than 24 hours are to be earned in German courses at the 7000 or 8000 level and at least 15 hours must be taken in German courses at the 8000 level. A thesis, with a maximum of 6 hours of credit, or a critical essay, with a maximum of 3 hours credit, are optional. Courses taken outside the department must complement the student's plan of study and require the approval of the departmental adviser. No languages other than German and English are required. Information regarding specific course requirements can be obtained by writing to the director of graduate studies.

## **Comprehensive Examinations**

Candidates for the MA degree must pass comprehensive written and oral final examinations based on coursework and the departmental reading list.

## **Courses**

See German (GERMAN) in the myZou online system.

# Health Management & Informatics Graduate Programs

School of Medicine  
CE 707 Clinical Support and Education Building, DC006.00  
One Hospital Drive  
573-884-0698  
<http://www.hmi.missouri.edu/>

## About Health Management and Informatics

The HMI Department develops, translates, and disseminates knowledge innovations and evidence-based solutions to improve health management and informatics performance in complex health systems to advance the health of Missouri's communities, the nation, and international partners by:

- Creating a culture of collaborative relationships in research, education, and service to generate innovative ideas and solutions;
- Providing professional health management and informatics education and fostering lifelong learning;
- Delivering technical assistance and consultation by partnering with health, human service, and policy-making organizations; and
- Developing innovative commercial products and services for health- and education-related applications.

## Degrees Offered

- Master of Health Administration
- Master of Science in Health Informatics
- Doctor of Philosophy in Informatics, emphasis area health informatics: see <http://www.muui.missouri.edu>

## Joint Degrees:

The MHA can be jointly pursued with the following degree programs: MS in health informatics and bioinformatics, MBA, MPA, MS in industrial engineering, JD.

## Health Management & Informatics Faculty

Eduardo J. Simoes  
professor and chair; MD, Universidade de Pernambuco; MSc, London School of Hygiene and Tropical Medicine; MPH, Emory University. Epidemiology.

Lanis L. Hicks  
professor and associate chair; PhD, University of Missouri. Health economics, rural health, telemedicine, nursing home quality.

Patricia E. Alafaireet  
clinical instructor and director of Applied Health Informatics; PhD, MHA, University of Missouri. Applied health informatics, graphical user interface (GUI) for physician use, decision support.

Kenneth D. Bopp  
clinical assistant professor; PhD, University of Missouri. Quality management, strategic planning, marketing.

Suzanne A. Boren

associate professor and director of graduate studies; PhD, MHA, University of Missouri. Consumer informatics, health care quality, evidenced-based medicine, patient safety, research methods.

Cathy Bryan

adjunct assistant professor; RN, Baylor University, MHA, University of Missouri. Clinical decision support.

J. Wade Davis

associate professor; PhD, University of Missouri. Biostatistics, statistical bioinformatics, wavelets, pattern recognition.

Andrew Grant

adjunct professor; MD, Birmingham University, PhD, Oxford University. Health informatics.

Michael Harris

adjunct clinical instructor; MS, University of Missouri. Health informatics, information technology and system security.

Jeannette Jackson-Thompson

research associate professor and operations director, Missouri Cancer Registry; PhD, MSPH, University of Missouri. Health promotion, disease prevention, Missouri Cancer Registry.

Naresh Khatri

associate professor; PhD, State University of New York at Buffalo. Strategic human resources, organization theory.

Min Soon Kim

assistant professor; PhD, MS, University of Texas at Austin. Health information technology evaluation, public health informatics and clinical research informatics.

Ricky Leung

assistant professor; PhD, MS, University of Wisconsin at Madison. Sociology of science and technology, health economics.

Ken Lobenstein

adjunct instructor; JD, University of Oregon. Information technology and security.

Wilbert E. Meyer

clinical instructor and director, HMI Group; MHA, Central Michigan University. Rural health services.

David E. Moxley

clinical instructor and associate director of Executive MHA and HI Programs, and director of Educational Technologies; MLS, University of Missouri. Library and information science.

Youngju Pak

assistant professor; PhD, State University of New York at Buffalo. Biostatistics.

Kalyan S. Pasupathy

assistant professor; PhD, Virginia Polytechnic Institute and State University. Healthcare engineering.

Gregory F. Petroski

research assistant professor; PhD, University of Missouri. Psychometric methods, differential test functioning, applications of Item Response Theory

Winfred G. Phillips

clinical assistant professor; PhD, Yale University. Health care management information systems, computer systems development.

Mihail Popescu

assistant professor; PhD, University of Missouri. Ontological data mining, fuzzy logic in bioinformatics and medical informatics.

Cheryl Rathert

assistant professor; PhD, University of Nebraska-Lincoln. Person-centered work environments, management information systems, organizational psychology.

Shari Riley

adjunct assistant professor; JD, MHA, University of Missouri.

Gerald M. Sill

clinical professor; JD, University of Missouri. Health care law.

Rick Sommer

executive in residence; MHA, University of Missouri. Professional development, field experience, alumni relations.

Douglas Wakefield

professor and director of the Center for Healthcare Quality; PhD, University of Iowa. Management development, quality, job satisfaction and turnover.

William Wells

clinical assistant professor and director, Health and Behavioral Risk Research Center; PhD, MHA, University of Missouri. Health and behavioral risk.

Illhoi Yoo

assistant professor; PhD, Drexel University. Text mining, biomedical informatics, bioinformatics, data mining, information retrieval, digital library.

## **Master of Health Administration**

### **Admission Contact Information**

Veronica Kramer ([KramerV@health.missouri.edu](mailto:KramerV@health.missouri.edu)) or hmi-admissions@health.missouri.edu

CE 707 Clinical Support and Education Building; DC006.00

One Hospital Drive

Columbia, MO 65212

573-884-0698

### **About the Master of Health Administration**

The Graduate Program in Health Services Management prepares professionals to meet critical and complex challenges in leadership and improvement in organizations and systems throughout the health industry. The program provides recognized national and global leadership in health management education.

The program is competency-based and distinctively equips graduates for success through (a) providing solid grounding in professional and operational knowledge and skills, (b) integrating health informatics throughout the health services management curriculum, and (c) incorporating overarching complex systems context and analytical approaches.

The residential and executive master's degrees launch and advance patient-centered, improvement-oriented, financially-responsible, and ethically-grounded careers in evidence-based health services management.

The program admits diverse cohorts of students from Missouri, other states, and other nations. Through the admissions process, the program looks for learners with strong academic records, maturity, motivation, leadership capabilities, and career potential. Primary post-graduation placement organizations include health systems, hospitals, academic medical centers, physician group practices, surgery centers, information technology companies, consulting firms, government agencies, insurance entities, and other points of health services delivery.

Whereas the residential master's degree format is a traditional on-campus residential program, the executive master's degree is offered in a hybrid model featuring both on-campus and distance learning. In both formats, emphasis is on fostering an individualized and collaborative culture of learning, mentoring, and professional development among students, faculty, staff, alumni, and other practitioners in order to prepare and enable transformational leadership in improving patient care quality, safety, value, and overall level of population health.

Implemented in 1965, the program is a member of the Association of University Programs in Health Administration (AUPHA) and has been accredited since 1968 by the Commission on Accreditation of Healthcare Management Education (CAHME), formerly Accrediting Commission on Education for Health Services Administration (ACEHSA).

### Admission Criteria

Deadline for Fall entrance: Rolling, recommended by April 1

- A minimum of a baccalaureate degree from an accredited institution
- Minimum TOEFL score: 603/100 (paper/internet); or Minimum IELTS score: 7.5
- Minimum GRE scores:

<i>When did you take the GRE?</i>	Minimum Scores
Prior to August 1, 2011	50 <sup>th</sup> percentile
On or After August 1, 2011	50 <sup>th</sup> percentile

- In lieu of GRE, minimum GMAT score: 50th percentile
- Undergraduate GPA: 3.0 during the last 60 hours of undergraduate course work and any subsequent graduate course work

The Health Services Management Program recruits and accepts qualified applicants regardless of race, sex, age, physical ability, or national origin.

## **Required Application Materials**

### [To the Graduate School:](#)

All required Graduate School documents

### [To the HSM Program](#) (CE 707 Clinical Support and Education Bldg., DC006.00; Columbia, MO 65212):

3 letters of recommendation

GRE or GMAT scores

Current resume or curriculum vitae

Personal essay

Official transcripts

TOEFL report (international applicants only)

Residential students may apply through HAMPCAS as well. <https://portal.hampcas.org/>

## **Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program Web site or ask the program contact for details.

## **Joint Degrees**

The MHA can be jointly pursued with the following degree programs: MS in health informatics and bioinformatics, MBA, MPA, MS in industrial engineering, JD.

## **About the Program**

### **MHA Curriculum**

The MHA curriculum is designed for a range of educational backgrounds and provides the knowledge and skills necessary to function effectively as a healthcare executive. The curriculum includes such competency areas as health systems operations, organization theory, information management, financial management, strategic planning and marketing, human resource management, health economics, managerial epidemiology, leadership, and ethics. By combining basic and advanced course work with an internship and executive management study (an applied management study that replaces a thesis), the student may develop expertise in a focused area. Professional elective course selection is a mutual decision between the student and adviser, and in all cases, the intent is to tailor the degree program to the student's interests. The goal of the graduate program in health services management is to prepare professionals for leadership roles in health administration. Students develop an excellent applied knowledge in such areas as clinical decision support systems, risk assessment and management, clinical outcomes assessment, managing interdisciplinary teams and integrated health systems.

## **Degree Requirements**

The MHA curriculum includes 48 hours of health services management course work and six hours of professional electives (as well as three foundation courses—fundamentals of microeconomics, accounting, and finance—that must be waived or completed). To graduate, a student must maintain a GPA of 3.0 (A=4.0) or better.

## **Plan of Study**

In the first year, the graduate program develops the theoretical background and skills necessary for analyzing complex health system problems and for thinking innovatively. After completion of the first two semesters, students serve a 12-week internship under the guidance of a qualified preceptor in an approved healthcare organization. This enables students to gain experience in the field, encounter issues and problems in day-to-day operations, and apply the concepts and skills obtained during the first year of course work. Clinical and field experience sites are provided by healthcare organizations throughout the country. During the internship, students generally are paid a monthly stipend. The second year builds on the conceptual, theoretical, and experiential base of the first year, providing increased flexibility for concentration in various administrative and planning areas and allowing students to pursue more independent learning. Emphasis is placed on the development of an individual with the behavioral and decision-making skills necessary for a leadership position in a changing healthcare environment. Additionally, all students are required to complete successfully an oral examination that enables faculty to evaluate the student's competency in health management.

## **Executive MHA Program**

In addition to the traditional degree program, an alternative format program is offered for healthcare professionals who have significant clinical or administrative experience in health care. The executive MHA program, which begins in January, combines monthly on-campus weekend sessions, independent study, and online interaction in an innovative two-year course of study. For additional information about the Executive MHA Program, please call the coordinator of student recruitment at (573) 884-0698, or visit <http://www.hmi.missouri.edu>.

## **Master of Science in Health Informatics**

### **Admission Contact Information**

Veronica Kramer ([KramerV@health.missouri.edu](mailto:KramerV@health.missouri.edu)) or [hmi-admissions@health.missouri.edu](mailto:hmi-admissions@health.missouri.edu)  
CE 707 Clinical Support and Education Building, DC006.00  
One Hospital Drive  
Columbia, MO 65212  
573-884-0698

### **About the Master of Science in Health Informatics**

The program prepares professionals to meet critical and complex challenges in applying information technology within the health industry. It provides recognized national and global leadership in health informatics education.

The residential master's degree prepares students for careers in developing and evaluating clinical information systems, data and knowledge management, decision support, and doctoral study in health informatics. The executive master's degree advances the careers of physicians, managers, nurses, information system designers, consultants, entrepreneurs, and others committed to the application of information technology for improving the quality, safety, and efficiency of health services.

The program admits diverse cohorts of students from Missouri, other states, and other nations. Through the admissions process, the program looks for learners with strong academic records, maturity, motivation, leadership capabilities, and career potential. Primary post-graduation placements include doctoral programs, health systems, hospitals, academic medical centers, physician group practices, outpatient facilities, information technology companies, consulting firms, government agencies, insurance entities, and other points of health services delivery.

Whereas the residential master's degree format is a traditional on-campus residential program, the executive master's degree is offered in a hybrid model featuring both on-campus and distance learning. In both formats, emphasis is on fostering an individualized and collaborative culture of learning, mentoring, and professional development among students, faculty, staff, alumni, and other practitioners in order to prepare and enable transformational leadership in improving patient care quality, safety, value, and overall level of population health.

### **Residential MS(HI) Program**

The residential MS in Health Informatics curriculum includes 3 credit hours of foundation courses that must be waived or completed, an additional 6 credit hours of highly recommended foundation courses, and 36 credit hours of health informatics course work. The health informatics curriculum is comprised of (a) 3 credit hours of health informatics introduction, (b) 18 credit hours of core courses, (c) selected concentration course(s) of at least 6 credit hours, and (d) 9 credit hours of research courses. The curriculum integrates learning across computer science, health informatics, and health services management. The program also develops students' research interests in health informatics and encourages those with excellent academic performance to pursue the PhD degree. To graduate, a student must maintain a GPA of 3.0 (A=4.0) or better.

Individuals with three or more years of professional experience are encouraged to apply to the Executive HI Program.

### **Admission Criteria**

Deadline for Fall entrance: Rolling

- A minimum of a baccalaureate degree from an accredited institution
- Minimum TOEFL score: 603/100 (paper/internet); or Minimum IELTS score: 7.5
- Minimum GRE scores:

<i>When did you take the GRE?</i>	Minimum Scores
Prior to August 1, 2011	50 <sup>th</sup> percentile
On or After August 1, 2011	50 <sup>th</sup> percentile

- In lieu of GRE, minimum GMAT score: 50th percentile
- Undergraduate GPA: 3.0 during the last 60 hours of undergraduate course work and any subsequent graduate course work

### **Required Application Materials**

#### [To the Graduate School:](#)

All required Graduate School documents

#### [To the HMI Program](#) (CE 707 Clinical Support & Edu. Bldg, DC006.00; Columbia, MO 65212):

3 letters of recommendation

GRE or GMAT scores

Current resume or curriculum vitae

Personal essay

Official transcripts

TOEFL report (international applicants only)

## **Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

## **Executive MS(HI) Program**

In addition to the traditional degree program, an alternative format program is offered for professionals who have significant experience in health informatics. The executive MS program in Health Informatics, which begins in January, combines 3 on-campus weekend sessions per semester with independent study and online interaction in an innovative 2-year course of study. For additional information about the Executive MS Health Informatics Program, please call the coordinator of student recruitment at (573) 884-0698, or visit <http://hmi.missouri.edu>

## **Doctor of Philosophy in Informatics, emphasis Health Informatics (Degree administered by the MU Informatics Institute)**

### **Contact Information**

University of Missouri Informatics Institute

573-882-9007

email [muiigraduateprogram@missouri.edu](mailto:muiigraduateprogram@missouri.edu)

web: <http://muii.missouri.edu>

The University of Missouri also offers a PhD in Informatics with Health Informatics as an emphasis area. Thus, official transcripts of students who complete this doctoral program will reflect both the degree (Informatics) and the emphasis area (Health Informatics).

The doctoral program in informatics draws on the considerable resources and strengths of our department along with other academic programs at the University of Missouri. The benefit to students: a rigorous yet flexible program of study. For example, courses may include statistics, computer science, health systems, clinical informatics, consumer health informatics, public health informatics, program evaluation, information architecture, decision support and knowledge systems, and biomedical data/text mining. The integrated doctoral program assures broad exposure to the field and fosters new insights and innovative research concepts.

### **Careers**

The US government predicts that employer demand will remain high for individuals with skills in health and clinical informatics. Mizzou students acquire the skills necessary to establish careers at the forefront of health informatics. This program is ideal for students who aspire to become researchers and thought leaders. Specific career paths may include health research; collegiate informatics teaching faculty; health informatics managers. Job sectors span government, medicine, health professions, and private, nonprofit and public research institutions.

### **About MUII**

Building on a tradition of outstanding informatics education and research at Missouri, the MU Informatics Institute is an interdisciplinary research and education program supported by 38 core faculty members from 14 departments and six colleges/schools, such as the College of Engineering; School of Medicine; School of

Nursing; College of Arts and Sciences; College of Agriculture, Food & Natural Resources; and College of Education. The Institute, under the Governance of the Graduate School, offers a doctoral degree program with concentrations in bioinformatics and health informatics. Each concentration stresses the skill sets and research appropriate for the subfield within the broad area of informatics. Students are accepted into the program with diverse backgrounds and varying degrees of experience.

**Learn more or apply**

Prospective doctoral students can contact MUII [muiigraduateprogram@missouri.edu](mailto:muiigraduateprogram@missouri.edu) or visit their web site <http://muii.missouri.edu> or call 573-882-9007

**Health Informatics Courses**

See Health Management & Informatics (HMI) in the myZou online system.

# History Graduate Programs

College of Arts and Science  
101 Read Hall  
573-882-2481  
<http://history.missouri.edu/>

By any measure one might choose, the History Department at the University of Missouri is an outstanding one. Our faculty has compiled a distinguished record of scholarship, receiving major awards to support their research from the National Endowment for the Humanities, the National Science Foundation, the John Simon Guggenheim Foundation and many other sponsors of cutting edge scholarship. Their books have won prizes from the American Historical Association, the Organization of American Historians and other national and regional scholarly organizations.

The department's teaching record is every bit as distinguished as its record of scholarly accomplishment. Graduate students work closely with professors in advanced seminars and write theses and dissertations on a wide variety of topics. The teaching opportunities the department offers graduate students prepare them well for dealing with the difficult job market for new history PhDs. Over the last ten years, University of Missouri history PhDs have found positions at more than forty different colleges and universities across the United States.

## Degrees

- Master of Arts in History
- PhD in History

## Areas of Study

Lecture courses, seminars and directed research projects are available on the histories of Western Europe, Russia, Great Britain, South Asia, East Asia, Latin America and the United States. While students are expected to get specialized training in the fields of their choice, they are also urged to develop a broad historical background.

## Facilities and Resources

Ellis Library has substantial research materials in all fields of graduate study, including an unusual collection of more than 5,000 pamphlets on 17th- and 18th-century British history and 18th- and 19th-century British and continental journals, including publications of all the major academies. The Health Sciences Library has excellent publications on the history of medicine. An additional resource is the Western Historical Manuscript Collection, a unique repository of material for regional studies in political, social and economic history. The State Historical Society of Missouri has an outstanding library of finding aids and primary and secondary works dealing with Missouri history. The graduate program also has available the resources of the Truman Library at Independence, Missouri.

## Internal Funding

Applicants may compete for Graduate School fellowships for entering students. Graduate School fellowships require departmental nomination. Interested students should consult with the director of graduate studies for further details. The department provides qualified students the opportunity to gain college-level teaching experience as teaching assistants who conduct discussion sections in American and European history. Pending

administrative approval and availability of funding, they earn at least \$11,691 an academic year and carry nine semester hours. Each appointment is subject to annual review and may be renewed up to a maximum of six years.

## **History Faculty**

Russell Zguta

chair, professor, PhD, The Pennsylvania State University. Medieval Russia.

John L. Bullion

professor, PhD, University of Texas-Austin. American colonial and political history.

Robert M. Collins

professor and Byler Chair in Social and Behavior Sciences, PhD, Johns Hopkins University. Recent United States history.

Wilma King

director of Black Studies, professor and Strickland Chair, PhD, University of Indiana. African-American history.

Kerby A. Miller

Curators' Professor, PhD, University of California-Berkeley. Modern Irish history, Irish diaspora and Irish in America, US urban and immigration history.

A. Mark Smith

Curators' Professor, PhD, University of Wisconsin-Madison. Medieval Europe, history of science.

Jonathan Sperber

Curators' Professor, PhD, University of Chicago. Modern Germany.

Steven Watts

professor, PhD, University of Missouri. American cultural and intellectual history.

LeeAnn Whites

Middlebush professor, PhD, University of California-Irvine. Civil War and reconstruction, women, 19th-century South.

John H. Wigger

professor, PhD, Notre Dame University. United States social and cultural history to 1865.

Ian Worthington

Middlebush professor, PhD, Monash University, Australia. Ancient Greece.

Richard Bienvu

professor emeritus, PhD, Harvard University. European intellectual history.

Winfield J. Burggraaff

professor emeritus, PhD, University of New Mexico. Latin American history.

Susan Flader  
professor emeritus, PhD, Stanford University. American West, American environment.

Abdullahi A. Ibrahim  
professor emeritus, PhD, Indiana University. Africa, Islamic history.

Charles G. Nauert Jr.  
professor emeritus, PhD, University of Illinois. Renaissance, Reformation.

Arvarh E. Strickland  
professor emeritus, PhD, University of Illinois. African-American history.

Mark M. Carroll  
associate professor, PhD, University of Houston. U.S. South, social and legal history.

John Frymire  
associate professor, PhD, University of Arizona. Early modern Europe, Renaissance and Reformation.

Lois L. Huneycutt  
director of graduate studies, associate professor, PhD, University of California-Santa Barbara. Medieval Europe, women.

Theodore Koditschek  
associate professor, PhD, Princeton University. Modern British social history.

Lawrence Okamura  
director of undergraduate studies, associate professor, PhD, University of Michigan-Ann Arbor. Ancient, late antiquity, Roman frontier.

Jeffrey L. Pasley  
associate professor, PhD, Harvard University. Early United States.

Linda Reeder  
associate professor, PhD, Rutgers University. Modern European history, women.

Catherine Rymph  
associate professor, PhD, University of Iowa. Recent United States, women.

Robert L. Smale  
associate professor, PhD, University of Texas-Austin. Latin American.

Michael Bednar  
assistant professor, PhD, University of Texas-Austin. South Asia.

Jerritt Frank  
assistant professor, PhD, University of Kansas. U.S. environmental history.

Ilyana Karthas  
assistant professor, PhD, Brown University. Modern European, intellectual and cultural history, aesthetics, women's and gender history.

Michelle Morris  
assistant professor, PhD, Harvard University. Early US women's history.

Soon Keong Ong  
assistant professor, PhD, Cornell University. China, Southeast Asia.

## Master of Arts in History

Admission Contact Information  
Nancy Taube (tauben@missouri.edu)  
101 Read Hall; Columbia, MO 65211  
573-882-9461

### Admission Criteria

Fall deadline: January 11

- Minimum GPA: 3.0 in last 60 hours
- BA or BS degree
- GPA of 3.3 in undergraduate history courses, and at least 18 hours in history
- Minimum TOEFL scores (international applicants only):

Internet-based test (iBT)	Paper-based test (PBT)
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Candidates who lack the necessary undergraduate hours in history must take graduate-level classes in history to remedy that deficiency before they can be considered for admission. They should consult with the director of graduate studies about appropriate classes. Graduate School regulations prohibit a non-degree student from taking more than twelve hours of course work.

Candidates must achieve a grade point average in these classes of at least 3.3 on a 4.0 scale to be considered for admission. A 3.3 GPA or higher does not guarantee admission. Course work taken as a non-degree student to remedy a deficiency in prerequisites ordinarily will not count toward the MA degree.

### Required Application Materials

#### [To the Graduate School:](#)

- All required Graduate School documents, including Graduate School online application
- One official copy of each college transcript where a degree was earned or is pending
- Short essay explaining goals and expectations in graduate study, including the fields in which the student plans to specialize (upload to the online application)
- Substantial writing sample, such as a final research paper from a course (upload to the online application)
- 3 letters of recommendation (submission through the online application system strongly preferred, but postal mail submission directly to the department allowed)
- Official GRE score report
- Official TOEFL score for international students

Note: Incomplete applications will not be considered. It is the applicant's responsibility to ensure that all required documents have been received by the Jan. 13 deadline.

### **Financial Aid from the Program**

In this department, all applicants are considered for financial aid unless they indicate otherwise. Announcements of awards are made no later than April 1. Applicants may compete for Graduate School fellowships for entering students. Graduate School fellowships require departmental nomination. Interested students should consult with the director of graduate studies for further details.

The department provides qualified students the opportunity to gain college-level teaching experience as graders who grade exams and papers in American and European history. Pending administrative approval and availability of funding, they earn at least \$5,845 an academic year and carry nine semester hours.

Each appointment is subject to annual review and may be renewed up to a maximum of two years.

### **Requirements for the Degree Residency**

A minimum of two semesters of full-time enrollment (9 hours each semester) or three semesters of part-time enrollment (6 hours each semester). Enrollment in all graduate courses requires the consent of the student's adviser and the instructor(s) of the class.

### **Hours**

Thirty semester hours of graduate credit are required by the Graduate School for the MA degree. The Graduate School also mandates that at least fifteen of these hours be in courses numbered 8000 or above, and will not count more than twelve hours of individually directed studies toward the thirty hours necessary to earn the degree. The department requires that at least twenty of these hours be in history. For students of United States history, at least fifteen hours must be in formally constituted US history courses. For students in the non-United States history program, at least twelve hours must be in formally constituted non-US history courses. Independently directed work does not count toward fulfilling this requirement in either category.

### **Required Courses**

A readings seminar in every semester in which as many as nine credit hours are carried, unless the student is granted an exemption by the director of graduate studies. Every master's student must take History 8480, Historiography, unless excused by the director of graduate studies. History 8480 is offered every Spring semester.

Every student who is a non-thesis candidate must complete at least two research seminars before receiving the MA degree. No master's candidates in US or non-US history are required by the department to demonstrate reading proficiency in any foreign languages or to develop research skills before receiving the MA degree. Individual advisers, however, can require MA candidates to become proficient in reading foreign languages and/or develop specific research skills if they determine such knowledge is essential for the successful completion of a student's master's program. As soon as any such determination is made, students will be informed by their advisers. The advisers will also discuss with them processes for achieving and demonstrating those proficiencies.

Master's candidates in Ancient History must demonstrate proficiency in at least one ancient language (Greek or Latin) and at least one modern language (generally, either French or German) before they begin work on their theses, if they choose that alternative, or before they take the non-thesis MA examination, if they are seeking a

terminal master's degree. These students should also be aware that ancient history graduate courses can include readings in Greek and Latin. For directions on how to demonstrate proficiency in these ancient and modern languages, students should talk with their advisers and obtain a written description of this process from them.

*Special Note:* No student will receive graduate credit for any course in which s/he earns a grade below B. The grade of C in a graduate class is the equivalent of an F in an undergraduate course.

### **Satisfactory Progress and Annual Review**

At the beginning of every Spring semester, students must complete a "Progress Report" on the Graduate School's Graduate Student Progress System (sometimes referred to as "online assessment"). This report will be read by the student's faculty adviser, who will then submit an "Adviser Response." In addition, the student and adviser should meet to discuss the student's progress, confirm expectations for the coming year, and address any concerns either may have regarding the report.

This is an extremely important process for two reasons. First, the adviser determines whether the student is making satisfactory progress toward a degree. If s/he is not, the adviser informs the student what needs to be done to rectify the situation. The student then usually has a year to return to making satisfactory progress. Failure to do so may result in loss of financial aid or dismissal from the program. Second, if the student is making satisfactory progress, the adviser and s/he decide together on what reasonable goals are for the next twelve months. These goals will define "satisfactory progress" at the next assessment meeting.

### **Appeals**

The student may appeal any assessment to the director of graduate studies. If not satisfied, s/he may seek the remedies described in the Graduate School catalog.

### **Effect of Progress Report Completion on Funding**

Completion of the Graduate Student Progress System forms by both student (Progress Report) and faculty (Adviser Response) is mandatory to maintain eligibility for any form of financial aid from the department. Receipt of financial aid requires confirmation by a student's adviser that s/he is making satisfactory progress. No student in the program who applies for or who is seeking renewal of financial aid will be eligible for aid without a complete and up-to-date Graduate Student Progress System Report on file.

### **Plans for MA Degrees: Thesis plan**

All students who wish to apply for admission to doctoral programs in history either at the University of Missouri or at other institutions must write a thesis. A thesis involves an original and extended analysis of an historical issue that requires substantial research. The topic of the thesis must be approved in advance by the student's faculty director and the thesis committee, which is composed of the director, at least one other member of the history faculty, and one faculty member from outside the department.

Graduate School regulations require that there be an outside faculty person on each thesis committee. At the discretion of the director, additional faculty members may be added to the committee. The appropriate forms, signed by the adviser and the director of graduate studies, will be submitted to the Graduate School.

Students will take History 8090, Thesis Research, during those semesters they are actually engaged in writing their thesis. N.B.: The Graduate School only permits six hours of History 8090 to count toward the 30 hours necessary to earn a master's degree. Students should also note that hours earned in History 8090 do count

toward the maximum of 12 hours of independent study, i.e., History 8085 (Problems), History 8089 (Research), and History 8090 (Thesis Research), the Graduate School will accept as credit for this degree.

### **Plans for MA Degrees: Non-thesis plan**

Students may earn a master's degree without writing a thesis. A non-thesis MA is a terminal degree. Those who receive it will not be considered for admission to the doctoral program. These students must successfully complete two research seminars in history. These seminars will count toward the thirty hours required for an MA degree. One of the seminar papers must be submitted to the department to fulfill the Graduate School requirement for a substantial effort reflecting creativity or originality.

### **Examination for the MA degree: For Thesis Plan**

The student must defend her/his thesis before a committee of at least three faculty members, one of whom must be the thesis director. Another must be from a department other than History. The committee is appointed by the Dean of the Graduate School upon recommendation from the Department of History. The examining committee decides:

1. whether to recommend the awarding of the MA degree to the student
2. for prospective doctoral candidates, whether the student shall be permitted to enter the doctoral program.

This latter action constitutes a decision on the qualifying examination required in the doctoral program. Afterwards, the appropriate form(s) will be signed by the adviser, committee members, and the director of graduate studies, then sent to the Graduate School.

### **Examination for the MA degree: For Non-Thesis Plan**

A comprehensive oral examination covering all work for the degree will be conducted by a committee of the adviser and at least two other faculty members, one of whom may be from a department other than history. The examining committee decides whether to recommend the awarding of the MA degree. Afterwards, the appropriate form(s) will be signed by the adviser, committee members, and the director of graduate studies, then sent to the Graduate School.

### **Graduate School Deadlines for receipt of the MA degree**

Students must meet Graduate School deadlines for the awarding of degrees and the submission of theses. The final form of the thesis must be in conformity with the Graduate School requirements.

## **Doctorate in History**

Admission Contact Information  
Nancy Taube (tauben@missouri.edu)  
101 Read Hall; Columbia, MO 65211  
573-882-9461

### **Admission Criteria**

Fall deadline: January 11

- MA in history strongly preferred
- Quality of master's thesis or research seminar paper submission
- Minimum TOEFL scores (international applicants only):

Internet-based test (iBT)	Paper-based test (PBT)
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Students who do not meet one or more of these criteria may enroll as non-degree graduate students. Contact the director of graduate studies for further details. All admissions of doctoral candidates who did not receive the MA degree from the department are provisional. These students must pass a qualifying examination. See below for information about the qualifying examination.

### **Required Application Materials**

#### [To the Graduate School:](#)

- All required Graduate School documents, including Graduate School online application
- One official copy of each college transcript where a degree was earned or is pending
- Short essay explaining goals and expectations in graduate study, including the fields in which the student plans to specialize (upload to the online application)
- Substantial writing sample, such as a final research paper from a course (upload to the online application)
- 3 letters of recommendation (submission through the online application system strongly preferred, but postal mail submission directly to the department allowed)
- Official GRE score report
- Official TOEFL score for international students

Incomplete applications will not be considered. It is the applicant's responsibility to ensure that all required documents have been received by the Jan. 13 deadline.

### **Financial Aid from the Program**

In this department, all applicants are considered for financial aid unless they indicate otherwise. Announcements of awards are made no later than April 1. Applicants may compete for Graduate School fellowships for entering students. Graduate School fellowships require departmental nomination. Interested students should consult with the director of graduate studies for further details.

The department provides qualified students the opportunity to gain college-level teaching experience as teaching assistants who conduct discussion sections in American and European history. Pending administrative approval and availability of funding, they earn at least \$11,691 an academic year and carry nine semester hours. Each appointment is subject to annual review and may be renewed up to a maximum of six years.

### **Qualifying Examination**

To be admitted to candidacy for a PhD in history, a student must have earned an MA in history or a related discipline and have passed a qualifying examination.

### **Students with an MA from the University of Missouri**

Students earning their MA in history at this university may, with the approval of their advisory committee, combine their qualifying examination with their MA thesis defense. Other students must take their qualifying examination no later than the beginning of their third semester in the graduate program at the University of Missouri-Columbia.

### **Students Who Earned Degrees at Other Institution**

All admissions of doctoral candidates who did not receive the MA degree from the department are provisional. These students must pass a qualifying examination no later than the beginning of their third semester of residence at MU. The exam will focus on a research paper the student wrote at MU.

### **About the Exam**

The examining committee will be composed of the student's adviser and at least two other history faculty members. During the consideration of prospective students, the committee on graduate admissions will consult closely with faculty best suited to advise them.

The basis for the examination will be a substantial research-based seminar paper written here. The exam will be oral, approximately one hour in length; the examiners will include the student's adviser and at least two other members of the department. It is designed to ascertain the candidate's intellectual capacity, aptitude, and preparation for PhD level work in history.

The committee reserves the right to reject otherwise qualified students if

1. this department cannot provide the applicant with an adequate program in his/her area of interest
2. no faculty member is willing to supervise his/her work.

### **PhD Program Overview**

The PhD program in history at the University of Missouri-Columbia is governed by a number of rules, regulations, and expectations. What follows is an explanation of these elements of the program.

### **Adviser and Advisory Committee**

A student will meet with his/her adviser no later than the semester following passage of the qualifying examination for students who earn their MA in history at the University of Missouri and prior to the qualifying examination for other students. The adviser and student together will plan the student's class work up to the comprehensive exams. They will also choose other members of the student's doctoral committee. That committee will ordinarily consist of the adviser, three members of the history department who are on the graduate faculty, and one graduate faculty member from outside the department. The advisory committee must be approved by the dean of the Graduate School.

### **Developing a PhD Plan of Study**

The committee will meet formally with the student to help the student to develop a major field, two broad historical fields, a historical field outside his/her area of major emphasis, and one field in a discipline other than history for the comprehensive examination. How s/he will meet the foreign language and/or historical research technique requirement (see below) will be defined and approved by the adviser and the committee. Members of the advisory committee shall meet regularly with the student to ensure he/she is making satisfactory progress.

## **PhD Degree Requirements**

To obtain a PhD in history at the University of Missouri, a student must fulfill the following requirements:

1. residency
2. course work
3. foreign language and/or historical/research technique
4. comprehensive examination
5. dissertation and oral defense

### **Residency**

A minimum of two semesters of full-time enrollment (9 hours each semester) or three semesters of part-time enrollment (6 hours each semester). Enrollment in all graduate courses requires the consent of the student's adviser and the instructor(s) of the class.

### **Course Work**

The minimum requirement for the PhD degree at the University of Missouri is 72 hours of graduate credit beyond the baccalaureate degree. A student's adviser and committee may require more. Customarily, students in history have more than 72 hours when they defend their dissertations. If a student has earned an MA degree at another institution, with the approval of her/his adviser and committee, s/he may receive up to 30 hours of credit toward the 72 necessary for the PhD. If a student took additional courses beyond his/her MA degree at another institution, with the approval of her/his adviser and committee, s/he may receive up to a maximum of six hours of credit toward the PhD.

Graduate School regulations forbid the awarding of more than six hours. Two-thirds of the courses taken by a PhD candidate within the department prior to the comprehensive examination must be at the 8000 or 9000 level. These may, and probably will, include History 8085 (Problems), History 8410 (Independent Readings PhD Exam), History 9089 (Research), but not History 9090 (Dissertation Research).

Every doctoral student who earned his /her master's degree at another institution must take History 8480, Historiography, unless excused by the director of graduate studies. History 8480 is offered every spring semester.

### **Foreign Languages and Historical Research Techniques**

PhD candidates must demonstrate abilities in foreign languages and/or historical research skills appropriate to the completion of a doctoral dissertation in their proposed field of research. There are four different ways a student may fulfill this requirement. Which one is chosen depends on the area of his/her research interest. The adviser and committee must approve the method for fulfilling this requirement.

### **PhD Emphasis Areas**

#### *Ancient History Emphasis*

Candidates planning to write a doctoral dissertation in ancient history must demonstrate their competence in Greek and Latin, together with at least two modern languages (usually French and German).

For the ancient language, competence will be shown either by the successful completion of a translation examination designed by a history department faculty member with knowledge of the relevant language, or by the

completion of upper-level courses in the department of classical studies, or by other such proof as the adviser and other members of the advisory committee deem appropriate.

Competence in the modern languages will be shown either by the successful completion of a translation examination designed by a history department faculty member with knowledge of the relevant language, or by passing the ETS language examination with a minimum score of 500, or by the successful completion of an upper level language course in any modern language department of the university.

#### *European History Emphasis*

Candidates planning to write a dissertation in European history must be competent in two foreign languages.

Competence may be demonstrated either by successful completion of a research paper, the sources for which are predominantly in the foreign language under consideration, or by successful completion of a translation examination designed by a history department faculty member with knowledge of the relevant language, or by passing an ETS language examination with a minimum score of 500. A candidate's advisory committee may also require him/her to show competence in historical research technique. An historical research technique is a specialized field of study which provides a student with additional skills for research. Quantitative methods/statistics or techniques of historical exhibition, museum work, and the analysis of material culture are some examples. Competence will be demonstrated by satisfactory completion of a substantial research paper or other historical project for which the technique is necessary.

Students who take foreign language courses should keep in mind that all classes below 7000 may not be taken for graduate credit and do not count toward the 9 hours per semester required for those receiving financial aid.

#### *American History Emphasis*

Candidates planning to write a dissertation in American history shall have a competent reading knowledge of one foreign language.

Competence in a foreign language shall be demonstrated in the ways described above for candidates in European history.

#### *Asian or Latin History Emphasis*

Candidates planning to write a dissertation in Asian or Latin American history shall demonstrate a competence in such languages as their advisory committee requires for their research. In addition, a candidate's advisory committee may require the candidate to demonstrate competence in an historical/research technique, as defined above in the American History section (3).

### **Preparation for the Comprehensive Examination**

In the department of history, each doctoral student must prepare five fields for the comprehensive examinations. The selection of those fields and the faculty who will be the examiners in each should be begun by the doctoral candidate and her/his adviser during her/his first semester at MU. The adviser will help the student prepare for examination in her/his major field. This will cover significant historical themes and historiographical trends in the specific period and area of the student's prospective dissertation topic.

Two other members of the history faculty will help the student prepare for examinations in two chronological and/or geographical areas of historical study that are appropriate for his/her dissertation topic. A fourth member of

the history faculty will prepare the student for an examination in a chronological, geographical, and/or thematic area of historical study that is not directly related to his/her dissertation topic. A fifth faculty member from a department other than history will prepare the student for examination in an outside field. This will cover the methodologies and research findings of another academic discipline.

### **Areas of Study and Dissertation Topics**

What the student learns in this discipline should assist his/her understanding of and research on her/his dissertation topic. The student's choice of a discipline to work in for his/her outside field is potentially as wide as the number of programs and departments in the university. That choice is not confined merely to departments in the College of Arts and Science. The student must have his/her adviser's approval of the discipline and the outside faculty member. The Graduate School must approve these selections as well.

Within the department of history there are seven broad areas of historical study.

- US history to 1865 (including the colonial period)
- US history since 1865
- Ancient history
- European history from the fall of Rome through the Reformation
- European history since the Reformation
- Latin American history
- Asian history

The three history faculty who, together with the adviser, will help the student prepare for the comprehensive examinations, must each test him/her on material in a different broad area. Thus the student will be working on three different broad areas, plus the dissertation field. The three faculty members may, in consultation with the student, define the broad area as narrowly or as widely as they choose.

### **Documenting Exam Preparation**

The adviser and the four other faculty members must explain how they want the student to prepare, what they want the student to master, and which criteria they will use to assess the examinations in their particular field. These explanations must be in writing, and copies of each placed in the student's permanent file.

### **Comprehensive Examination Requirement**

Students may take a comprehensive examination only after fulfilling their residency, course work and foreign language and/or historical research technique requirements. It will be administered by a committee consisting of his/her adviser and four other faculty members, one from a discipline other than history. These should be the faculty members who helped the student prepare for the examinations. Sometimes it may be necessary to find substitutes. The director of graduate studies and the Graduate School must approve any substitutions, and new committee members must describe their expectations in writing for the student and for his/her permanent file.

### **Comprehensive Exams Processes**

The comprehensive exams are given in two stages. The first is a series of at least three written exams. The second is an oral examination, which is conducted if the student passes the written portion. A report of the decision, signed by all members of the committee, must be sent to the Graduate School and the student no later than two weeks after the comprehensive exam is completed. One of the written exams must be in the major field; the committee will determine the subjects of the other exams, and their number.

*Special Note:* All members can require the student to write on their areas of expertise. Therefore the written examinations could cover all five areas.

All members of the committee will read the written exams and discuss them within two weeks after their completion. If they determine the student has not successfully completed the exam, they will inform him/her immediately and discuss the results. Failure ends the comprehensive exam at this point. The committee must provide the student with an outline in writing of the weaknesses and deficiencies of his/her work.

A copy of this must be placed in the student's permanent file. If at any time the student believes that parts of the exam are unclear, or the decision of the committee is incorrect, or the advice given by the committee is inadequate, s/he may send a written request for clarification and rectification to the committee. A copy of this request should be sent to the Graduate School as well. The committee must respond to this request in writing within two weeks and a copy must be filed with the department and the Graduate School.

At least 12 weeks must pass before a student who failed can take the comprehensive exams again.

If the committee determines that the student did satisfactory work on the written examinations, they will schedule an oral examination. This second stage of the comprehensive exams will cover all five fields. Each member of the committee will test the student. At the end of the oral examinations, the committee discusses the student's performance on each field and on the entire examination. This discussion includes both the written and the oral parts of the whole process. Then they vote pass, fail, or abstain on the student's total performance on the exam.

### **Criteria for Successful Completion of the Comprehensive Exam**

To complete the comprehensive exams successfully, the student must receive a vote of pass from at least four of the five examiners. Should two or more votes be negative or abstentions, the committee follows the same procedure outlined above for failure to pass the written part. These students must repeat the entire examination, not just the fields failed, and not just the oral portion. If the candidate fails the second examination, the examining committee must enter on its report to the dean of the Graduate School a recommendation to prevent the student's further candidacy.

### **Dissertation and Oral Defense**

Soon after successful completion of the comprehensive examination, the student and adviser will form a dissertation committee of five faculty members. One member of the committee must be from outside the department. The student shall develop with her/his adviser and committee a dissertation topic and a plan of research. S/he should keep in regular contact with the adviser. Together they shall decide when written work will be read by other members of the committee.

### **Travel Funding**

When students begin work on their doctoral dissertations, they may apply for departmental fellowships and travel grants to assist their research and writing.

### **Satisfactory Progress**

The department requires PhD candidates to make satisfactory progress towards completion of their degree.

## **Annual Review**

At the beginning of every Spring Semester, students must complete a “Progress Report” on the Graduate School’s Graduate Student Progress System. This report will be read by the student’s faculty adviser, who will then submit an “Adviser Response.” In addition, the student and adviser should meet to discuss the student’s progress, confirm expectations for the coming year, and address any concerns either may have regarding the report.

This is an extremely important process for two reasons. First, the adviser determines whether the student is making satisfactory progress toward a degree. If s/he is not, the adviser informs the student what needs to be done to rectify the situation. The student then usually has a year to return to making satisfactory progress.

Failure to do so may result in loss of financial aid or dismissal from the program. Second, if the student is making satisfactory progress, the adviser and s/he decide together on what reasonable goals are for the next twelve months. These goals will define “satisfactory progress” at the next assessment meeting.

## **Appeals**

The student may appeal any assessment to the director of graduate studies. If not satisfied, s/he may seek the remedies described in the Graduate School catalog.

## **Funding Impact of Incomplete Reports**

Completion of the Graduate Student Progress System forms by both student (Progress Report) and faculty (Adviser Response) is mandatory to maintain eligibility for any form of financial aid from the department. Receipt of financial aid requires confirmation by a student’s adviser that s/he is making satisfactory progress. No student in the program who applies for or who is seeking renewal of financial aid will be eligible for aid without a complete and up-to-date Graduate Student Progress System Report on file.

## **Rate of Completion**

A PhD student must successfully complete the comprehensive examination within a period of five years beginning with the first semester of enrollment as a PhD student. For an extension of this the student must petition the Graduate School by submitting a request to the adviser who, in turn, submits a written recommendation to the Graduate School. The director of graduate studies will also make a written recommendation. In addition, the dissertation must be successfully defended within five years of passing the comprehensive examination. On petition of the candidate and the candidate’s department, an extension of time may be granted by the Graduate School.

## **Courses**

See History (HIST) in the myZou online system.

# Human Development & Family Studies Graduate Programs

College of Human Environmental Sciences  
314 Gentry Hall  
573-882-4035

## About Human Development & Family Studies

Selected in 2002 and again in 2007 as the Most Outstanding Graduate Department on campus, we have a nationally recognized faculty whose research productivity consistently has been ranked in the top 5% of the 235 family studies programs across the country. Our department houses current and former journal editors as well as a past president of the National Council of Family Relations.

We have a well-established mentoring program, which begins as soon as the student is accepted into HDFS. We actively prepare our students to become successful academic scholars both in terms of research and teaching. The range of careers for which we prepare our students is unparalleled. Since 2000, our program has placed more faculty into research extensive family studies departments than any other program in the U.S. We also prepare PhDs and master's students for applied careers in administration, program evaluation, and program development. Our alumni have positions with universities and colleges in the United States, Canada, and Korea. We have developed an outstanding reputation as a place to study individual and family diversity and multiculturalism across the life course. Because we define diversity and multiculturalism broadly, our focus is on the multitude of ways that individuals and families may differ, including, but not limited to race, ethnicity, socioeconomic status, age, family structure, nationality, geographic location, and sexual orientation.

## Human Development and Family Studies Graduate Faculty

Gustavo Carlo  
Millsap Professor of Diversity in HDFS, PhD, Arizona State University.

Marilyn Coleman  
Curators' Professor and Director of Graduate Studies; EdD, University of Missouri.

Teresa Cooney  
Associate Professor; PhD, Pennsylvania State University.

Lawrence Ganong  
Professor and Co-Chair; PhD, University of Missouri.

Melissa Herzog  
Assistant Research Professor; PhD, Arizona State University.

Jean Ispa  
Professor and Co-Chair; PhD, Cornell University.

Stephen Jorgensen  
Professor and Dean; PhD, University of Minnesota.

Sarah Killoren  
Assistant Professor, Ph.D., Arizona State University.

Louis Manfra  
Assistant Professor; PhD, George Mason University.

Francisco Palermo  
Assistant Teaching Professor, Ph.D., Arizona State University.

Christine Proulx  
Assistant Professor; PhD, University of North Carolina-Greensboro.

Russell Ravert  
Assistant Professor; PhD, Indiana University.

Cynthia Reeser  
Assistant Teaching Professor; PhD, University of Kentucky.

Duane Rudy  
Associate Professor; PhD, University of Toronto.

David Schramm  
Assistant Professor; PhD, Auburn University.

Kathy Thornburg  
Emeritus Professor; PhD, University of Missouri.

### **Degrees Offered**

On-Campus: MA, MS and PhD  
Online: Graduate Certificates and MA

### **Admission Contact Information**

Marilyn Coleman [colemanma@missouri.edu](mailto:colemanma@missouri.edu)  
314 Gentry; Columbia, MO 65211  
573-882-4360

## ADMISSION CRITERIA FOR CAMPUS PROGRAMS

Fall deadline: December 15

Spring deadline: November 15

- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

- Minimum GRE scores:

Test Portion	Total Minimum Score*
Quantitative	50 <sup>th</sup> percentile or above
Verbal	50 <sup>th</sup> percentile or above
Analytical Writing	50 <sup>th</sup> percentile or above

\*Some exceptions are made

- Minimum GPA: 3.0 for last 60 hours

### Required Application Materials for Campus Programs (submitted online via the applyyourself system)

- Application form
- 3 letters of recommendation from people who can speak to applicant's potential to do graduate work (e.g., professors, advisors).
- GRE score (and TOEFL score for international applicants)
- Personal statement
- Resume or Curriculum Vitae
- Official Transcripts

### Financial Aid from the Department

All applicants for the on-campus program are automatically considered for assistantships, fellowships, and other funding packages. Check the HDFS website or ask the program contact for additional details.

## ADMISSION CRITERIA FOR ONLINE PROGRAMS

No Admission Deadlines (We guarantee processing of complete applications received at least two months prior to the beginning of the expected term of admission. This will give admitted students adequate time to enroll in coursework.)

Minimum GPA: 3.0 for last 60 hours

### Required Application Materials for Online Programs (submitted online via the applyyourself system)

- Application form

- 3 letters of recommendation from people who can speak to applicant's potential to do graduate work (e.g., professors, advisors).
- Personal statement
- Resume or Curriculum Vitae
- Official Transcripts

## **Master's in Human Development & Family Studies**

### **About the Master's Degrees**

The Department of Human Development and Family Studies offers Master of Arts (applied emphasis) and Master of Science (research emphasis; on-campus only) degrees. The MA and MS degrees prepare students for positions in junior college or college teaching and leadership in public and private human service institutions. The MS degree also provides research training toward the PhD degree.

### **Areas of Study**

On-campus students selecting the MA or MS degree may specialize in family studies, child life, early childhood development, life span development, family mediation, human services program (emphasis in administration or policy), or a dual-degree program in HDFS and the School of Law. Online students may select an MA specializing in gerontology, youth development, or family and community services.

### **Plan of Study Options**

Programs are structured to provide students with an integration of theoretical perspectives, empirical research training, and practical experiences. The number of hours required for each master's degree is as follows:

Family Studies: 36 hours

Child Life: 30 (fast track) or 36 hours

Early Childhood: 36 hours

Life Span: 36 hours

Family Mediation: 36 hours

Human Services: 36 hours

Gerontology: 36 hours

Youth Development: 36 hours

Family and Community Services: 36 hours

Dual MSorMA/JD: approximately 113 hours

### **Research**

Based on their chosen degree option and whether they are pursuing the MS or MA degree, master's students may write a thesis (HDFS 9090), complete a project (HDFS 8090), or do an internship (HDFS 8972) for up to six credit hours. The thesis requires testing a hypothesis or exploring a research question. The project option is no less scholarly than a thesis, but usually has an applied focus. For instance, a project may involve designing a

program and developing curriculum materials (e.g., instructional videotapes, websites, resource manuals). Internships are often conducted off-campus and must be negotiated with the student's advisor and approved by the student's faculty committee. Students who wish to pursue the thesis option must petition the department's graduate faculty for approval. Students completing a thesis earn a Master of Science degree. Those completing a project or internship earn the Master of Arts. For more detailed information, please refer to the HDFS Graduate Handbook found on the HDFS website (<http://hdfs.missouri.edu/>).

### **Satisfactory Progress**

Satisfactory progress is based on the student maintaining a sufficient GPA according to the student's program or funding guidelines and completing all degree forms and milestones according to departmental timelines. For a detailed description of the department's description of a satisfactory rate of academic progress, please refer to the HDFS Graduate Handbook found on the HDFS website (<http://hdfs.missouri.edu/>).

### **Time Limits for Masters' Degree Completion**

Students working toward the master's degree have 5 years from the semester the first course is taken in which to complete all degree requirements. Extensions for one additional year to complete the degree may be granted with submission of a detailed plan for completion, including a timetable. Students must be making progress toward completion when they apply for the extension. A maximum of two extensions may be granted.

## **Online Graduate Certificates**

### **About the Certificate Programs**

The Department of Human Development and Family Studies offers four online graduate certificates with specialization in youth development, youth development program management and evaluation, gerontology, and geriatric care management.

Courses taken for any of the above certificate programs may be applied toward the related online MA degrees in youth development and gerontology. *Up to 12 credits of coursework from the courses taken for any of the certificate programs may be applied toward their related online MA degrees described above.*

The number of hours required for each online graduate certificate is as follows:

Youth Development Specialist: 13 hours

Youth Development Program Management and Evaluation: 13 hours

Gerontology: 21 hours

Geriatric Care Management: 12 hours

## **Doctorate in Human Development & Family Studies**

### **About the PhD**

The Department of Human Development and Family Studies PhD degree prepares students for careers in research, college or university teaching, or leadership positions in public and private human service institutions.

### **Plan of Study**

Students selecting the doctoral degree work with members of their doctoral committee to create an individualized plan of study tailored to their specific research interests. Over the course of their degree program all doctoral students are required to enroll in six credit hours of research practicum, three credit hours of teaching practicum, and complete coursework in theory, research methods, statistics, and their collateral area. In addition, all doctoral students complete a minimum of 12 credit hours of research for their dissertation. A sample plan of study can be found on the HDFS website (<http://hdfs.missouri.edu/>).

### **Satisfactory Progress**

See above.

### **Qualifying Process for Doctoral Students**

To be officially admitted to the HDFS doctoral program, students generally must have completed a master's degree in HDFS or a related field, although exceptions are granted.

### **PHD Comprehensive Matriculation Exam**

The comprehensive exam consists of two parts. Part I involves an in-house written and oral examination over (1) theory, methods, and statistics, (2) the student's area of specialization and core content, and (3) the student's collateral area. The advisor is responsible for collecting questions from all five committee members, constructing the exam, and getting approval for the final version of the exam from available committee members. It is expected that the written exam will take the student no longer than 8 hours (e.g., two half-days or one full day) to complete. The written exam will be assessed by the committee and the student will meet with the committee for an oral defense of the written exam. If this part of the exam is passed the student moves to Part II of the comprehensive exam, which involves writing a grant pre-proposal and, if approved, a full grant proposal as outlined in the HDFS Graduate Handbook. For a detailed description of the comprehensive exam timeline please refer to the Handbook found on the HDFS website (<http://hdfs.missouri.edu/>).

### **Admission to Candidacy**

After students pass Parts I and II of the comprehensive examination, they complete the D3 form to apply to the Division of Graduate Studies for admission to doctoral candidacy. Following admission to candidacy, students complete a prospectus for the dissertation project. The prospectus includes a pertinent review of the literature,

statement of the problem, the purpose of the proposed study, description of the research design, and discussion of the specific means by which the data will be analyzed. Subsequently, the dissertation committee will meet to evaluate, request revisions to, and approve the student's dissertation prospectus.

### **Time Limits on Degree Completion**

A graduate degree represents current knowledge of the field as of the date the degree is granted. Limitations have therefore been set regarding the number of years to finish the degree. Doctoral students have 6 years in which to complete degree requirements. The clock starts the semester that the first class beyond the master's degree is taken. The comprehensive exam must be completed no later than by the end of the fourth year of study. HDFS doctoral students have only three years after passing the comprehensive examination to complete the doctoral degree.

### **Petitions for Extension**

On petition of the candidate, an extension of 1 year may be granted by the HDFS graduate faculty. The student may petition for no more than two one-year extensions. Therefore, a doctoral student may have no more than 5 years, including two one-year extensions, to complete the doctoral degree after passing the comprehensive exam. On petition of the candidate and the candidate's department, an extension of this time limit may be granted by the Graduate School.

### **Courses**

See Human Development & Family Studies (HDFS) graduate courses in the myZou online system or on the HDFS web page (<http://hdfs.missouri.edu/>).

# Industrial & Manufacturing Systems Engineering Graduate Programs

College of Engineering  
E3437 Lafferre Hall  
573-882-2691  
<http://engineering.missouri.edu/imse/>

The graduate program in industrial engineering provides a scholarly environment in which highly qualified, creative students may obtain the knowledge and develop the skills necessary to solve complex industrial, governmental and societal system design problems. These systems are required to operate within increasingly complex constraints, thus requiring the use of sophisticated and creative designs. The industrial engineer responsible for such designs must be capable of applying a broad spectrum of scientific tools if the most effective systems are to be obtained.

## Degree Programs

In industrial engineering, the master of science program is designed to provide a basic understanding of these tools and experience in the application of these tools in the design process. The doctor of philosophy program is designed to provide the specialized knowledge and skills necessary to develop new tools or methods for solving complex systems design problems. Information on engineering licensure is detailed under Professional Engineering Registration.

## General Admission Guidelines

Acceptance for advisement in the department's graduate programs is available to students with an ABET accredited undergraduate engineering degree. Engineering graduates who have not taken linear programming, linear algebra, statistical quality control or engineering economic analysis must complete 12 hours of additional course work before graduation.

Students with baccalaureate degrees in mathematics, physics, chemistry or computer science may be accepted if they have completed 13 hours of calculus, three hours of differential equations and six hours of calculus-based probability and statistics. Several factors are considered in evaluating an applicant's capability, such as overall GPA, grade trends and major area grades. In addition, each applicant is required to take the general test of the GRE and international students must take the TOEFL and TWE, or IELTS.

## Facilities and Resources

Laboratory facilities in several major application areas, both within the department and in the college, support the academic program. Neighboring industries, city, county and state government agencies, local hospitals and nearby large metropolitan centers provide a reservoir of research and design opportunities.

## Computing and Reference Materials

The department has access to the University of Missouri System computing network and maintains its own computing facilities for student use. Besides Ellis Library facilities, an excellent collection of mathematical, statistical and engineering books and reference materials are housed in the engineering library and the industrial and manufacturing systems engineering departmental library.

## **Funding**

Fellowships, scholarships and teaching and research assistantships are available to qualified graduate students. These forms of financial assistance are supported by funds made available through state, federal and industrial graduate support programs and through research grants from various industrial and governmental agencies

## **Industrial and Manufacturing System Engineering Faculty**

Luis G. Occeña

chair and associate professor; PhD, Purdue University. Systems and information integration, computer-aided process modeling, product realization from design to manufacturing, industrial control and automation, artificial intelligence applications.

Linsey M. Barker

assistant professor; PhD, Virginia Tech. Patient safety, healthcare worker performance and safety, medical education, innovative healthcare service delivery technologies, and the development of assessment and quality improvement programs within the healthcare systems.

C. Alec Chang

director of graduate studies, associate professor; PhD, Mississippi State University. Automated measurement and inspection with computer vision, product design and quality engineering, multi-sensor fusion, management information systems.

Wooseung Jang

professor; PhD, University of California at Berkeley. Stochastic modeling and optimization, scheduling, production and quality control of manufacturing and service systems, supply chain management, enterprise resource planning systems.

Cerry M. Klein

professor; PhD, Purdue University. Integrated production systems, logistics systems, mathematical modeling, meta-heuristics, discrete and combinatorial optimization, multi-attribute decision making, fuzzy logic, enterprise resource planning systems.

James S. Noble

director of undergraduate studies, professor; PhD, Purdue University. Integrated material flow systems analysis, scheduling systems, economic evolution of manufacturing systems, manufacturing systems ecology, performance modeling, mixed integer programming, meta-heuristics, economic evaluation, static and dynamic systems modeling, industrial ecology.

Mustafa Y. Sir

assistant professor; PhD, University of Michigan. Modeling decision making under uncertainty, and developing algorithmic and computational methods needed to effectively (and practically) determine good (if not "optimal") solutions.

Esra Sisikoglu

assistant professor; PhD, University of Michigan. Stochastic Search Algorithms, Sampled Fictitious Play, (Approximate) Dynamic Programming, Algorithm Design, Large-scale Optimization, Mathematical Programming and Modeling, Game Theory, Convex Optimization.

Bin Wu

professor; PhD, Brunel University. Manufacturing and supply systems design; life-cycle management of manufacturing and supply systems; systems theory; systems analysis and design methodologies; decision making, information systems, static and dynamic systems modeling.

Larry G. David

professor emeritus; PhD, Purdue University. Quality control systems, statistical applications to manufacturing, analysis of capital expenditures, human factors engineering, product liability and safety.

Owen W. Miller

professor emeritus; DSc, Washington University. Statistical process control/statistical quality control, productivity enhancement for small business, IE/OR applications

## **Master's in Industrial & Manufacturing Systems Engineering**

### **Admission Contact Information**

Jonni Sutton (suttonjo@missouri.edu)  
E3437 Thomas and Nell Lafferre Hall; Columbia, MO 65211  
573-882-2691

### **Minimum Admission Criteria**

Applications accepted all year.  
Fall decision dates: March 1  
Spring decision date: September 15

Minimum GPA: 3.0/4.0  
Test of Written English: (TWE) of 4.0 (international applicants only)  
Minimum TOEFL scores (international applicants only):

Internet-based test (iBT)	Paper-based test (PBT)
80	550

(Minimum IELTS: 6.0)

Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal	Quantitative
Prior to August 1, 2011	350	700
On or After August 1, 2011	143	155

### **Foreign Language**

No foreign language is required in either program.

### **Required Application Materials**

[To the Graduate School:](#)

All required Graduate School documents

**To the IMSE Graduate Program:**

3 letters of recommendation  
Statement of Purpose  
Curriculum Vitae (CV)  
GRE scores

**TA/RA Hiring**

This academic department does not have any function of financial Aid.  
IMSE hires TA/RA automatically based on the department needs. No separate application or contacts are necessary; all top ranked applicants will be considered.

**Master of Science**

The Master of Science in Industrial Engineering (MS) degree consists of two options: a 30-credit hour research oriented program requiring a thesis or a 30-credit hour application oriented program requiring a project report. The MS Industrial Engineering thesis option curriculum is built upon the choice of a concentration area around which students can mold their overall academic effort including six hours of research. The three current focus areas are Operations Research and Statistics, Manufacturing/Production/Service Systems and Human and Enterprise Systems. Other focus areas are in development. The MS Industrial Engineering project option requires three hours of an approved project advised by a faculty member in lieu of a thesis, and one more course.

**Master of Engineering**

The Master of Engineering (ME) degree is a non-research thirty-six-credit-hour program for U.S. students designed to be a terminal degree. The ME curriculum is based upon a seven-course core with the remaining 15 hours made up of courses appropriate to the student's concentration area.

**Dual Master's Degree Programs: Master of Science and MBA**

The Department of Industrial and Manufacturing Systems Engineering, in cooperation with the College of Business, offers a dual master's degree program for those students who wish to combine the specialized skills of the industrial engineer with the general knowledge of the professional manager. The program was developed in recognition of the fact that solutions to organization problems often require that the engineer's analytical abilities be applied simultaneously with the manager's integrative perspective. This dual program has been carefully structured to provide the necessary academic background to obtain an MS in industrial engineering and an MBA simultaneously, in a minimum amount of time, usually two academic years.

**Master of Science and MHA**

The Department of Industrial and Manufacturing Systems Engineering, in cooperation with the health services management program of the School of Medicine, offers a dual master's degree program to prepare its graduates for careers in the design and administration of health-care delivery systems and organizations. The program was developed in recognition of the highly complex nature of health-care organizations. The program's basic objective is to fuse competencies in health-service management and in health-systems design. The required courses in the industrial engineering program serve as the area of specialization in the health services management program, and the required courses in the health-services management program are used as electives in the industrial engineering program. As a result, it is possible for the student to earn an MHA in health-services management and an MS in industrial engineering simultaneously.

## Doctorate in Industrial & Manufacturing Systems Engineering

### Admission Contact Information

Jonni Sutton (suttonjo@missouri.edu)  
 E3437 Thomas and Nell Lafferre Hall; Columbia, MO 65211  
 573-882-2691

### Minimum Admission Criteria

Applications accepted all year.  
 Fall decision dates: March 1  
 Spring decision date: September 15

Minimum TOEFL scores (international applicants only):

Internet-based test (iBT)	Paper-based test (PBT)
80	550

Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal	Quantitative
Prior to August 1, 2011	350	700
On or After August 1, 2011	143	155

Minimum GPA: 3.5/4.0

Completed master's thesis or equivalent

Compatible research interests or capabilities with a member of the faculty

Note: Only highly qualified students are accepted for advisement in the PhD program. The faculty looks for excellence in undergraduate and graduate work, high GRE scores, thesis training, and strong indications of research potential.

This department does not use "rolling admission." Applicants will be notified within a month after decision date.

### Required Application Materials

[To the Graduate School:](#)

All required Graduate School documents

[To the IMSE Graduate Program:](#)

3 letters of recommendation  
 Abstract of thesis and copy of papers  
 Statement of Purpose  
 Curriculum Vitae (CV)  
 GRE scores

### TA/RA Hiring

This academic department does not have any function of financial Aid.

IMSE hires TA/RA automatically based on the department needs. No separate application or contacts are necessary; all top ranked applicants will be considered.

### **About the Doctoral Degree**

Programs are individually tailored to meet students' objectives and to culminate in an original research dissertation.

### **Degree Requirements**

The granting of a PhD requires completion of five major requirements:

- A qualifying examination,
- A course of study,
- Comprehensive examination,
- Acceptance of dissertation proposal, and
- Final public defense of the completed dissertation.

The PhD builds upon the MS programmatic areas. The three current focus areas are Operations Research and Statistics, Manufacturing/Production/Service Systems and Enterprise Information Systems. Other focus areas are in development. Fundamental IE knowledge in each is expected. The basic goals of the PhD program are to provide students with a solid understanding of the theoretical bases for the latest tools and techniques of systems analysis and design, an extensive experience in applying these analyses and design tools and techniques, and research experience in the development of new tools or applications of existing techniques to design or analyze problems.

### **Courses**

See Industrial & Manufacturing Systems Engineering (IMSE) in the myZou online system.

## MU Informatics Institute Graduate Programs

muiigraduateprogram@missouri.edu  
241 Engineering Building West  
Columbia, MO 65211-2060  
573-882-9007  
<http://muii.missouri.edu/>

### About the MU Informatics Institute (MUII)

Building on a tradition of outstanding informatics education and research at Missouri, the doctoral program is a joint program of more than 40 faculty from 14 different departments in 7 schools/colleges, including the Departments of Animal Sciences, Biochemistry, Biological Sciences, Computer Science, Family and Community Medicine, Geology, Health Management and Informatics, Industrial & Manufacturing Systems Engineering, Information Science and Learning Technologies, Life Sciences, Molecular Microbiology and Immunology, Nursing, Pathology & Anatomical Sciences, and Physics who make up the Informatics Institute (MUII). The Institute offers emphasis areas in bioinformatics and health informatics. Each emphasis area stresses skill sets and research appropriate to the subfield within the broad area of informatics. A core curriculum provides all students with a foundation of knowledge and tools in biology, computer sciences, health systems, and statistics, after which they complete further coursework in their chosen emphasis area. The integrated program assures broad exposure to the field and fosters new insights into innovative research concepts.

### Degrees Offered

MUII offers a doctoral degree (PhD) in two emphasis areas: bioinformatics and health informatics.

Students with areas of interests outside of informatics may also wish to pursue a collaborative degree program between MUII and other degree programs. The purpose of the collaborative degree program is to allow students the opportunity to obtain advanced degrees in fields that complement the study of informatics and expand the student's knowledge.

MUII students may also select the collaborative degree between the Master of Public Health program (MPH) and MUII PhD in Informatics program. Students must be accepted by both MUII and the MPH program to be eligible. Upon completion of the PhD requirements for MUII and degree requirements for the MPH in Health Promotion and Policy with Focus on Informatics, students will receive both the PhD in Informatics and MPH degrees. For a full list of courses for the MPH in Health Promotion and Policy with Focus on Informatics, please visit the MPH program website <http://publichealth.missouri.edu/>.

### Resources and Facilities

MUII is located in multiple locations on MU campus with well-equipped laboratories containing state-of-the-art instrumentation and computing facilities for informatics research. Major instrumentation includes a multi-vendor compute cluster with over 190 compute nodes, more than 1200 Intel 64 Xeon processor cores, and 5100GB total memory; an SGI Altix 3700 Bx2 server with 64 Itanium2 processors, and access to a cluster of 4 Sun VT240 systems housing 8 TimeLogic DeCypher field programmable gate array (FPGA) search engines. MUII also has access to a variety of storage resources, which are connected via high-speed data links to the computing resources.

## **Faculty Areas of Research Interest**

Faculty research covers a wide range of interests including structural bioinformatics, systems biology, cancer informatics, chemical informatics, epigenomics, phenomics, text mining & understanding, electronic health records, evidence-based medicine, personalized medicine, human-computer interactions in health care, consumer informatics, patient safety, public health informatics, geospatial informatics, information retrievals, biomedical data mining & knowledge discovery, and machine learning. For a list of faculty members and their research areas, please visit our web page <http://muui.missouri.edu>.

## **Internal Funding**

Fellowships and research/teaching assistantships are available for highly qualified applicants. Application information is available on the Institute's website.

## **Informatics Faculty**

### *Chi-Ren Shyu*

director, Paul K. and Diane Shumaker Endowed Professor; PhD, Purdue University. Biomedical Informatics, large-scale biomedical database retrieval, imaging informatics, structural bioinformatics, phenomics, geospatial informatics.

### *Sanda Erdelez*

associate director for education, professor; PhD, Syracuse University. Human-computer interaction, usability of health information technologies, healthcare information needs and uses.

### *Scott Givan*

associate director for services, research assistant professor; PhD, University of Oregon. Bioinformatics, genome annotation, gene expression analysis; computational infrastructure development to effectively deliver resources to researches; web-based data analysis and delivery systems; analysis of high throughput biological data; visualization of high throughput biological data.

### *Gregory L. Alexander*

associate professor; PhD, RN, University of Missouri. Nursing Informatics, human factors, human computer interaction, quality improvement.

### *Gerald Arthur*

research assistant professor; MD, University of Chicago. Pathology informatics, computational biology, epigenomics.

### *Michela Becchi*

assistant professor; PhD, Washington University in St. Louis. High-performance processor architectures, networking systems and applications, data structure design and algorithm acceleration on parallel computer architectures.

### *Suzanne Austin Boren*

associate professor; PhD, University of Missouri. Health informatics, consumer informatics, health care quality, evidenced-based medicine, patient safety.

*Shi-Jie Chen*

professor; PhD, University of California-San Diego. Bioinformatics, statistical thermodynamics and kinetics of RNA and protein folding.

*Jianlin Cheng*

associate professor; PhD, University of California, Irvine. Bioinformatics, systems biology, machine learning and data mining.

*Gavin C. Conant*

assistant professor; PhD, University of New Mexico. Bioinformatics, molecular evolution, polyploidy, comparative genomics, network biology.

*Peter Cornish*

assistant professor; PhD, Texas A&M University. Bioinformatics, RNA biochemistry, single molecule fluorescence, NMR, RNA folding and dynamics.

*Justin Wade Davis*

associate professor; PhD, University of Missouri. Biostatistics, classification and discriminant analysis, dimension reduction, time series, and wavelet analysis.

*Guilherme DeSouza*

associate professor; PhD, Purdue University. Robotics and robotic vision, human-computer interaction, robotic assistive technology.

*Ye Duan*

associate professor; PhD, State University of New York at Stony Brook. Bioinformatics, imaging analysis, visualization.

*Kristofer Hagglund*

professor, Associate Dean of the School of Health Professions, Director of the Master of Public Health Program; PhD, University of Alabama at Birmingham.

*Lanis Hicks*

professor; PhD, University of Missouri. Health informatics, health economics, rural health, telemedicine, nursing home quality.

*Jeannette Jackson-Thompson*

research associate professor; PhD, University of Missouri. Health informatics, breast and colorectal cancer incidence and trends; quality of life for cancer survivors and the general population; comparative effectiveness research; database management, data quality and data security.

*Toni Kazic*

associate professor; PhD, University of Pennsylvania. Bioinformatics, biochemical networks, chemical informatics, complex phenotypes, federated databases, formal languages.

*Min Soon Kim*

assistant professor; PhD, University of Texas-Austin. Health informatics, human factors engineering, health information technology evaluation, health quality evaluation, public health informatics.

*Matthew Klaric*

assistant research professor; PhD, University of Missouri. Geospatial intelligence, satellite remote sensing, image processing.

*Karl Kochendorfer*

assistant professor; MD, University of Illinois-Chicago. Medical informatics, family medicine, obstetrics, women's health.

*Dmitry Korkin*

assistant professor; PhD, University of New Brunswick. Bioinformatics, computational biology, structural bioinformatics, machine learning and pattern recognition.

*Ricky Leung*

assistant professor; PhD, University of Wisconsin-Madison. Health economics and management, innovation and emerging technologies, international healthcare.

*Timothy Matisziw*

assistant professor; PhD, The Ohio State University. Geoinformatics, network and location modeling, geographic information science, operations research, GIS and environmental planning.

*Joi Moore*

associate professor; PhD, University of Georgia. Electronic performance support systems, interactive learning environments, human-computer interaction.

*Satish S. Nair*

Robert Buescher Professor; PhD, The Ohio State University. Medical informatics, systems biology, computational neuroscience, psychiatric engineering.

*Youngju Pak*

assistant professor; PhD, University at Buffalo, SUNY. Causal models, structural equation modeling, graphical modeling, multivariate analysis, measurement error model, multi-level hierarchical linear model, general non-linear models, longitudinal data analysis, bootstrap methods, robust methods.

*Kalyan Pasupathy*

assistant professor; PhD, Virginia Tech. Health informatics, operations research, optimization, simulation, data mining, systems modeling, systems informatics.

*Win Phillips*

clinical associate professor; PhD, Yale University. Health informatics, electronic medical record systems, computerized physician order entry systems.

*J. Chris Pires*

associate professor; PhD, University of Wisconsin, Madison. Bioinformatics, phylogenomics, evolutionary bioinformatics, polyploidy and comparative genomics, phylogeny and chromosomal evolution.

*Mihail Popescu*

associate professor; PhD, University of Missouri. Health informatics, eldercare technologies, medical decision making, fuzzy logic.

*Cheryl Rathert*

assistant professor; PhD, University of Nebraska, Lincoln. Health informatics, health care work environments and work processes, organizational ethics, Telehealth, patient and health care provider perceptions and experiences.

*MaryEllen Sievert*

professor emeritus; PhD, University of Missouri. Medical libraries, healthcare information need and uses, medical information retrieval

*Eduardo Simoes*

professor, Chairman and Health Management and Informatics Alumni Distinguished Chair; MD Faculdade de Medicina, Universidade de Pernambuco. Biomedical informatics, medical epidemiology research, public health informatics, health informatics.

*Gordon K. Springer*

associate professor; PhD, Pennsylvania State University. Bioinformatics for plant and animal genomics, health informatics, high-performance computing.

*Linsey Barker Steege*

assistant professor; PhD, Virginia Tech. Human factors engineering, industrial ergonomics and occupational safety, health systems engineering, human systems integration, human performance modeling.

*Douglas Wakefield*

professor; PhD, University of Iowa. Health informatics, management development, quality, job satisfaction and turnover.

*Cuizhen (Susan) Wang*

associate professor; PhD, Michigan State University. Geoinformatics, bio-environmental remote sensing, GIS and spatial analysis, innovation modeling of optical/radar synergy in biophysical remote sensing, environmental stress monitoring.

*Michael Wang*

assistant professor, Director of Diagnostic Molecular Pathology Laboratory; PhD, The University of Texas Health Science Center at San Antonio; MD, Lanzhou University. Diagnostic hematopathology, molecular mechanisms of leukemia and lymphoma, diagnostic molecular pathology, molecular detection of residual cancer cells and pathogens.

*Dong Xu*

Dowell Professor; PhD, University of Illinois, Urbana-Champaign. Bioinformatics, structural bioinformatics, genomic sequence analysis, gene expression data analysis, epigenomic data analysis, mass spectrometry data analysis, gene regulation, biological pathway, cancer informatics, soybean informatics.

*Illhoi Yoo*

associate professor; PhD, Drexel University. Health informatics, semantic-oriented information retrieval, biomedical text mining.

*Xiaoqin Zou*

assistant professor; PhD, University of California, San Diego. Bioinformatics, structural bioinformatics, virtual database screening, computer-aided drug design, modeling of quantitative structure-function relationships of membrane proteins.

## Doctorate in Informatics

### Admission Contact Information

MUII Staff ([mailto: muuiadmissions@missouri.edu](mailto:muuiadmissions@missouri.edu))  
 241 Engineering Building West  
 Columbia, MO 65211-2060  
 Phone: 573-882-9007  
 FAX: 573-884-8709  
 Informatics Institute (MUII) website: <http://muui.missouri.edu/>

### Admission Criteria

Fall deadline: The deadline for Fall admission is March 1. However, to be considered for departmental and Graduate School fellowships and assistantships, applications should be submitted by January 15<sup>th</sup>.

- Preferred GPA: 3.3 out of 4.0
- Preferred GRE scores\*:

When did you take the GRE?	Verbal + Quantitative	Analytical
Prior to August 1, 2011	1200	3.5-4.0
On or After August 1, 2011	309	3.5-4.0

\*or a preferred GMAT score of 570

- Preferred TOEFL scores\*\*:

Internet-based test (iBT)	Paper-based test (PBT)
90	577

\*\*or a preferred IELTS score: 6.0

- Sufficient background and training to pursue advanced degree in informatics

### All Required Documents:

All students are required to apply through the Graduate School's on-line process. To begin your application, please see ApplyYourself website below.

<https://app.applyyourself.com/?id=umc-grad>

- 1) Curriculum Vitae
- 2) Statement of Purpose, which should include a summary of why the applicant is interested in pursuing an advanced informatics degree, a brief description of your previous research experiences, the specific area of informatics you are interested in pursuing, and your future career goals and plans in the informatics field.
- 3) GRE/GMAT scores
- 4) TOEFL/ELTS scores for international applicants, if required.
- 5) Three letters of recommendation from faculty or supervisors who can evaluate the applicant's credentials and potential to become successful in the area of informatics.
- 6) Official transcripts from each college and university you have attended:  
 Official transcripts must be sent from each institution directly to the Graduate School.

### **Optional Documents:**

Applicants are encouraged to submit representative publications in informatics, if available.

### **Informatics Doctoral Degree Requirements**

The following is a brief synopsis of the general degree requirements; please see the Informatics Institute web site (<http://muui.missouri.edu/index.php?pid=3>) for complete details:

- Students must take courses listed in the core and emphasis areas
- Students must pass a qualifying examination
- Students must present at least one institutional seminar annually
- Students are required to complete a comprehensive exam, which includes written and oral elements, within a specified time frame
- Students must pass a comprehensive examination at least 7 months before their scheduled defense
- Students must submit and defend a dissertation describing the results of successful and original research in one of the branches of informatics.
- To show research progress, students are expected to be working toward presenting at conferences and publishing in peer-reviewed journals based on their informatics research.

### **Courses**

The PhD courses offered by MUUI are listed as INFO INST in the myZou online system.

## Information Science & Learning Technologies Graduate Programs

School of Information Science and Learning Technologies  
Student Coordinator's Office, 304 Townsend Hall  
Columbia, MO 65211  
573-882-4546 or toll free 877-747-5868  
<http://education.missouri.edu/SISLT/>

### About Information Science & Learning Technologies

In January 1997, the School of Information Science & Learning Technologies became the home for MU's graduate programs in Library and Information Science and Educational Technology as well as a new, interdisciplinary doctoral program in Information Science & Learning Technologies. SISLT faculty are internationally renowned for their research and development accomplishments. Faculty and students are committed to a collaborative, interdisciplinary approach – both within MU and among other research-intensive universities. Nowhere is this more evident than in the [Allen Institute](#), a 10,000 square foot facility dedicated to supporting collaborative R&D at the intersection of Information & Learning.

### Degrees Offered

The emphasis areas available in the Information Science and Learning Technologies program include:

MA: Library Science

MEd and EdSp: Educational Technology (MEd and EdSp available online through Mizzou Online, <http://online.missouri.edu/>)

PhD: Information Science & Learning Technologies

### Information Science and Learning Technologies Faculty

Denice Adkins  
associate professor; PhD, University of Arizona.

Jenny Bossaller  
assistant professor; PhD, University of Missouri.  
John M. Budd  
professor; PhD, University of North Carolina-Chapel Hill.

Julie Caplow  
associate professor; PhD, University of Iowa.

Sanda Erdelez  
professor; PhD, Syracuse University.

Linda Esser  
associate teaching professor; EdD, University of Kentucky.

Gail Fitzgerald  
professor; PhD, University of Iowa.

Twyla Gibson  
assistant professor; PhD, University of Toronto.

Jane Howland  
associate teaching professor; PhD, University of Missouri.

David Jonassen  
professor with distinction; EdD, Temple University.

Aimee Klimczak  
assistant teaching professor; PhD, University of Missouri.

Thomas R. Kochtanek  
associate professor; PhD, Case Western Reserve University.

James Laffey  
professor; PhD, University of Chicago.

Chris LeBeau  
assistant teaching professor; MLS, Long Island University; MBA, Creighton University.

Rose Marra  
professor; PhD, University of Colorado-Denver.

Joi Moore  
associate professor; PhD, University of Georgia.

Heather Moulaison  
assistant professor, PhD, Rutgers The State University of New Jersey.

Karen Robinson  
associate teaching professor; MLS, Emporia State University.

MaryEllen Sievert  
professor emerita; PhD, University of Missouri.

John Wedman  
director, professor; PhD, University of Oklahoma.

## Library Science MA

### Admission Contact Information

SISLT Student Coordinator's office  
 304 Townsend Hall  
 Columbia, MO 65211  
 Phone: 573-882-4546 or toll free 877-747-5868  
 Email: [sislt@missouri.edu](mailto:sislt@missouri.edu)

### Admission Criteria

*Please Note:* Application deadlines are strictly adhered to and no applicant is considered for admission until all required application materials are received.

Fall deadline: April 1  
 Spring deadline: October 1

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal	Quantitative	Analytical
Prior to August 1, 2011	550	550	4.0
On or After August 1, 2011	156	146	4.0

Minimum GPA: 3.0 in the last 60 hours of the undergraduate degree

### Required Application Materials

#### [To the Graduate School](#)

All required Graduate School documents, including the online graduate application and bachelor's transcripts.

*To the Library Science MA program* <http://lis.missouri.edu/apply>

- Statement of Purpose: Briefly describe (in 500 words or less) your immediate educational and career goals. Please respond to the following questions:
  1. *Why do you want to earn a master's degree in Library and Information Science?*
  2. *What areas of Library and Information Science interest you?*
  3. *Do you anticipate working in a particular type of library or information agency?*

Note: Statement can be uploaded into Graduate School's online application system.

- Curriculum vitae or resume
- 2 letters of reference
- GRE scores

### **Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program Web site or ask the program contact for details.

### **About the Library & Information Science MA Program**

The program is accredited by the American Library Association. The mission of the Library Science (LS) program is to contribute to the essential knowledge, skills, and values of librarianship, instill these in our students.

#### *Goals:*

1. Design and implement a curriculum that incorporates ALA's Core Competences into a thorough generalist program.
2. Develop pedagogical methods—individually and collaboratively—that use effective techniques to enhance student learning.
3. Expand the knowledge base of the field through innovative research and scholarship and share the results to the broadest professional and disciplinary communities.
4. Engage professionals and organizations in Missouri, the nation, and the world, sharing the knowledge and talents of the faculty to contribute to the development of the field.
5. Create a global awareness of the program's excellence through the integration of teaching, research, and service.

### **Library Science MA Plan of Study**

Our program is the only Master's Degree in the state of Missouri to be fully accredited by the American Library Association. Upon successful completion of the 42-hour program of study, you will receive a Master of Arts in Information Science & Learning Technologies with an Emphasis in Library Science. The LIS curriculum reflects the foundations of the field as well as the critical issues facing the profession. Most LIS faculty are based in Columbia, with clinical faculty in St. Louis and Kansas City. Partnerships with Missouri State University and the University of Nebraska-Omaha allow us to provide classes in those locations as well. Students seeking certification as a school librarian/media specialist need to meet the certification requirements in place at the time of graduation.

### **Remaining in Good Standing**

The courses used in the program for the master's degree must be no older than 8 years at the time of graduation.

#### *Probation*

Any one of the following is cause for an LIS student being placed on academic probation for the remainder of the student's graduate program:

- a student's cumulative GPA falls below 3.0;
- a student receives one or more letter grades of C or F in a semester.

An LIS student who earns a letter grade of F in a core course must repeat the course and earn a letter grade of B or higher.

When an LIS student is placed on academic probation, the student and the student's advisor will be notified. It is the student's responsibility to contact and schedule a conference with the academic advisor to develop a plan to remedy the situation. The student and the advisor will jointly sign a document enumerating the specific steps to be accomplished during the subsequent semester.

### *Dismissal*

Any one of the following is cause for dismissal from the LIS Program:

- a student's GPA falls below the required 3.0 for a second semester in the student's graduate LIS program;
- a student earns a letter grade of C or F in one or more courses in a semester, then earns a letter grade of C or F in one or more courses in a subsequent semester.

The dismissal letter will inform the student of the right to appeal, first, to the LIS Program and, second, to the Graduate Faculty Senate. A copy of the dismissal letter will be sent to the Graduate Dean and the student's advisor at the same time it is sent to the student.

LIS students must also demonstrate continuous enrollment in courses related to the degree following admission to remain on active status.

- Admitted students who have not enrolled for two consecutive semesters (fall-spring/spring-fall) will be notified of the pending change from active to inactive status and given an opportunity to enroll in courses the semester following the notification (March 15 for fall semester; October 15 for spring semester).
- Students who do not enroll in the semester following notification will be moved to inactive status and removed from the list of current LIS graduate students.
- Students moved to inactive status must reapply to the program and meet the admission requirements published on the SISLT Web site at the time the inactive student reapplies.

### **Library Science MA Comprehensive Examination**

Every library science MA student must complete a written comprehensive examination. The examination structure will include 4 general areas of concentration:

- Issues in Library and Information Science
- Information Technology
- Management of Information Services
- Library and Information Services

## **Educational Technology MEd or EdSp**

### **Admission Contact Information**

SISLT Student Coordinator's Office

304 Townsend Hall

Columbia, MO 65211

Phone: 573-882-4546 or toll free 877-747-5868

Email: [sisl@missouri.edu](mailto:sisl@missouri.edu)

### **Admission Criteria**

Deadline for Fall entrance: May 1

Deadline for Spring entrance: October 1

Deadline for Summer entrance: March 1

- Undergraduate GPA of at least 3.0 in the last 60 credit hours of the degree

- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

- Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal	Quantitative	Analytical
Prior to August 1, 2011	500	500	3.5
On or After August 1, 2011	156	146	4.0

### Required Application Materials

#### To the Graduate School:

All required Graduate School documents, including the online graduate application and bachelor's transcripts

#### *To the Educational Technology M Ed or EdSp Program*

<http://education.missouri.edu/SISLT/EdTech/index.php>

Statement of Purpose (can also be uploaded into Graduate School online application)

Curriculum Vitae or Resume

2 letters of reference

GRE scores

Any supporting materials

### Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

### About the Educational Technology MEd and EdSp Programs

The Educational Technology (EdTech) emphasis area at MU is your portal to excellence and leadership in designing, developing, and implementing technology in education, training and performance support.

Three focus areas are available for your degree. Students who focus on **Learning Systems Design & Development** learn to plan and create the learning and performance support resources used by individuals, groups, and organizations. Students who focus on **Technology in Schools** learn the strategies and processes for advancing the use of new technologies in schools, colleges, and other learning environments, (e.g., virtual schools; online courses). Students who focus on the **Online Educator** learn to design, implement, and evaluate effective online learning experiences in a variety of settings.

Working with an academic advisor, each student develops a customized program of study. You pick the professional goal that makes sense to you, and the EdTech faculty will help you transform your goal into your reality. For more details, please visit <http://EdTech.missouri.edu>.

### Educational Technology MEd or EdSp Plan of Study

The Educational Technology program is available at the master's (MEd) and educational specialist (EdSp) levels. The MEd consists of 30 graduate credit hours. The EdSp is a 30 credit hour option is available for students who

already have a master's degree. The Educational Technology curriculum allows you to customize your course work by focusing on technology design and development or technology implementation.

**Educational Technology Careers**

Your degree in Educational Technology will open an array of career options. Some graduates work in K-12 schools, others work in corporations, and still others apply their skills in government, healthcare, higher education, and other settings. For example, some of our recent graduates are Software Designers and Developers, Learning Strategy Managers, Adaptive Technology Specialists, Training Designers, School Technology Coordinators, and Online Instructors. Whatever the setting, you will graduate with a skill set that will serve you well in the future.

**Doctorate in Information Science & Learning Technologies**

**Admission Contact Information**

SISLT Student Coordinator's Office  
 304 Townsend Hall  
 Columbia, MO 65211  
 Phone: 573-882-4546 or toll free 877-747-5868  
 Email: [sislt@missouri.edu](mailto:sislt@missouri.edu)

**Admission Criteria**

Deadline for Fall entrance: February 15  
 Deadline for Spring entrance: September 15

- Undergraduate GPA of at least 3.0 in the last 60 credit hours of the degree
- Graduate GPA of 3.5
- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

- Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal	Quantitative	Analytical
Prior to August 1, 2011	500	500	3.5
On or After August 1, 2011	153	144	3.5

In addition to meeting admission requirements, all students applying to the PhD program must complete faculty interviews and documentation of their research, development interests and capabilities. If you do not meet these standards, you should provide evidence of exceptionality in one or more other categories.

**Required Application Materials**

[To the Graduate School:](#)

All required Graduate School documents, including the online graduate application and bachelor's transcripts.

*To the Information Science & Learning Technologies Program*

<http://education.missouri.edu/SISLT/PhD/index.php>

Statement of Purpose (can also be uploaded into Graduate School online application)  
Curriculum vitae or resume  
3 letters of reference  
GRE scores  
Any supporting materials (i.e. published papers or technical reports)

### **Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program Web site or ask the program contact for details.

### **About the Program**

The PhD program prepares professionals to understand and influence learning, information and performance in diverse settings, especially through the use of interactive technologies. We seek individuals who are committed to conducting research that integrates theory and practice.

You will gain the competencies required to:

- Analyze specific informational organization and retrieval, learning and performance needs and evaluate systems to meet these needs.
- Design, develop and implement technologies and technological interventions to improve information organization and retrieval, learning and performance.
- Conduct systematic research, which contributes to the knowledge base of learning, information organization and retrieval, performance and/or technology.

### **Plan of Study**

Course work, internships and independent study projects support the achievement of these competencies, and your program centers on producing a portfolio of achievements indicating that the competencies have been attained. While course work supports production of the portfolio, we encourage students to develop products that cut across several courses, resulting in products that are personally satisfying, solve real problems and represent high quality work. We are particularly interested in products developed in collaboration with other students, practicing professionals and others beyond our program and campus.

### **Research**

The program culminates with a significant research effort that contributes to the knowledge base of learning, information organization and retrieval, performance and/or technology. Whether one major study or a series of smaller studies, the research is designed to position our graduates alongside the leading theorists, researchers and practitioners in the field. There is no minimum number of 9090 research hours.

### **Courses**

See Information Science & Learning Technologies (IS LT) in the myZou online system.

## Journalism Graduate Programs

School of Journalism

179 Gannett Hall

573-882-4852

<http://www.journalism.missouri.edu/> (school)

<http://www.journalism.missouri.edu/graduate/> (graduate programs)

### About Journalism

The Missouri School of Journalism awarded the first master's and doctoral degrees in journalism in 1921 and 1934, respectively. The master's and doctoral programs at the School enjoy superb reputations, both among scholars and among practitioners in news, advertising, public relations and strategic communication.

For the master's program, Missouri Journalism offers a complete set of real-media experiences. We operate the only network affiliate (NBC) television station in the country used to train journalism students. We publish a community daily newspaper (not a campus paper), and we operate four major web sites, a local magazine and an international magazine. Students also may train at our campus-based NPR affiliate.

Our strategic communication students design media campaigns for local and national clients. Our students have created advertising and public relations campaigns for Nokia, Apple, Dr Pepper, Anheuser-Busch, Duncan Hines, DuPont, Dow Chemical, Kinko's, Eastman Kodak and many other leading international brands.

We operate educational programs in Washington, D.C., New York, and Brussels where many of our students carry out their capstone projects or do research. We also partner with educational programs around the world.

### Degrees

Master of Arts in Journalism

PhD in Journalism

### Facilities and Resources

A variety of special facilities and resources are available to help students meet their educational objectives. *The Columbia Missourian*, a general circulation daily newspaper with full-leased wires of *The Associated Press* and *The New York Times Service*, KOMU-TV, an NBC affiliate, KBIA-FM, a National Public Radio station, Mojo Ad Agency and *Vox* magazine provide students the opportunity for hands-on training under faculty supervision and to conduct applied research.

The [Journalism Library](#) subscribes to more than 125 newspapers and magazines worldwide and catalogs more than 40,000 volumes. Many more resources are available in electronic format.

The State Historical Society of Missouri, oncampus, has an extensive collection of state newspapers dating from 1808.

The [Freedom of Information Center](#) maintains a day-to-day study of the actions by government, media and society affecting the movement of information.

The national headquarters of [Investigative Reporters and Editors](#) and the [National Institute for Computer Assisted Reporting](#) provide educational services to reporters, editors and others interested in investigative journalism.

The Service Journalism program, based in the magazine sequence, focuses on how to effectively provide information to consumers and offers workshops for professionals, covering such topics as health and nutrition, travel, science and minorities coverage.

The [Center for Advanced Social Research](#) provides survey and other services to a broad variety of governmental, corporate and media organizations. It employs more than 50 graduate students from around the MU campus.

The [Association of Health Care Journalists](#) is headquartered at Missouri and is dedicated to advancing public understanding of health care issues. Its mission is to improve the quality, accuracy and visibility of health care reporting, writing and editing.

The [Center on Religion & the Professions](#) works to improve religious literacy among professionals, to help them serve a diverse public. As America grows more religiously diverse, professionals need to better understand the religious traditions and beliefs of the public they serve. CORP's interdisciplinary, practical and applied work centers on that mission. Founded in 2003 with a grant from The Pew Charitable Trusts, the Center is one of Pew's 10 Centers of Excellence. CORP is affiliated with [Religion Newswriters Association](#).

Founded in 2003 with a generous gift from the Donald W. Reynolds Foundation, the [Reynolds Journalism Institute](#) is committed to developing and testing new ways to improve journalism through new technology and improved processes.

### **Special Events**

Each year the school sponsors the [Missouri Honor Medal](#) award program, which brings contemporary leaders in mass communications to the campus. The school also directs a number of professional development and awards programs, including the international competition for the best Pictures of the Year.

### **Honor Society**

Kappa Tau Alpha, national honor society for scholarship in journalism, founded at the university in 1910, has its headquarters in the school.

### **Funding**

An array of competitively awarded fellowships, assistantships, scholarships and other financial aid opportunities are available. All applicants for admission are considered for any available funding. No separate application form is needed.

### **Journalism Faculty**

R. Dean Mills  
dean, professor; PhD, University of Illinois.

Esther Thorson  
associate dean for graduate studies and research, professor; PhD, University of Minnesota.

Jeanne Abbott  
associate professor, PhD, University of Missouri

William Allen  
assistant professor; MA, University of Illinois.

Jacqui Banaszynski  
professor; MA, Marquette University.

Jackie Bell  
associate professor; MA, Ohio University.

Clyde Bentley  
associate professor; PhD, University of Oregon.

Mary Kay Blakely  
associate professor; MA, Northern Illinois University.

Paul Bolts  
associate professor; PhD, Indiana University.

Greg Bowers  
assistant professor; MA, Western Washington University.

Brian S. Brooks  
associate dean of undergraduate studies, professor; MA, University of Missouri.

Phillips Brooks  
associate professor; MA, University of Missouri.

Glen Cameron  
professor; PhD, University of Texas-Austin.

Stephanie Craft  
associate professor; PhD, Stanford University.

Frederick W. Cropp  
associate professor; PhD, University of Missouri.

Sandra Davidson  
associate professor; PhD, University of Connecticut-Storrs.

Charles Davis  
associate professor; PhD, University of Florida.

Margaret Duffy  
associate professor; PhD, University of Iowa.

John Fennell  
associate professor; MFA, University of Wisconsin-Milwaukee.

Cynthia Frisby  
associate professor; PhD, University of Florida.

B. Keith Greenwood  
assistant professor; PhD, University of Missouri.

Gary Grigsby  
associate professor, MA, University of Missouri

Michael Grinfeld  
associate professor; JD, New England School of Law.

Suzette Heiman  
associate professor; MA, Truman State University.

Andrea Heiss  
assistant professor; PhD, University of Iowa.

David Herzog  
associate professor; BA, Temple University.

Amanda Hinnant  
assistant professor; PhD, Northwestern University.

Berkley Hudson  
assistant professor; PhD, University of North Carolina-Chapel Hill.

Lynda Kraxberger  
associate professor; MA, University of Missouri.

Greeley Kyle  
assistant professor; MA, University of Memphis.

Maria Len-Rios  
assistant professor; PhD, University of Missouri.

Glenn Leshner  
associate professor; PhD, Stanford University.

Debra Mason  
professor; PhD, Ohio University.

Michael McKean  
associate professor; MA, Rice University.

Daryl R. Moen  
professor; MA, University of Minnesota.

Earnest L. Perry  
associate professor; PhD, University of Missouri.

Katherine Reed  
assistant professor; MA, Hollis University.

Rita Reed  
associate professor; MA, University of Missouri.

David Rees  
associate professor; MA, University of Missouri.

Jennifer Reeves  
associate professor; MA, Aquinas College.

Randy Reeves  
associate professor; MA, University of Missouri.

Shelly Rodgers  
associate professor; PhD, University of Missouri.

Jennifer Rowe  
associate professor; MA, University of Missouri.

Janet Saidi  
assistant professor, MA, University College, London

Randall Smith  
professor, BJ, University of Missouri

Martha Steffens  
professor, BA, Indiana University

Yong Volz  
assistant professor; PhD, University of Minnesota.

Timothy Vos  
assistant professor; PhD, Syracuse University.

Margaret Walter  
associate professor; MA, Ball State University.

Thomas Warhover  
associate professor; BJ, University of Missouri.

Lee Wilkins  
professor; PhD, University of Oregon.

Kevin Wise  
assistant professor; PhD, Stanford University.

Stacey Woelfel  
associate professor; PhD, University of Missouri.

## Master of Arts in Journalism

### Admission Contact Information

Ginny Cowell (cowellvj@missouri.edu)  
179 Gannett Hall; Columbia, MO 65211  
573-882-4852  
<http://www.journalism.missouri.edu/graduate/masters/>  
<http://journalism.missouri.edu/programs/online/>

### Master's Admission Criteria

#### Campus program deadlines:

Fall deadline: January 1  
Spring deadline: September 1

#### Online program deadlines:

Fall deadline: July 1  
Spring deadline: November 15  
Summer deadline: April 15

- Minimum Academic IELTS scores:

Listening	
Reading	
Writing	
Speaking	7.0
<b>OVERALL Score</b>	7.0

- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
Speaking: 25	
100	600

- Suggested GRE scores:

When did you take the GRE?	Verbal + Quantitative
Prior to August 1, 2011	1100
On or After August 1, 2011	V: 153-160; Q: 144-148

- Minimum GPA: 3.0 in last 60 hours

Note: Deadlines are adhered to strictly, and no applicant is considered for admission until all required information is received.

## **Required Application Materials**

### [To the Graduate School:](#)

All required Graduate School documents

### *To the Journalism Master's Program:*

Please upload the following application materials into the online [Graduate School application in Apply Yourself:](#)

- 3 essays as specified on Departmental application website
- Résumé
- 3 letters of recommendation (use the online Graduate School application system)

*Please submit 2 hard copy sets of official transcripts and official GRE scores to:*

Earl English Graduate Studies Center  
Missouri School of Journalism  
University of Missouri  
179 Gannett Hall  
Columbia, MO 65211-1200

## **Financial Aid from the Program**

Limited fellowships, assistantships, scholarships and other financial aid opportunities are available. All applicants for admission are considered for any available funding. No separate application form is needed. Check the program Web site or ask the program contact for details.

## **About the Master of Arts**

The program leading to the MA degree is designed to accommodate several objectives, including: comprehensive professional preparation for careers in the news media and mass communications; expansion of previous professional preparation and experience (e.g. newspaper editing) into a new area (e.g. broadcasting reporting); comprehensive academic preparation for careers in journalism teaching and research; and combinations of the three.

## **Degree Options**

### *Program Models*

Students choose from more than 20 program models, covering the full range of skills and media of journalism and strategic communication. Because the faculty periodically updates these models, students should visit the school's Web site for the latest details. In addition to the course work in any model, students complete either a thesis or a professional project. Students who make progress on the degree requirements and maintain at least a B average each semester are considered to be in good standing.

### *Five-year Bachelor to Master Program*

Another option for students who seek a master's degree is the 5-year bachelor to master's program. To be eligible for this option, students must have completed a bachelor's degree in journalism from Missouri. Students following the 5-year plan are expected to carry 10-12 hours per semester and will graduate after completion of two semesters of course work and a third semester of project or thesis. Only graduates of Missouri Journalism's undergraduate program are eligible for the BJ/MA program.

### *Joint Journalism and Law Programs*

The School of Journalism and the School of Law have created joint programs that provide an opportunity to earn a MA in Journalism and either a JD or an LLM from Law with an emphasis in conflict resolution. Students in the joint programs complete one of the journalism models and the course requirements for the law degree, with a block of courses that are used for both degrees.

### *Dual-degree option with Masters of Public Health*

The School of Journalism and the program in Public Health have created a dual-degree option that allows students to earn a journalism degree in reporting or strategic communication with an emphasis in public health. Students complete a block of courses in public health, as well as in journalism, and complete the dual degree with a public health internship and capstone in which the focus is on journalism or strategic communication.

### **Distance Learning**

Professional journalists or others who cannot travel to mid-Missouri to attend the on-campus program may consider doing their program in an online format. Media management and strategic communication models are available through distance learning to applicants who have a minimum of three years professional journalism-related experience. Students in the online program are required to make two short visits, two to three days each, to campus during their program. You can find more information about the online master's programs at <http://journalism.missouri.edu/graduate/online/>.

### **Plan of Study**

Two-year students are required to complete a minimum of 37 hours, at least half of which must be in 8000-level courses. Five-year BJ-MA students complete a minimum of 30 hours (15 hours at the 8000-level). Specific course requirements vary depending on the option selected.

### **Professional Project or Thesis**

Students must enroll in either the Project Seminar or the Thesis Seminar in the semester prior to embarking on their professional project or thesis. These seminar courses guide students in developing proposals for their professional project or thesis. After proposal approval, students enroll in 8190, Area Problem (for projects) or 8090, Research (for Thesis). Students earn an additional nine credit hours for either the professional project or thesis research.

Students in any model may choose to complete the professional project or thesis off campus. The school operates programs in Washington, D.C., Brussels, and Buenos Aires which are supervised by full-time faculty members. In the Missouri state capital the school has a program focusing on public affairs reporting in any medium. Other off-campus opportunities can be arranged.

## Length of Study

The degree must be earned within eight years of beginning the program.

## Doctorate in Journalism

Ginny Cowell (cowellvj@missouri.edu)  
 179 Gannett Hall; Columbia, MO 65211  
 573-882-4852

<http://www.journalism.missouri.edu/graduate/doctoral/>

## Doctoral Admission Criteria

Fall deadline: December 15  
 Spring deadline: September 1

- Minimum Academic IELTS scores:

Listening	
Reading	
Writing	
Speaking	7.0
<b>OVERALL Score</b>	7.0

- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
Speaking: 25	
100	600

- Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative
Prior to August 1, 2011	1100
On or After August 1, 2011	V: 156+; Q: 146+

- Minimum GPA: 3.0, undergraduate, 3.5, graduate

Applicants should have demonstrated interest, education or professional experience in journalism, advertising, public relations, mass communication or a related field. A degree (bachelor's or master's) in one of those fields or two years of full-time professional media experience is preferred. All required information must be received before the admission review can begin. Applicants may be required to participate in an interview with the doctoral faculty as part of the review process. Students who did not write a thesis in their master's program may be required to complete a project to demonstrate their ability to do independent research.

Deadlines for application are December 15 for fall entry and September 1 for spring. Deadlines are firm, and no applicant is considered for admission until all required information is received.

## Required Application Materials

### [To the Graduate School:](#)

All required Graduate School documents

### *To the Journalism Doctoral Program:*

Please upload the following application materials into the online [Graduate School application in Apply Yourself:](#)

- Statement of Doctoral Objectives
- Résumé
- A 500-word abstract of your master's thesis (or thesis proposal, if your thesis is not yet complete)
- 3 letters of recommendation (use the online Graduate School application system)

*Please submit 2 hard copy sets of official transcripts and official GRE scores to:*

Earl English Graduate Studies Center,  
Missouri School of Journalism  
University of Missouri,  
179 Gannett Hall,  
Columbia, MO 65211-1200

## Financial Aid from the Program

Doctoral students are provided assistantship and scholarship support for a maximum of six terms (three years). Contact the department for details on this financial assistance.

## About the Doctorate

The objective of the doctoral program is to develop an ability to conduct independent and advanced scholarly research and to integrate this skill with a depth of scholarship in journalism and mass communication. Although it is primarily a research degree, the PhD is designed to facilitate a variety of academic aims. Students must expand their intellectual horizons, gain a theoretical framework for examining and understanding communication and refine their own communication competencies.

## Plan of Study

Doctoral study in journalism and mass communication is an interdisciplinary enterprise. The doctoral program is designed by the student in collaboration with the adviser and doctoral committee. Course selections are based on the intellectual requirements of the dissertation and the teaching areas the student wishes to pursue. No courses that focus primarily on professional skills may be counted toward the doctoral program, whether taken at the master's or the doctoral level. Courses from journalism should compose no more than two-thirds of the total credit.

Students must develop two research tools, pass qualifying and comprehensive examinations, submit and defend a dissertation, and satisfactorily meet all other requirements of the Graduate School. Doctoral Proseminar I (JOURN 9000), Doctoral Proseminar II (JOURN 9006), Doctoral Seminar (JOURN 9010) and Doctoral Research Seminar (JOURN 9087) are required of all PhD students.

## **Qualifying Examination**

Students are admitted to the PhD program in journalism when they have passed the doctoral seminar (qualifying examination), which must be taken the semester in which the student completes 18 hours. Graduate School regulations about comprehensive examinations, dissertations, plans of study, residency and other matters are specified in the Degree Requirements section of the catalog.

## **Foreign Language & Research Tool Requirements**

Students are expected to have a background in a foreign language and to develop a research tool. The language requirement may be met by three semesters of college-level foreign language courses or an equivalency acceptable to the doctoral faculty. At the discretion of the student's doctoral committee and the associate dean for graduate studies, a second tool may be used to substitute for the language requirement.

There are four research tool options:

1. competency in a second foreign language. This may be satisfied by two years of college-level work recently passed with a grade of C or better or an acceptable ETS score. A foreign language is one that is non-native or not the primary language used in the student's school system;
2. computer proficiency as evidenced by completion of two computer courses or an equivalency acceptable to the doctoral faculty;
3. two courses in statistics;
4. two 7000 or 8000-level research methods courses outside the School of Journalism.

A grade of A or B must be made in any course used for options 2, 3 or 4.

## **Teaching**

Doctoral students who plan to teach will participate in a teaching program. Each student's teaching skills will be evaluated in Doctoral Seminar, at which point planning for the student's future teaching opportunities begins. Most students will serve as teaching assistants in such classes as JOURN 1100, 2100, and 3000 during their third semester in the program.

In the student's fourth semester, he/she may have an additional teaching experience, either as a teaching assistant, co-instructor or instructor of record in a course. Depending on the student's ability and desire, students might teach a course independently during later semesters.

## **Courses**

See Journalism (JOURN) in the myZou online system.

## Library Science MA

### Admission Contact Information

SISLT Student Coordinator's office  
 304 Townsend Hall  
 Columbia, MO 65211  
 Phone: 573-882-4546 or toll free 877-747-5868  
 Email: [sislt@missouri.edu](mailto:sislt@missouri.edu)

### Admission Criteria

*Please Note:* Application deadlines are strictly adhered to and no applicant is considered for admission until all required application materials are received.

Fall deadline: April 1  
 Spring deadline: October 1

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal	Quantitative	Analytical
Prior to August 1, 2011	550	550	4.0
On or After August 1, 2011	156	146	4.0

Minimum GPA: 3.0 in the last 60 hours of the undergraduate degree

### Required Application Materials

#### [To the Graduate School](#)

All required Graduate School documents, including the online graduate application and bachelor's transcripts.

*To the Library Science MA program* <http://lis.missouri.edu/apply>

- Statement of Purpose: Briefly describe (in 500 words or less) your immediate educational and career goals. Please respond to the following questions:
  1. *Why do you want to earn a master's degree in Library and Information Science?*
  2. *What areas of Library and Information Science interest you?*
  3. *Do you anticipate working in a particular type of library or information agency?*

Note: Statement can be uploaded into Graduate School's online application system.

- Curriculum vitae or resume
- 2 letters of reference
- GRE scores

### **Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program Web site or ask the program contact for details.

### **About the Library & Information Science MA Program**

The program is accredited by the American Library Association. The mission of the Library Science (LS) program is to contribute to the essential knowledge, skills, and values of librarianship, instill these in our students.

#### *Goals:*

1. Design and implement a curriculum that incorporates ALA's Core Competences into a thorough generalist program.
2. Develop pedagogical methods—individually and collaboratively—that use effective techniques to enhance student learning.
3. Expand the knowledge base of the field through innovative research and scholarship and share the results to the broadest professional and disciplinary communities.
4. Engage professionals and organizations in Missouri, the nation, and the world, sharing the knowledge and talents of the faculty to contribute to the development of the field.
5. Create a global awareness of the program's excellence through the integration of teaching, research, and service.

### **Library Science MA Plan of Study**

Our program is the only Master's Degree in the state of Missouri to be fully accredited by the American Library Association. Upon successful completion of the 42-hour program of study, you will receive a Master of Arts in Information Science & Learning Technologies with an Emphasis in Library Science. The LIS curriculum reflects the foundations of the field as well as the critical issues facing the profession. Most LIS faculty are based in Columbia, with clinical faculty in St. Louis and Kansas City. Partnerships with Missouri State University and the University of Nebraska-Omaha allow us to provide classes in those locations as well. Students seeking certification as a school librarian/media specialist need to meet the certification requirements in place at the time of graduation.

### **Remaining in Good Standing**

The courses used in the program for the master's degree must be no older than 8 years at the time of graduation.

#### *Probation*

Any one of the following is cause for an LIS student being placed on academic probation for the remainder of the student's graduate program:

- a student's cumulative GPA falls below 3.0;
- a student receives one or more letter grades of C or F in a semester.

An LIS student who earns a letter grade of F in a core course must repeat the course and earn a letter grade of B or higher.

When an LIS student is placed on academic probation, the student and the student's advisor will be notified. It is the student's responsibility to contact and schedule a conference with the academic advisor to develop a plan to remedy the situation. The student and the advisor will jointly sign a document enumerating the specific steps to be accomplished during the subsequent semester.

### *Dismissal*

Any one of the following is cause for dismissal from the LIS Program:

- a student's GPA falls below the required 3.0 for a second semester in the student's graduate LIS program;
- a student earns a letter grade of C or F in one or more courses in a semester, then earns a letter grade of C or F in one or more courses in a subsequent semester.

The dismissal letter will inform the student of the right to appeal, first, to the LIS Program and, second, to the Graduate Faculty Senate. A copy of the dismissal letter will be sent to the Graduate Dean and the student's advisor at the same time it is sent to the student.

LIS students must also demonstrate continuous enrollment in courses related to the degree following admission to remain on active status.

- Admitted students who have not enrolled for two consecutive semesters (fall-spring/spring-fall) will be notified of the pending change from active to inactive status and given an opportunity to enroll in courses the semester following the notification (March 15 for fall semester; October 15 for spring semester).
- Students who do not enroll in the semester following notification will be moved to inactive status and removed from the list of current LIS graduate students.
- Students moved to inactive status must reapply to the program and meet the admission requirements published on the SISLT Web site at the time the inactive student reapplies.

### **Library Science MA Comprehensive Examination**

Every library science MA student must complete a written comprehensive examination. The examination structure will include 4 general areas of concentration:

- Issues in Library and Information Science
- Information Technology
- Management of Information Services
- Library and Information Services

## **Educational Technology MEd or EdSp**

### **Admission Contact Information**

SISLT Student Coordinator's Office

304 Townsend Hall

Columbia, MO 65211

Phone: 573-882-4546 or toll free 877-747-5868

Email: [sisl@missouri.edu](mailto:sisl@missouri.edu)

### **Admission Criteria**

Deadline for Fall entrance: May 1

Deadline for Spring entrance: October 1

Deadline for Summer entrance: March 1

- Undergraduate GPA of at least 3.0 in the last 60 credit hours of the degree

- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

- Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal	Quantitative	Analytical
Prior to August 1, 2011	500	500	3.5
On or After August 1, 2011	156	146	4.0

### Required Application Materials

#### To the Graduate School:

All required Graduate School documents, including the online graduate application and bachelor’s transcripts

#### *To the Educational Technology M Ed or EdSp Program*

<http://education.missouri.edu/SISLT/EdTech/index.php>

Statement of Purpose (can also be uploaded into Graduate School online application)

Curriculum Vitae or Resume

2 letters of reference

GRE scores

Any supporting materials

### Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

### About the Educational Technology MEd and EdSp Programs

The Educational Technology (EdTech) emphasis area at MU is your portal to excellence and leadership in designing, developing, and implementing technology in education, training and performance support.

Three focus areas are available for your degree. Students who focus on **Learning Systems Design & Development** learn to plan and create the learning and performance support resources used by individuals, groups, and organizations. Students who focus on **Technology in Schools** learn the strategies and processes for advancing the use of new technologies in schools, colleges, and other learning environments, (e.g., virtual schools; online courses). Students who focus on the **Online Educator** learn to design, implement, and evaluate effective online learning experiences in a variety of settings.

Working with an academic advisor, each student develops a customized program of study. You pick the professional goal that makes sense to you, and the EdTech faculty will help you transform your goal into your reality. For more details, please visit <http://EdTech.missouri.edu>.

### Educational Technology MEd or EdSp Plan of Study

The Educational Technology program is available at the master’s (MEd) and educational specialist (EdSp) levels. The MEd consists of 30 graduate credit hours. The EdSp is a 30 credit hour option is available for students who

already have a master's degree. The Educational Technology curriculum allows you to customize your course work by focusing on technology design and development or technology implementation.

**Educational Technology Careers**

Your degree in Educational Technology will open an array of career options. Some graduates work in K-12 schools, others work in corporations, and still others apply their skills in government, healthcare, higher education, and other settings. For example, some of our recent graduates are Software Designers and Developers, Learning Strategy Managers, Adaptive Technology Specialists, Training Designers, School Technology Coordinators, and Online Instructors. Whatever the setting, you will graduate with a skill set that will serve you well in the future.

**Doctorate in Information Science & Learning Technologies**

**Admission Contact Information**

SISLT Student Coordinator's Office  
 304 Townsend Hall  
 Columbia, MO 65211  
 Phone: 573-882-4546 or toll free 877-747-5868  
 Email: [sislt@missouri.edu](mailto:sislt@missouri.edu)

**Admission Criteria**

Deadline for Fall entrance: February 15  
 Deadline for Spring entrance: September 15

- Undergraduate GPA of at least 3.0 in the last 60 credit hours of the degree
- Graduate GPA of 3.5
- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

- Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal	Quantitative	Analytical
Prior to August 1, 2011	500	500	3.5
On or After August 1, 2011	153	144	3.5

In addition to meeting admission requirements, all students applying to the PhD program must complete faculty interviews and documentation of their research, development interests and capabilities. If you do not meet these standards, you should provide evidence of exceptionality in one or more other categories.

**Required Application Materials**

[To the Graduate School:](#)

All required Graduate School documents, including the online graduate application and bachelor's transcripts.

*To the Information Science & Learning Technologies Program*

<http://education.missouri.edu/SISLT/PhD/index.php>

Statement of Purpose (can also be uploaded into Graduate School online application)  
Curriculum vitae or resume  
3 letters of reference  
GRE scores  
Any supporting materials (i.e. published papers or technical reports)

### **Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program Web site or ask the program contact for details.

### **About the Program**

The PhD program prepares professionals to understand and influence learning, information and performance in diverse settings, especially through the use of interactive technologies. We seek individuals who are committed to conducting research that integrates theory and practice.

You will gain the competencies required to:

- Analyze specific informational organization and retrieval, learning and performance needs and evaluate systems to meet these needs.
- Design, develop and implement technologies and technological interventions to improve information organization and retrieval, learning and performance.
- Conduct systematic research, which contributes to the knowledge base of learning, information organization and retrieval, performance and/or technology.

### **Plan of Study**

Course work, internships and independent study projects support the achievement of these competencies, and your program centers on producing a portfolio of achievements indicating that the competencies have been attained. While course work supports production of the portfolio, we encourage students to develop products that cut across several courses, resulting in products that are personally satisfying, solve real problems and represent high quality work. We are particularly interested in products developed in collaboration with other students, practicing professionals and others beyond our program and campus.

### **Research**

The program culminates with a significant research effort that contributes to the knowledge base of learning, information organization and retrieval, performance and/or technology. Whether one major study or a series of smaller studies, the research is designed to position our graduates alongside the leading theorists, researchers and practitioners in the field. There is no minimum number of 9090 research hours.

### **Courses**

See Information Science & Learning Technologies (IS LT) in the myZou online system.

# Learning, Teaching and Curriculum Graduate Programs

Department of Learning, Teaching, & Curriculum  
303 Townsend  
573-882-6462  
573-884-2917 (fax)  
<http://education.missouri.edu/LTC/>

## About the Program

Graduate study in Learning, Teaching, & Curriculum prepares teachers, curriculum leaders and teacher educators for professional excellence. With the rapid changes in education--especially developments in instructional materials and techniques, curriculum construction and classroom organization--teachers who have completed their certification may need to update, refine and extend their knowledge and skills.

Further, many educators enter new roles as subject-matter specialists, curriculum coordinators, supervisors of instruction, department heads, leaders of professional development education or teacher educators. Graduate programs in Learning, Teaching, & Curriculum are designed to prepare the professionals for these new roles.

## Areas of Study

Majors can elect an area of concentration in curriculum development and research, or teacher education. Concentration areas in disciplines outside professional education, such as economics, management, science, mathematics, English and sociology, also may be chosen.

## Master's and Educational Specialist Degrees

M Ed (32 hrs) in Learning, Teaching, & Curriculum and Career and Technical Education with the following emphasis areas:

- Art Education
- Business & Marketing Education
- Early Childhood Education
- Elementary Education
- English Education
- Learning and Instruction
- Literacy/Reading Education
- Mathematics Education
- Music Education
- Science Education
- Social Studies Education

MA (30 hrs) in general Learning, Teaching, & Curriculum and Music Education.

EdS in Learning, Teaching, & Curriculum with the following emphasis areas:

- general Learning, Teaching & Curriculum
- Mathematics Education
- Music Education
- Literacy/Reading Education

- Science Education

## Doctoral Degrees

PhD in Learning, Teaching, & Curriculum. The following emphasis areas:

- Art Education
- Early Childhood Education
- Elementary Education
- English Education
- Literacy/Reading Education
- Mathematics Education
- Music Education
- Science Education
- Social Studies Education

EdD in Elementary Education, Literacy/Reading Education, and general Learning, Teaching, & Curriculum.

### **Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program Web site or ask the program contact for details.

## **Learning, Teaching, & Curriculum Faculty**

John Lannin

Chair, associate professor, PhD, Illinois State University. Mathematics education.

James Baumann

Chancellor's Chair for Excellence in Literacy Education and Professor, PhD, University of Wisconsin-Madison. Reading education.

Barbara Dougherty

Richard G. Miller Professor, PhD, University of Missouri, Curriculum & Instruction. Mathematics education.

Robert E. Reys

Curators' Professor, EdD, University of Missouri. Mathematics education.

Barbara Reys

Lois Knowles Distinguished Professor, PhD, University of Missouri. Mathematics education.

Lloyd H. Barrow

director of graduate studies, professor, PhD, University of Iowa. Science education.

Elizabeth Baker

professor, EdD, Vanderbilt University. Literacy education.

Roy Fox

professor, PhD, University of Missouri. English education.

Adrienne Hoard  
professor, PhD, University of Illinois. Art education.

Stuart Palonsky  
professor, PhD, Michigan State University. Social studies education.

Richard D. Robinson  
professor, EdD, University of Georgia. Literacy education.

Troy Sadler  
professor, Director, MU Science Education Center. PhD, University of South Florida. Science education.

Wendy Sims  
professor, PhD, Florida State University. Music education.

Douglas A. Grouws  
research professor emeritus, PhD, University of Wisconsin. Mathematics education.

Linda Bennett  
associate professor, Special Assistant to the Provost, EdD, University of Northern Colorado. Social studies education.

Kathryn Chval  
associate professor, PhD, University of Illinois-Chicago. Mathematics education.

Patricia Friedrichsen  
associate professor, PhD, Pennsylvania State University. Science education.

Deborah Hanuscin  
associate professor, PhD, Indiana University. Science education.

Carol Gilles  
associate professor, PhD, University of Missouri. Literacy education.

Nancy Knipping  
associate professor, PhD, Southern Illinois University. Early childhood education.

Marcelle Siegel  
associate professor, PhD, University of California at Berkeley. Science education.

James E. Tarr  
associate professor, PhD, Illinois State University. Mathematics education.

Kathy Unrath  
associate professor, PhD, University of Missouri. Art education.

Mark Volkmann  
associate professor emeritus, PhD, Purdue University. Science education.

Zandra de Araujo  
assistant professor, PhD, University of Georgia. Mathematics education.

Antonio (Tony) J. Castro  
assistant professor, PhD, University of Texas. Social studies education.

Michelle Klosterman  
assistant professor, PhD, University of Florida. Science education.

Candace Kuby  
assistant professor, PhD, Indiana University. Literacy education.

Amy Lannin  
assistant professor, Director of Campus Writing Program, PhD, University of Missouri. English education.

Marci Major  
assistant professor, PhD, Ohio State University. Music education.

Sam Otten  
assistant professor, PhD, Michigan State University. Mathematics education.

Rachel Pinnow  
assistant professor, PhD, University of Georgia. Teaching additional languages (TAL).

Lenny Sanchez  
assistant professor, PhD, Indiana University. Literacy education.

Brian Silvey  
assistant professor, PhD, University of Texas-Austin. Music education.

Nickki Ashcraft  
assistant professor of teaching, PhD, University of Georgia. Teaching additional languages (TAL).

Tony Barbis  
assistant professor of teaching, PhD, University of Missouri. Human resource education.

Jennifer Clifton  
assistant professor of teaching, PhD, Arizona State University. Curriculum and Instruction, English Education.

Laurie Kingsley  
assistant professor of teaching, PhD, University of Missouri. Literacy education

Jill Ostrow  
assistant professor of teaching, EdD, University of Maine. Literacy education.

Leigh Neier  
assistant professor of teaching, PhD, University of Missouri. Health education.

Belinda Smith  
assistant professor of teaching, PhD, University of Missouri. Art education.

Anna Waldron  
director, Office of Science Outreach, PhD, Cornell University. Science education.

## **M Ed and Educational Specialist Degrees in LTC**

### **Admission Contact Information**

Fran Colley  
[colleyf@missouri.edu](mailto:colleyf@missouri.edu)  
303 Townsend Hall  
Columbia, MO 65211  
573-882-6462

#### International Admissions Deadlines (Masters)

Fall deadline: March 1  
Spring deadline: October 1  
Summer deadline: February 1

#### Masters and Specialist Deadlines (non-international)

Fall deadline: May 1  
Spring deadline: October 1  
Summer deadline: March 1

PLEASE NOTE: Application packets will be prepared for committee by these deadline dates. Application Review Meetings are not the same day as the deadline date. Only completed applications will be reviewed by the Graduate Admissions Committee. Applications for admissions decisions take at least 6 weeks to process.

### **Admission Requirements:**

- Completion of an appropriate preliminary degree with a GPA of 3.0 or better (master's applicants: completion of bachelor's degree; Specialist applicants: completion of master's degree)
- Evidence of at least 2 years of successful experience in an appropriate field
- Minimum TOEFL scores for most areas:

Internet-based test (iBT)	Paper-based test (PBT)
79	550

- Minimum GRE score\* (varies by program area). Generally:

<i>When did you take the GRE?</i>	Verbal + Quantitative
Prior to August 1, 2011	810+
On or After August 1, 2011	291= (V150,Q141)

\*Note: Not all programs require the GRE exam. The following programs require the GRE for consideration into the program: Early Childhood Education, English Education (including TESOL focus), Mathematics Education, Science Education, and Social Studies Education.

**Required Application Materials to the Graduate School:**

- All required Graduate School documents
- Official transcripts
- GRE and TOEFL scores

**Required Application Materials to the Learning, Teaching, & Curriculum Program**

- Personal data sheet form (select appropriate form from the department website)
- Statement of purpose
- GRE scores (a copy may be sent to the department too; minimum, an official result needs to be sent to Graduate School)
- 3 letters of recommendation; check with department to see if they are required for your emphasis. ALL LETTERS MUST BE CONFIDENTIAL AND SUBMITTED ACCORDINGLY.

**Doctorate Degrees in LTC**

**Admission Contact Information**

Fran Colley [colleyf@missouri.edu](mailto:colleyf@missouri.edu)  
 303 Townsend Hall  
 Columbia, MO 65211  
 573-882-6462

**Admission Criteria**

Phd Admissions deadlines  
 Fall deadline: December 1  
 Spring deadline: October 1  
 Summer deadline: February 1

PLEASE NOTE: Application packets will be prepared for committee by these deadline dates. Application Review Meetings are not the same day as the deadline date. Only completed applications will be reviewed by the Graduate Admissions Committee.

Applications for admissions decisions take at least 6 weeks to process.

**Admission Requirements**

- Completion of an appropriate preliminary degree with a GPA of 3.0 or better (master's applicants: completion of bachelor's degree; Specialist applicants: completion of master's degree)
- Evidence of at least 2 years of successful experience in an appropriate field
- Minimum TOEFL scores for most areas:

Internet-based test (iBT)	Paper-based test (PBT)
79	550

- Minimum GRE score\*\*( varies by program area). Generally:

<i>When did you take the GRE?</i>	Verbal + Quantitative
Prior to August 1, 2011	1000+
On or After August 1, 2011	V153,Q144=297+

\*\*Note. Minimum GRE score varies by program area. All the doctoral programs in Learning, Teaching, & Curriculum require the GRE exam in order to be considered for the program.

**Required Application Materials to the Graduate School:**

- All required Graduate School documents
- Official transcripts
- Official GRE and TOEFL scores

**Required Application Materials to the Learning, Teaching, & Curriculum Program**

- Personal data sheet form (select appropriate form from the department website)
- Statement of purpose
- GRE scores (a copy may be sent to the department too; minimum, an official result needs to be sent to Graduate School)
- 3 letters of recommendation; check with department to see if they are required for your emphasis. ALL LETTERS MUST BE CONFIDENTIAL AND SUBMITTED ACCORDINGLY.

**Financial Aid from the Program**

Internal assistantships, fellowships or other funding packages require a departmental application, starting Fall 2010, and must be completed every semester in order to have funding renewed. Completion of the application does not guarantee renewal. Check the program Web site or ask the program contact for details.

**Courses**

See the following Learning, Teaching, & Curriculum graduate courses in the myZou online system.

LEARNING, TEACHING, & CURRICULUM (LTC)  
LEARNING, TEACHING & CURR – VOCATIONAL (LTC V)

## Mathematics Graduate Programs

College of Arts and Science  
202 Mathematical Sciences Building  
573-882-6221  
<http://www.math.missouri.edu/>

### About Mathematics

The Graduate Program in Mathematics is large enough to encompass research and courses in many areas, yet small enough to remain responsive to the needs of individual students. There are approximately 80 graduate students, 40 professors, and 15 postdoctoral and visiting researchers. The active areas of research include: algebraic geometry, analysis (real, complex, functional and harmonic), analytic functions, applied mathematics, financial mathematics and mathematics of insurance, commutative rings, scattering theory, differential equations (ordinary and partial), differential geometry, dynamical systems, general relativity, mathematical physics, number theory, probabilistic analysis and topology.

The Mathematical Sciences Building houses a library with more than 34,000 volumes and 430 journal titles. MU students have access to an extensive array of computing resources.

### Mathematics Degrees Offered

<http://www.math.missouri.edu/degrees/graduate/degrees.html>

- Mathematics Master of Arts (MA)
- Applied Mathematics Master of Science (MS)
- Mathematics Doctor of Philosophy (PhD)
- Mathematics Master of Science for Teachers (MST)
- Dual Master's degree in Applied Mathematics and Economics

A list of graduate alumni and their research topics is available: <http://www.math.missouri.edu/alumni/index.html>

**Financial Aid from the Program** <http://www.math.missouri.edu/degrees/graduate/financial.html>

All domestic applications for admission are automatically considered for financial support, in most cases by Teaching Assistantships. Virtually all current students are supported financially. Scholarships, assistantships, fellowships and other sources of aid are available. The Department Research Fellowship, the Blumenthal Scholarship and the McFarlan Fellowship are administered by the department, while the Huggins Scholarship, Gregory Fellowship and Ridgel Fellowship are administered by the university. International applications with TOEFL of 85 or higher (or equivalent) will also be automatically considered for departmental financial support.

**Mathematics Faculty** <http://www.math.missouri.edu/personnel/faculty.html>

Glen Himmelberg  
chair

Carmen Chicone  
associate chair, professor; PhD, University of Wisconsin. Dynamical systems.

Dan Edidin  
director of graduate studies, professor; PhD, Massachusetts Institute of Technology. Algebraic geometry.

Ian Aberbach  
director of undergraduate studies, professor; PhD, University of Michigan. Commutative algebra.

Mark Ashbaugh  
professor; PhD, Princeton University. Mathematical physics, differential equations.

Nakhle Asmar  
professor; PhD, University of Washington. Harmonic analysis.

William Banks  
professor; PhD, Stanford University. Cryptography, number theory.

Peter Casazza  
professor; PhD, University of Iowa. Functional analysis.

Tanya Christiansen  
professor; PhD, Massachusetts Institute of Technology. Scattering theory, partial differential equations.

S. Dale Cutkosky  
Curators' Distinguished Professor; PhD, Brandeis University. Algebraic geometry.

Stamatis Dostoglou  
professor; PhD, University of Warwick. Mathematical physics.

Fritz Gesztesy  
professor; PhD, University of Graz, Austria. Spectral theory and completely integrable systems.

Loukas Grafakos  
professor; PhD, University of California-Los Angeles. Fourier analysis and applications.

Adam Helfer  
professor; PhD, Oxford University. Geometry, mathematical physics.

Steve Hofmann  
Curators' Distinguished Professor; PhD, University of Minnesota. Harmonic analysis, partial differential equations.

Alexander Koldobsky  
professor; PhD, Leningrad State University. Functional and harmonic analysis.

Yuri Latushkin  
professor; PhD, Odessa University. Dynamical systems, operator semigroups.

Charles Li  
professor; PhD, Princeton University. Dynamical systems, partial differential equations.

Konstantin Makarov  
professor; PhD, Leningrad (St. Petersburg) State University. Mathematical physics, spectral theory, partial differential equations, operator theory.

Dorina Mitrea  
professor; PhD, University of Minnesota. Harmonic analysis, partial differential equations.

Marius Mitrea  
professor; PhD, University of South Carolina. Harmonic analysis, partial differential equations.

Stephen Montgomery-Smith  
professor; PhD, Cambridge University. Functional analysis.

Michael Pang  
professor; PhD, London University. Elliptic partial differential equations.

Dix Pettey  
professor; PhD, University of Utah. Point set topology, combinatorics.

Zhenbo Qin  
professor; Columbia University. Algebraic geometry.

Hema Srinivasan  
professor; PhD, Brandeis University. Commutative algebra.

Allanus Tsoi  
professor, PhD, University of Alberta-Edmonton. Financial mathematics, mathematical

Igor Verbitsky  
Curators' Distinguished Professor; PhD, Kazan University. Harmonic analysis, probability.

Shuguang Wang  
professor; PhD, Oxford University. Low-dimensional manifolds.

Qi Zhang  
professor; PhD, Duke University. Algebraic geometry.

Asma Harcharras  
associate professor; PhD, University of Paris-six. Functional analysis.

Carlo Morpurgo  
associate professor; PhD, Washington University. Harmonic analysis, spectral theory of partial differential operators.

Jan Segert  
associate professor; PhD, Princeton University. Differential geometry, mathematical physics.

Dana Weston  
associate professor; PhD, University of Illinois. Commutative algebra.

Calin Chindris  
assistant professor; PhD, University of Michigan. Representations of Quivers, Invariant theory.

Michael Munn  
assistant professor; PhD, CUNY Graduate Center. Riemannian geometry and geometric analysis.

Peter Pivovarov  
assistant professor; PhD, University of Alberta, Geometry of high-dimensional convex bodies, Probabilistic methods

Shuichiro Takeda  
assistant Professor; PhD, University of Pennsylvania. Number Theory.

## Application and Admission Information

### Admission Contact Information

Dan Edidin, director of graduate studies  
202 Mathematical Sciences Building  
Columbia, MO 65211  
573-882-6221  
mailto:muasmathdgs@missouri.edu

### Admission Criteria

<http://www.math.missouri.edu/degrees/graduate/application.html>

Fall deadline: January 15

Minimum TOEFL score: Same as the Graduate School minimum:

<http://gradschool.missouri.edu/admission/degree-seeking/international/>

While a bachelor's degree from an accredited institution is required, the undergraduate major need not be mathematics as long as applicants have had sufficient mathematics training to qualify for 8000-level courses during the first three semesters of graduate work.

### Required Application Materials

<http://www.math.missouri.edu/degrees/graduate/application.html>

- 3 or more letters of recommendation
- Transcripts
- Personal Statement
- GRE scores (required for PhD application, strongly recommended for Masters application)

### Mathematics' Degree Requirements

<http://www.math.missouri.edu/degrees/graduate/degrees.html>

### **Mathematics Master of Arts (MA)**

The degree requirements include the satisfactory completion of 30 hours of approved course work, of which at least 18 hours must be at the 8000 level. Math 8250, 8420, 8425, and 8410 are required, as is either 8190 or 8090. Students are expected to make up any required deficiencies in their undergraduate training in advanced calculus and abstract algebra. Students may list no more than two of the courses 7110, 7700, 7900, 7140, 7720 and 7920 on their graduate program. Furthermore, neither 7100 nor 7510 may be listed. The successful completion of a Master's Project (Math 8190) or Master's Thesis (Math 8090) must be certified by a Master's Committee consisting of three members of the Mathematics regular faculty.

### **Applied Mathematics Master of Science (MS)**

Designed to give students training in those areas of mathematics used frequently in applications. A candidate must satisfactorily complete 30 hours of approved course work, at least 15 hours of which must be in 8000-level courses. Math 8420, 8445, 8425 and 8440 are required, as is either 8190 or 8090. At least three hours of the 30 hours must be taken outside the department. Additional requirements (some of which may be satisfied by work done as an undergraduate) include the completion of one year of advanced calculus and at least one approved course in each of the areas of linear algebra, numerical analysis and mathematical statistics or probability. Students may list no more than two of the courses 7110, 7700, 7900, 7140, 7720 and 7920 on their graduate program. Furthermore, neither 7100 nor 7510 may be listed. The successful completion of a Master's Project (Math 8190) or Master's Thesis (Math 8090) must be certified by a Master's Committee consisting of three members of the Mathematics regular faculty.

### **Mathematics Doctor of Philosophy (PhD)**

This is a professional research degree designed to prepare students for various advanced professional careers, including college teaching and research. Before formally becoming a candidate, a student must have training equivalent to that required for a master's degree. Specifically, the student must demonstrate expertise (as determined by the department) in one of the following sequences of 8000 level classes, 8250, 8420, 8425, 8410 or 8420, 8445, 8425, 8440. In addition students must pass a qualifying examination shortly after beginning work at MU. The candidate must further complete a course of study approved by the doctoral program committee and pass a comprehensive examination. The active areas of research interest of the current members of the staff are: algebraic geometry, analysis (real, complex, functional and harmonic), analytic functions, applied mathematics, financial mathematics and mathematics of insurance, commutative rings, scattering theory, differential equations (ordinary and partial), differential geometry, dynamical systems, general relativity, mathematical physics, number theory, probabilistic analysis and topology.

Note: Effective at the start of Winter Semester 2007, there is NO foreign language proficiency requirement for the Mathematics PhD. However, a student's Doctoral Committee still retains the discretion to impose a foreign language proficiency requirement.

### **Mathematics Master of Science for Teachers (MST)**

This degree is designed primarily for those who want to teach mathematics at the secondary school level. A candidate for the degree must have a valid teaching certificate before entering the program and must satisfactorily complete 30 hours of approved course work. Math 8190 or Math 8090 is required. At least 15 hours must be in 8000-level courses, of which at least 9 hours must be courses from the Mathematics Department. At least two courses are required in the fields of algebra, analysis and geometry/topology. The successful completion of a Master's Project (Math 8190) or Master's Thesis (Math 8090) must be certified by a Master's Committee consisting of three members of the Mathematics regular faculty.

Note: The MU College of Education at the University of Missouri is a separate academic unit offering graduate degrees in Mathematics Education, with an emphasis on learning, teaching, and curriculum development.

### **Dual Master's Degree in Applied Mathematics and Economics**

The Departments of Mathematics and Economics offer selected students the option of obtaining a dual M.S. degree in applied mathematics and an M.A. degree in economics within an integrated program. Students enrolled in the dual master's degree program may obtain degrees based on 48 credit hours of course work. In each degree field a minimum of 18 hours of graduate courses is required.

The students are required to take from the Department of Mathematics two of the following core courses: Math 8440, Math 8445, Math 8480; and choose 4 more elective courses from the following list: 7140, 7300, 7310, 7320, 7500, 7700, 7900, 7320, 7520, 7140, 8425, 8440, 8445, 8480, 8680.

The students are required to take from the Department of Economics the following core courses: 8451, 8453, 8472; from the Department of Statistics: 7710; and 2 elective courses from the Department of selected from the following list: 7311, 7312, 7315, 7316, 7322, 7325, 7326, 7329, 7340, 7355, 7360, 7367, 7368, 7370, 7371, 8001, 8085/8090, any 9000-level class (excluding 9413, 9090 and 9480) for students who satisfy the prerequisites of these 9000-level classes.

In addition, students are required to take the following shared 8000-level graduate courses: Math 8090, Math 8420 Econ 8413, Econ 8473. and to complete an M.A. paper in economics (normally undertaken in Economics 8413) and a master's project in mathematics (Math 8090). Students are encouraged to undertake a single project that will satisfy both requirements. It is expected that the project will contain substantial work done in each field.

Up to 8 hours of transfer credit may be applied as follows: to one of the two degree programs, or divided between the two degree programs. The 8 hours of transfer credits cannot be applied to each degree program separately.

### **Courses**

See Mathematics (MATH) in the myZou online system.

# Mechanical & Aerospace Engineering Graduate Programs

Marilyn Nevels [nevelsma@missouri.edu](mailto:nevelsma@missouri.edu)  
573-884-8610

College of Engineering  
E2413 Lafferre Hall  
573-882-2085  
<http://engineering.missouri.edu/mae/>

## About Mechanical & Aerospace Engineering

Like markets merging together to create a global economy, this decade has approached the exciting frontier of joint research. The marriage of Mechanical Engineering to related fields has contributed to a new "Interdisciplinary Era". In meeting the challenges brought on by this co-operative approach to engineering, the Department of Mechanical & Aerospace Engineering (MAE) at the University of Missouri has broadened its scope in both education and research while maintaining strengths in the fundamental disciplines: Dynamics & Control, Design & Manufacturing, Materials & Solids and Thermal & Fluid Science Engineering. Such well-established academic traditions in the undergraduate and graduate curriculum as well as nationally renowned research programs are the basis for MAE having become the largest department in the College of Engineering at MU. An equally important aspect contributing to the quality of the MAE department is the aggressive pursuit of funding, by our faculty, to establish nationally recognized research programs. Well-earned support through sizable funding from both federal agencies and industry are valuable resources in the promotion of our graduate research and undergraduate teaching.

### Degrees

The department offers Master of Science and Doctor of Philosophy degrees in Mechanical & Aerospace Engineering.

### Career Opportunities

Graduate programs are planned to prepare students for advanced professional engineering careers. In recognition of the broad nature of the field of mechanical and aerospace engineering, considerable latitude in programs is encouraged so students may prepare for employment in industry, education and government. The usual purpose of a PhD program is to prepare a person for a career in research or teaching. The program is oriented toward research culminating in a dissertation suitable for publication.

### Areas of Study

A student may pursue an area of concentration selected from AI/expert systems, automation, bioengineering, combustion, control, creep and plasticity, design optimization, numerical methods, computational fluid dynamics, fracture mechanics, heat transfer, interactive computer graphics, laser diagnostics, manufacturing systems, materials science, mechanical syntheses, mechatronics, mechanics, parallel computation, residual stress, robotics, thermal systems design and management and ultrasonic nondestructive evaluation.

## **Licensure**

Information on degree requirements for engineering licensure is detailed under Professional Engineering Registration.

## **Facilities and Equipment**

The department has several specialized laboratories in aerosol mechanics, combustion, computer control, creep and fracture mechanics, fluid mechanics and heat transfer, manufacturing, materials science and structural dynamics.

Besides the modern instrumentation and equipment normally found in well-equipped mechanical and aerospace engineering laboratories, the department has, or has access to, such specialty items as MTS and Instron material and structural test equipment, wind tunnels, X-ray and a scanning electron microscope facility, computer control systems, a scanning laser vibrometer, a microscale heat transfer and electronic coding laboratory, an experimental stress laboratory, a fluid power laboratory and the university research reactor.

## **Information Technology and Computing**

A combination of the campus Division of Information Technology and the Engineering Technical Services (ETS) provided advanced engineering computation for College of Engineering faculty and students. CAD/CAM and graphics are the primary emphasis, although artificial intelligence, multiple high-level programming languages and computational and simulation libraries also are available.

The College of Engineering operates one high performance enterprise server, two super minicomputers and 17 HP workstations. The ETS also provides hardware/software support, locally, to nine College of Engineering departments and their affiliated research centers. These units are networked via Ethernet to the superminicomputers operated by the College of Engineering.

The Division of IT operates two remote terminal sites in the Engineering Buildings East. The University also supports an extensive computer system consisting of IBM mainframe computers, remote terminal sites, and PC and Macintosh labs throughout the campus.

## **Financial Aid from the Program**

Admission decisions to the graduate program are made without considerations of a student's financial need. Once admitted, a student may be considered for fellowships, research assistantships (RAs) and teaching assistantships (TAs). Awarding of fellowships is initiated by the department. RAs are awarded by individual faculty members. A student may apply by contacting faculty members directly. Application forms for TAs are available in the department office. International students are not eligible for TAs in their first semester of study. For specific departmental requirements, please refer to the MAE Graduate Handbook. Please see the department website for information on how to contact the professors individually about research assistantships offered.

## **Mechanical and Aerospace Engineering Faculty**

James E. Bryan

assistant professor; PhD, Texas A&M University. Two-phase heat transfer; microscale, MEMS, and macroscale applications with emphasis on electrohydrodynamic/electrostatic force enhancement/control and novel enhanced surface development. Microscale transport; fluid pumping, flow control, and convection enhancement applications

with emphasis on electrohydrodynamic/electrostatic force enhancement/control. Thermal systems; design, enhancement, and control (performance and manufacturing process).

Chung-Lung (C.L.) Chen

Thompson Chair Professor in the Mechanical & Aerospace Engineering Department and the Director of the Thermal, Fluid & Energy Laboratory.

JK Chen

William and Nancy Thompson Professor, PhD, Purdue University. Ultrashort laser-material interaction, Nano-to micro-scale to continuum modeling, Thermomechanical damage, Computational mechanics, Composite materials and structures, Impact and penetration mechanics, Fracture mechanics.

Uee Wan Cho

associate professor; PhD, Brown University. Solid and applied mechanics, materials science, structural and stress analysis, creep, plasticity, and continuum damage mechanics.

A. Sherif El-Gizawy

professor; PhD, University of Waterloo, Canada. Manufacturing design, process modeling, integrated computer-aided manufacturing, and expert systems applications in manufacturing.

Roger Fales

associate professor; PhD, Iowa State University. Controls, dynamics, off-highway machinery, and fluid power.

Frank Z. Feng

professor and director of graduate studies; PhD, University of Minnesota. Dynamics and Control. Nonlinear dynamics in energy transfer and instabilities, vibration control and acoustics for noise suppression, damping characteristics of shape memory alloys, acoustic levitation of bubbles and drops, geometric methods and chaos in dynamical systems, microelectrical/mechanical systems (MEMS).

Sanjeev K. Khanna

professor; PhD, University of Rhode Island. Design of welded structures and welding engineering; experimental stress analysis; optical mechanics; residual stress measurement; dynamic and quasi-static fracture of monolithic and composite materials; materials characterization; integration of mechanics, design, and manufacturing into the undergraduate curriculum.

Craig A. Kluever

professor; PhD, Iowa State University. Guidance and control of aerospace vehicles, orbital mechanics, spacecraft and mission design, and trajectory optimization.

Hao Li

associate professor; PhD, Stevens Institute of Technology. Mechanical, electrical, and biomedical properties of nanostructured materials, i.e. carbon nanotubes, SiC nanowires, and hydroxyapatite nanofibers; template based nanofabrication; thin films and coatings; surface engineering; chemical vapor deposition; self assembly; ceramic micro/nano composites; bone cements, biomimetic nanocomposites, and scaffolds for tissue engineering.

Yuyi Lin

associate professor; PhD, University of California-Berkeley. Dynamics and control of mechanisms, flexible structures and robots, CAD/CAM.

Stephen J. Lombardo

professor; PhD, University of California-Berkeley. Binder removal by thermal methods, supercritical extraction of binder, synthesis and processing of ceramics for capacitor applications, high voltage capacitors, sintering of ceramics and high temperature reactions, strain mismatch in ceramic processing, particle dynamics in ceramic forming operations, and ceramic membranes.

Hongbin Ma

associate professor; PhD, Texas A&M University. Microscale heat transfer and flow process, micro heat pipes, semiconductor refrigeration, high heat flux cooling, thin film deposition, rapid cooling for high-power microelectronic devices, experimental heat transfer.

Steven P. Neal

associate professor; PhD, Iowa State University. Ultrasonic characterization of engineering and biomaterials, and solid mechanics. Email address: NealS@missouri.edu

P. Frank Pai

C. W. LaPierre Professor; PhD, Virginia Tech. Computational structural mechanics, composite and smart structures, structural health monitoring, nonlinear finite elements, deployable structures, modern nonlineardynamics, and large deformation processing.

Douglas E. Smith

associate professor; PhD, University of Illinois at Urbana-Champaign. Development of finite element methods for simulation-based design, inverse analyses and computational biomechanics with a focus on design sensitivity analysis, multidisciplinary analysis and optimization, and reliability-based design. Applications include polymer and composites processing, heat treatment, structural optimization, bone remodeling and muscle simulation; and include theoretical development, computer implementation and industrial application.

Gary L. Solbrekken

assistant teaching professor and director of undergraduate studies, PhD, University of Minnesota. Thermal design at all scales, development of thermal/ fluid measurement systems, thermal management of electronic equipment, solid state energy conversion, and alternate energy generation strategies.

Robert Tzou

J. C. Dowell Professor; chair, PhD, Lehigh University. Microscale heat transfer, thermal lagging in ultrafast microelectronic/photonic devices, rapid thermal processing and modeling, anomalous diffusion in amorphous media, thermal control in rapid material processing, effective thermomechanical properties in composites, thermal and strain localization in high-speed penetration, thermomechanical interaction in fracture.

Richard T. Whelove

resident instructor; M Ed, University of Missouri. Engineering graphics.

Robert A. Winholtz

associate professor; PhD, Northwestern University. Residual stresses, neutron and x-ray measurement of residual and applied stresses, composite and two phase materials.

Qingsong Yu

associate professor; PhD, University of Missouri. Low-temperature plasma processing, plasma diagnosis, thin-film deposition, material surface modification and interface engineering, corrosion protection, polymer nanocomposites, plasma sterilization, bio- and biomedical materials, tissue engineering, electrochemical biosensors, and heat transfer nanofluids.

Yuwen Zhang

professor; PhD, University of Connecticut. Phase change heat transfer, transport phenomena in powder and/or gas based Solid Freeform Fabrication (SFF), heat and mass transfer analysis associated with heat pipe science and technology, microscale heat transfer.

Vitaly E. Gruzdev

research assistant professor; PhD, S.I. Vavilov State Optical Institute, Russia. Physics of condensed matter, physics of solids, laser interactions with solids, laser engineering and optics, laser methods of material processing, laser methods of remote measurements and control.

Nam-Jung Kim

research assistant professor; PhD, University of North Carolina. Synthesis of nanoporous films with lattice ordering through self-assembly, characterization of degraded lattice structures due to various thermal heating, silicon matrix-embedded nano clusters and quantum dots with high densities, diffusion measurement on multiconnected nano-pore channels, design and development of patterned nanosized reactors with different scales.

Sabiha Naz

assistant teaching professor; PhD, University of Missouri-Columbia. Areas of interest: Computer simulations for radioisotope generating system , photo-neutron generation in uranium-heavy water system and production of Molybdenum-99 using Monte Carlo simulations, nuclear particle transport and calculations related to critically and safe disposal of weapons grade plutonium using MCNP and TWODANT simulation codes.

## **Master of Science in Mechanical & Aerospace Engineering**

### **Admission Contact Information:**

Marilyn Nevels (nevelsma@missouri.edu)  
E2413 Mechanical & Aerospace Engineering  
Columbia, MO 65211  
573-884-8610

### **Admission Criteria:**

Fall deadline: May 31  
Spring deadline: October 31  
Summer deadline: April 30

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

Minimum GPA: 3.0 during last 2 years  
BS in same or a closely related field

Note: Lower GPAs require special action and substantiation, such as good test scores on the GRE or other recognized examinations.

**How to apply to the MAE master’s program:**

*Step 1: send required application materials [to the Graduate School](#):*

All required Graduate School documents

*Step 2: Send these additional application materials directly to the program:*

- Official Transcripts (all Universities and Colleges attended) One copy mailed to the Graduate School **or** MAE Department
- TOEFL/IELTS scores Sent to University by ETS
- 3 letters of recommendation uploaded **or** mailed to the MAE Department
- GRE scores Sent to us by ETS (Institution Code 6875 Department Code 1502)
- Statement of Objectives One page letter telling about yourself and the area you will study if accepted

*Send to:* Mechanical & Aerospace Engineering, Graduate Admissions ATTN: Marilyn Estes Marilyn Nevels  
E2413 Lafferre Hall, Columbia, MO 65211

Questions: 573-884-8610

**MS Plan of Study**

A plan of study is developed by the student and the adviser, subject to approval. The minimum degree requirement is 30 hours with a minimum of 18 hours at the 8000 level. Included within the 30 hours must be a special project report or thesis. A special project consists of three to five hours of MAE 8085 (Problems).

Alternatively, programs directed toward a thesis shall include three to eight hours of MAE 8990 (Research). A thesis or a report is approved by designated faculty committees and is deposited in the department libraries. Passing the MS final committee fulfills the degree requirements.

**Doctorate in Mechanical & Aerospace Engineering**

**Admission Contact Information:**

Marilyn Nevels ([nevelsma@missouri.edu](mailto:nevelsma@missouri.edu))  
E2413 Mechanical & Aerospace Engineering  
Columbia, MO 65211  
573-884-8610

**Admission Criteria:**

Fall deadline: May 31  
Spring deadline: October 31  
Summer deadline: April 30

Minimum GPA: 3.0  
Strong record in the MS program  
Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

Minimum Academic IELTS Overall score: 5.5

Note: Doctoral degree program applicants are closely and individually reviewed.

### **How to apply to the MAE doctoral program:**

*Step 1: send required application materials [to the Graduate School](#):*

All required Graduate School documents

*Step 2: Send these additional application materials directly to the program:*

- Official Transcripts (all Universities and Colleges attended) One copy mailed to Graduate School **or** MAE Department
- TOEFL/IELTS scores Sent to MAE Department by ETS
- 3 letters of recommendation (preferably from MS advisor and 2 other letters) Uploaded **or** mailed to the MAE Department
- GRE scores Sent to MAE by ETS (Institution Code 6875 Department Code 1502)
- Statement of Objectives One page letter telling about yourself and the area you will study if accepted

*Send to:*

Mechanical & Aerospace Engineering, Graduate Admissions ATTN: Marilyn Estes Marilyn Nevels  
E2413 Lafferre Hall, Columbia, MO 65211  
Questions: 573-884-8610

### **PhD Degree Requirements**

A minimum of 72 semester hours are required including the credit hours taken during the MS program. Students who received the MS degree from other than MU may transfer a maximum of 30 hours from their MS course work.

A doctoral student must satisfy a special requirement, either proficiency in foreign languages or a collateral field. The collateral field requires a minimum of nine hours of course work in one area other than MAE.

### **PhD Plan of Study**

The PhD candidate plans a plan of study and research under the immediate supervision of an adviser and in close cooperation with the doctoral program committee approved by the dean of the Graduate School upon the department's recommendation.

### **Qualifying Examination**

A qualifying examination is given soon after the student begins doctoral study. Successful completion of this examination is a prerequisite to formal acceptance into the PhD program.

Students with an MS from MU or another accredited U.S. engineering program will be exempt from the qualifying examination if their MS GPA and total GRE scores satisfy a departmental exemption rule.

### **Comprehensive Examination & Dissertation**

A comprehensive examination is given after all course work and language or collateral requirements have been satisfied. Upon completion of the plan of study and research a final examination, essentially a defense of the dissertation, is administered.

**Courses**

See Mechanical and Aerospace Engineering (MAE) [in the myZou online system](#).

## Medical Pharmacology & Physiology Graduate Programs

Monica Elliott  
School of Medicine  
MA415 Medical Sciences Building  
573-882-4957  
<http://medicine.missouri.edu/mpp/>

The joining of these two disciplines provides a powerful way to address modern questions of biology. The department offers MS and PhD degree programs in Pharmacology and Physiology. These programs are designed to prepare students for rewarding teaching and/or research careers in academia, government or the pharmaceutical and biotechnical industries.

### Pharmacology

Pharmacology is a basic medical science that deals with actions of drugs, hormones and neurotransmitters on living processes. Knowledge based on the results of pharmacological research leads to increased effectiveness and safety in the treatment of diseases in man and animals. Pharmacology is different from pharmacy, which is a profession concerned with the preparation and dispensing of drugs.

### Physiology

The discipline of Physiology focuses on understanding the integrative function of living organisms from the molecular to the organismal level. As such, physiological research addresses how genes, organelles, cells, tissues and organs are integrated to accomplish the complex functions of living organisms. From a medical prospective, understanding normal function is a prerequisite to understanding disease.

### Areas of Study

Regardless of their final degree objectives, students admitted into the departmental graduate programs will participate in a core curriculum during the first year and choose a specific tract leading to either a degree in Pharmacology or in Physiology following successful completion of the first year. The department also offers specially designed curriculum for individuals interested in a combined MD/graduate degree or who have previous relevant medical education.

### Departmental Research

The departmental faculty has expertise in a variety of mammalian systems, with emphases in cardiovascular and endocrine physiology and molecular and cellular pharmacology. Individual labs utilize a number of different experimental models ranging from the whole animal studies to cellular, subcellular, biochemical and modern molecular approaches. Human research is also emphasized.

Research problems under current investigation include microvascular control of blood flow; modulation of vascular function by the extracellular matrix; role of the microcirculation in inflammation and diabetes; mechanisms involved in angiogenesis membrane regulation and ion transport; barriers separating circulating blood and tissue; energetics and metabolism of vascular smooth and cardiac muscle; electrophysiology of isolated cardiac vascular smooth muscle and endothelial cells; exercise physiology and regulation of contractile protein functions; and hormonal induction of genetic transcription, intracellular signaling mechanisms and genetic regulation of cell

proliferation, cell cycle, cell differentiation and apoptosis; and the pathogenetic mechanisms of alcohol on liver cells.

### **Partnerships**

Cooperative interactions exist with other clinical and basic science departments in the School of Medicine as well as with the Truman Veterans Hospital, the Dalton Cardiovascular Research Center, the College of Veterinary Medicine, Nutrition and Exercise Department and various campus-wide programs in Molecular Biology and Food for the 21st Century. The cooperative research atmosphere encourages staff and students to work across departmental lines and provides a unique opportunity for interdisciplinary training of the students.

### **Teaching Experience**

In addition to course work and research training, all graduate students are required to participate as teaching assistants in laboratory or lecture instruction offered by the department. Such experience enhances the students' presentation and teaching skills, contributes to their professional maturity, and reinforces a sense of collegiality between students and faculty.

## **Medical Pharmacology and Physiology Faculty**

Ronald Korthuis  
chair and professor; PhD, Michigan State University.

Michael Davis  
vice-chair, professor; PhD, University of Nebraska.

Michael Rovetto  
director of graduate studies, professor; PhD, University of Virginia.

Edward Blaine  
professor; PhD, University of Missouri.

Keith Byington  
associate professor; PhD, University of South Dakota.

George Davis  
professor; MD, PhD, University of California-San Diego.

William Durante  
professor; PhD, University of Toronto.

Paul Fadel  
associate professor; PhD, University of North Texas Health Science Center.

Stephen Halenda  
associate professor; PhD, Medical College of Virginia.

Michael Hill  
professor; PhD, University of Melbourne.

Lene Holland  
professor; PhD, University of California-San Francisco.

Thomas Hurley  
professor; PhD, Duke University.

Virginia Huxley  
professor; PhD, University of Virginia.

Tzyh-Chang Hwang  
professor; MD, National Yang-Ming Medical College, Taiwan; PhD, Johns Hopkins University School of Medicine.

Marilyn James-Kracke  
associate professor; PhD, University of British Columbia.

Maike Krenz  
assistant professor; MD, PhD, Heinrich-Hein University.

Robert Lim  
associate professor; PhD, University of Washington-Seattle.

Luis Martinez-Lemus  
assistant professor; PhD, Texas A&M University.

Kerry McDonald  
professor; PhD, Marquette University, Milwaukee, Wisconsin.

Gerald Meininger  
professor; PhD, University of Missouri-Columbia.

Mark Milanick  
professor; PhD, University of Chicago.

Alan Parrish  
associate professor, Texas A&M University.

Luis Polo-Parada  
assistant professor; PhD, Case Western Reserve University.

Steven Segal  
professor; PhD, University of Michigan.

Shivendra Shukla  
professor; PhD, University of Liverpool.

Gregory Sowa  
assistant professor; PhD, Polish Academy of Sciences, Institute of Pharmacology.

Peter Wilden  
associate professor; PhD, University of Iowa.

## **Joint & Adjunct Faculty to Medical Pharmacology and Physiology**

Christopher Baines  
assistant professor; PhD, University of South Alabama.

Frank Booth  
professor; PhD, University of Iowa (Biomedical Sciences).

Doug Bowles  
associate professor; PhD, University of Texas-Austin (Biomedical Sciences).

Kevin Dellsperger  
professor; MD, PhD, Louisiana State University (Medicine).

Nancy Dietz  
professor; PhD, University of South Dakota (VA Pharmacy).

Vincent Demarco  
associate research professor; PhD, University of Florida (Child Health).

William Fay  
professor; MD, PhD, University of Illinois (Cardiology).

Kevin Gillis  
associate professor; PhD, Iowa State University (Biological Engineering).

Christopher Hardin  
professor; PhD, University of Cincinnati. (Nutritional Sciences)

Eileen Hasser  
professor; PhD, University of Oklahoma Health Science Center (Biomedical Sciences).

Meredith Hay  
vice president; PhD, University of Texas Health Sciences.

Jamal Ibdah  
professor; MD, PhD, University of Jordan (Gastroenterology).

M. Harold Laughlin  
professor; PhD, University of Iowa. (Biomedical Sciences)

John Lever  
associate professor; PhD, North Carolina State University (Radiology).

James Sowers  
professor; PhD, University of Missouri (Endocrinology).

Jeff Smith  
assistant professor; PhD, University of Missouri (Radiology).

Ronald Terjung  
professor; PhD, University of Iowa (Biomedical Sciences).

Mahesh Thakkar  
assistant professor; PhD, University of Missouri (Neurology).

## **Emeritus Faculty to Medical Pharmacology and Physiology**

Don Blount  
professor emeritus; PhD, West Virginia University.

E. Lee Forker  
professor emeritus; MD, University of Pittsburgh.

Leonard Forte  
professor; PhD, Vanderbilt University.

Ronald Freeman  
professor emeritus; PhD, Indiana University.

Allan Jones  
professor emeritus; PhD, University of Pennsylvania.

Hyun Dju Kim  
professor emeritus; PhD, Duke University.

Robert Russell  
professor emeritus; PhD, University of Missouri.

John Turner  
professor emeritus; PhD, University of Missouri.

Ronald Walkenbach  
professor emeritus; PhD, Missouri Lyons Institute.

Walter Wosilait  
professor emeritus; PhD, Johns Hopkins University.

Marvin Zatzman  
professor emeritus; PhD, The Ohio State University.

## Admission

### Admission Contact Information

Monica Elliott  
 MA415 Medical Sciences Bldg, DCO63.00  
 Columbia, MO 65211  
 573-882-4957

### Admission Criteria

Fall deadline: January 10  
 Spring deadline: October 10

- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

- Minimum IELTS overall academic score: 5.5
- Minimum GPA: 3.0 in the last 60 hours
- Bachelor's degree in chemistry, biology, pharmacy or related areas from an accredited college
- Background in biology and chemistry and an understanding of mathematics and physics
- Course work in biochemistry and physiology is highly recommended.
- Previous lab or research experience preferred

Students are usually admitted to begin their program in the Fall semester, but applications for admission in other semesters will be considered on a space-available basis. Women and minorities are encouraged to apply.

Students with an appropriate educational background are encouraged to apply for entrance into the PhD program. A master's degree is not a prerequisite for admission to the doctoral program. The department will consider applications for the MS degree programs from U.S. citizens but PhD degree students will be given priority consideration for financial support. Deficiencies in course work may be remedied during the first years of the graduate program.

### Required Application Materials

#### [To the Graduate School:](#)

All required Graduate School documents

#### [To the Medical Pharmacology & Physiology Program:](#)

Departmental application

Personal statement

Transcripts

3 letters of recommendation (use form provided). The letters should be written by individuals knowledgeable of the student's academic capability.

Official GRE & TOEFL scores

### **Financial Aid from the Program**

Financial support in this program for qualified graduate students is available from several sources. Students also may be eligible for institutional teaching and research assistantships. In addition, there are a number of fellowship awards from the Graduate School and the campus-wide Life Science Program available on a competitive basis through nominations by the Department.

Deadlines for these fellowships are January to mid-February each year. Applicants do not directly apply for these fellowships. Rather the department applies on behalf of successful applicants for admission. Therefore a prospective candidate should submit an application for admission to the department in the preceding fall. Finally, some of our students are supported by research grants of individual faculty members or by predoctoral fellowships from extramural sources.

## **Master of Science in Medical Pharmacology & Physiology**

### **Degree Requirements**

To satisfy requirements for the MS degree, a student must complete the professional plan of study with an average grade of B or better and pass an oral examination over an acceptable master's thesis. Candidates also must comply with other regulations governing master's degrees.

### **Length of Study**

MS degree students should normally complete their studies and thesis project within 2-3 years of admission to the degree program.

## **Doctorate in Medical Pharmacology & Physiology**

### **Plan of Study**

The PhD plan of study includes at least two years of basic and advanced courses in physiology and/or pharmacology, as well as courses in cell and molecular biology. The students also will be trained in conducting physiological and pharmacological research in the laboratory of individual faculty members during the first year.

### **Qualifying Examination Policy**

The department does not require a formal qualifying examination. Successful completion of the core curriculum and satisfactory performance in conducting scientific research and teaching will qualify students for continuation in the PhD program.

### **Choosing a Track and Mentor**

The student will choose a dissertation mentor at or before the end of the first year and decide whether they wish to pursue the doctoral program in Pharmacology or Physiology.

### **Comprehensive Examination**

All PhD program students must pass a comprehensive examination before the end of the first semester of the third year of enrollment. The usual format of the comprehensive exam includes the writing and oral defense of a research proposal outside of the student's dissertation research area.

### **Dissertation**

Each student must then carry out a dissertation research project, original in nature, which is expected to contribute significant new knowledge to the area of study. To facilitate this process, each student submits a dissertation research proposal within six months of passing the comprehensive examination.

### **Oral Defense**

Finally, all PhD candidates must pass an oral defense of the dissertation and comply with all university and departmental regulations governing the PhD degree.

### **Length of Study**

The doctoral program normally requires four to five years beyond the baccalaureate degree.

### **Courses**

See Medical Pharmacology and Physiology (MPP) in the myZou online system.

## Molecular Microbiology & Immunology Graduate Programs

School of Medicine  
M616 Medical Sciences Building  
573-882-8152  
<http://medicine.missouri.edu/mmi/>

The department is built around scholarly activities with three important missions: cutting-edge research programs to address relevant biomedical problems in microbiology and immunology, a graduate training program to educate strong, independent research scientists, and a commitment to provide knowledge-based service to the state, national and international communities that will improve global understanding of the microbial world, infectious diseases and host immunity to infection. Graduate (and postgraduate) education programs offer the basic principles of microbiology, pathogenesis, and immunology as well as research training opportunities in the laboratories of established scientists with diverse research interests.

### Degrees Offered

The Department of Molecular Microbiology & Immunology (MMI), in partnership with the faculty from the Department of Veterinary Pathobiology (VPB), offers a comprehensive graduate program leading to the Doctor of Philosophy (Ph.D.) degree. This program provides individualized training that is strongly oriented toward basic research in molecular and cellular biology, microbiology, pathogenesis, immunology and host-parasite interactions. MMI offers:

- PhD in Microbiology & Immunology (Medicine)
- Cooperative Degrees: MD and PhD in Microbiology & Immunology (Medicine)
- Interdisciplinary Area Program: PhD in Genetics Area Program

### Faculty Research

The program is equipped to support a wide range of research activities at the cutting edge of our diverse science. Faculty research activities focus on key problems in pathogenic microbiology, immunology, molecular biology, genetics and virology.

### Research Facilities and Resources

The research environment at MU with Colleges of Medicine, Veterinary Medicine, Agriculture, Engineering, and Arts and Sciences on one comprehensive campus fosters the development of interdisciplinary scientific interactions that enhance both research and training opportunities for faculty and students alike. The Bond Life Sciences Center represents such an interdisciplinary research enterprise and houses investigators from multiple colleges and departments, including MMI. Critical to the Department's interests in infectious diseases and immunity research, the recent construction of an NIH-funded Laboratory for Infectious Disease Research provides modern BSL3/ABSL3 containment research space and animal holding facilities for the investigation of highly infectious organisms and human select agents. This resource, and the Department's partnership with the Midwest Regional Center for Excellence in Biodefense and Emerging Infectious Disease Research, centered at Washington University in St. Louis, position MU in the national network of infectious disease research and training efforts. Please [visit the MMI Web site](#) for additional information on MMI's access to state of the art facilities.

## **Career Opportunities**

Graduates completing this training are prepared to pursue challenging and rewarding professional careers that involve research and teaching at supervisory levels in both the academic and private sectors.

## **Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program Web site or ask the program contact for details.

## **Molecular Microbiology and Immunology Faculty**

Mark M. McIntosh

chair, professor; PhD, University of Texas. Iron-mediated regulation of gene expression; bacterial membrane transport processes using energy-driven receptors; molecular biology of mycoplasmas.

Michael R. Baldwin

assistant professor; PhD, University of London, UK. Understanding the molecular basis of bacterial pathogenesis with an emphasis on characterizing the role of bacterial toxins in the disease process.

Karen L. Bennett

professor emeritus; PhD, Roswell Park Memorial Institute, State University of New York - Buffalo. Germline differentiation in *C. elegans*.

Donald Burke

associate professor; PhD, University of California Berkeley. Understanding the mechanism and evolution of catalysis by ribozymes and the molecular basis of retroviral inhibition by RNA-based drugs.

John F. Cannon

associate professor; PhD, University of Wisconsin-Madison. Genetics of *Saccharomyces cerevisiae*; Role of protein phosphatase in all cell cycle regulation; Molecular genetic analysis of RAS function.

Mark A. Daniels

assistant professor; PhD, University of Minnesota. T cell development and activation.

Dongsheng Duan

Margaret Proctor Mulligan Professor in Medical Research; PhD, University of Pennsylvania. Transduction biology of recombinant adeno-associated virus (rAAV) and development of rAAV for muscle gene therapy.

Richard A. Finkelstein

professor emeritus; PhD, University of Texas.

Jason L. Furrer

Teaching Assistant Professor; Ph.D., University of Missouri. Role of AIEC bacteria and iron in Crohn's disease.

Marc Johnson

associate professor; PhD, Oregon State University. Molecular characterization of HIV assembly and budding.

David R. Lee

director of graduate studies, associate professor; PhD, University of Virginia. Antigen presentation; activation and differentiation of human T lymphocytes.

Shan-Lu Liu

associate professor; PhD, University of Washington, Seattle, WA. Retroviral pathogenesis and entry; HCV entry pathways and pathogenesis; molecular biology of XMRV and relationships to human diseases; HIV lentiviral vectors in gene therapy.

Michael L. Misfeldt

professor and associate dean for faculty affairs; PhD, University of Iowa. Regulation, expression and function of Toll-like receptors.

David J. Pintel

Dr. R. Philip and Diane Acuff Professor in Medical Research; PhD, University of Illinois-Chicago. Analysis of eukaryotic gene expression using parvovirus model systems.

Stefanos Sarafianos

associate professor; PhD, Georgetown University. Molecular mechanisms of drug resistance and inhibition of HIV, SARS, and other viral and bacterial pathogens.

Emma Teixeira-Pernas

assistant professor; PhD, Universidad Complutense, Madrid, Spain. Regulation of T cell immune responses against infections and tumors.

Louise S. Thai

teaching professor; MD, Sechenov Medical School, former USSR.

Kim S. Wise

professor emeritus; PhD, University of Southern California. Pathogenic role of mycoplasmas.

Habib Zaghouani

professor, J. Lavenia Edwards Chair in Pediatrics; PhD, University of Paris, France. T cell tolerance and autoimmunity.

## **Veterinary Pathobiology Faculty**

George Stewart

chair, McKee Professor of Microbial Pathogenesis; PhD, University of Texas Health Sciences Center. Regulation of virulence gene expression; global regulation of enterotoxin gene expression in *Staphylococcus aureus*; expression of sporulation-specific proteins in *Bacillus*; characterization of the leukotoxin of *Fusobacterium necrophorum*.

Deborah Anderson

assistant professor; PhD, University of California, Los Angeles. Pathogenesis and host response during *Yersinia pestis* infections.

Brenda T. Beerntsen  
associate professor; PhD, University of Wisconsin. Mosquito-parasite interactions.

Charles R. Brown  
professor; PhD, University of Chicago. Host response to infectious disease.

Elizabeth Coco Bryda  
associate professor; PhD, Rutgers University, NJ. Creation and characterization of animal models in order to use to a comparative medicine approach to understanding the molecular genetics of human disease.

Michael J. Calcutt  
associate professor; PhD, Leicester University, UK. Molecular biology of mycoplasmas.

Craig L. Franklin  
associate professor; DVM, PhD, University of Missouri. Pathogenesis of chronic intestinal mucosal inflammation.

Christian L. Lorson  
professor; PhD, University of Missouri. Molecular basis of spinal muscular atrophy; RNA processing; gene therapy.

Bimal K. Ray  
professor; PhD, Calcutta University. Molecular mechanisms associated with inflammation-induced diseases that include atherosclerosis, amyloidosis, rheumatoid and osteoarthritis.

Roger W. Stich  
associate professor; PhD, Oklahoma State University. Biology of tick-pathogen-vertebrate interactions.

Guoquan Zhang  
assistant professor; DVM, Inner Mongolia Agricultural University; PhD, University of Gifu. The role of dendritic cells in presenting *C. burnetii* antigen and regulating T cell-mediated immunity against *C. burnetii* infection.

## **Faculty also jointly appointed to Molecular Microbiology and Immunology**

Ulus Atasoy  
associate professor; MD, University of Minnesota. Mechanisms of post-transcriptional regulation (Surgery)

Helen Braley-Mullen  
professor; PhD, Purdue University. Regulation of immune response, autoimmune disease, cellular immunology. (Internal Medicine)

Susan C. McKarns  
assistant professor; PhD, Michigan State University, East Lansing, MI. TGF- $\beta$  signaling in maintaining peripheral tolerance and regulating immune responses. (Surgery)

Bumsuk Hahm  
assistant professor; PhD, Pohang University of Science and Technology, Pohang, Korea. Interplay between viruses and host immunity. (Surgery)

Judy D. Wall

professor; PhD, Duke University. Genetics of uranium reduction by sulfate-reducing bacteria. (Biochemistry)

## Application and Admission Information

### MMI Admission Contact Information

Jana Clark

573-882-3938

[mmi@missouri.edu](mailto:mmi@missouri.edu)

### Admission Criteria

Fall deadline: January 15

- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
92	580

- Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative
Prior to August 1, 2011	1100
On or After August 1, 2011	300

- Minimum GPA: 3.0
- Bachelor's degree from an accredited college or university
- Courses in the following: biology; advanced courses in biochemistry and/or molecular biology are highly desirable; chemistry (quantitative or organic); physics; mathematics

The PhD degree is offered only to students who demonstrate a high level of specialized knowledge and clear evidence of research potential.

### Required Application Materials

#### [To the Graduate School:](#)

- All required Graduate School documents
- TOEFL score (if international applicant)

#### [To the MMI Program:](#)

- [Departmental application](#)
- 3 letters of recommendation from individuals competent to comment on the applicant's potential for graduate work
- GRE scores
- Personal statement
- Copy of TOEFL scores (if international applicant)

## **About the Doctorate**

The Departments of Microbiology and Immunology in the Medical School and Veterinary Pathobiology in the Veterinary School have combined to offer a graduate program designed to prepare students for an advanced professional career in microbiology and immunology. Emphasis is placed on developing outstanding students for productive supervisory roles in universities and colleges, industry, government and research institutes. Enrollment is limited to those students who show evidence of potential for research.

## **Research & Teaching Assistantships**

Students in the doctoral program are awarded research assistantships. Research assistants work with faculty members to obtain practical experience in carrying out research proposals through the collection of research data and writing research reports. All students in the graduate program are required to participate as teaching assistants for two semesters during their graduate studies.

## **Degree Requirements**

To be accepted for candidacy into the PhD program in microbiology & immunology, all applicants must perform satisfactorily in a core curriculum that includes advanced-level courses in the sub disciplines of immunology, molecular biology and microbial pathogenesis. Under the guidance of a doctoral program committee, a course of study is individually designed to fit each student's academic background, experience and objectives. Interdisciplinary courses in biochemistry, molecular and cellular biology and genetics provide breadth and balance in the program and enhance the student's research abilities. In addition, the PhD program consists of the following:

- Practical experience in teaching
- Successful completion of a comprehensive examination that tests the student's ability to develop an original scientific hypothesis and devise a feasible research plan that will test the hypothesis.
- A demonstration of research and writing ability by completing a scholarly dissertation on an approved research problem that results in the contribution of significant new knowledge. The final examination primarily covers this dissertation research.

## **Courses**

See Microbiology (MICROB) in the myZou online system.

## Music Graduate Programs

School of Music  
140 Fine Arts Center  
573-882-2604  
<http://music.missouri.edu/>

Founded in 1907, the School of Music is one of the larger academic units in the College of Arts and Science. Comprised of 40 fulltime faculty members and approximately 300 music majors, it is small enough to permit close, personal interaction between students and faculty, but large enough to provide many wonderful opportunities for talented students to excel. Our primary mission is to prepare students to become professional musicians and music educators. The School of Music is widely known for its scholarship in the field, and it is an important cultural resource for the profession, the campus community, and the people of Missouri.

### Degrees Offered

*Offered by School of Music:*

- Master of Music (MM) specializing in performance, theory, composition, piano pedagogy, jazz performance and pedagogy, collaborative piano, or conducting.
- Master of Arts (MA) specializing in music history.
- Graduate Certificate in Jazz Studies

*Offered by College of Education:*

Degrees related to music education are offered by the Department of Learning, Teaching, and Curriculum in the College of Education **in conjunction with the School of Music**. These degrees include

- Master of Arts (MA)
- Master of Education (M Ed)
- Educational Specialist (EdSp)
- Doctor of Philosophy (PhD) in education, emphasis in music education.

### Performance

At MU a student of music has the opportunity to hear many concerts or to participate in a variety of performing organizations. Many recitals are given by students, faculty and visiting artists. Among the student ensembles that give several concerts during the year are the University Philharmonic, Symphonic Wind Ensemble and other concert bands, jazz ensembles, University Singers and other choral ensembles, Show-Me Opera, and chamber music groups. Faculty ensembles that present recitals regularly include the Esterhazy String Quartet, the Missouri Woodwind Quintet and the MU Faculty Brass Quintet.

### Resources and Facilities

The music section of the Fine Arts Building contains a recital hall, classrooms, studios and practice facilities. The music holdings in Ellis Library, both printed and recorded materials, constitute a

substantial research and reference collection. The School of Music maintains a digital piano and MIDI laboratory, analog and digital music studios, and access to a listening laboratory for history and theory courses.

## **Music Faculty**

**Robert Shay**

Director and professor; PhD, University of North Carolina at Chapel Hill.

**Wendy Sims**

director of music education and professor; PhD, Florida State University. Music education/elementary-general.

**Dan Willett**

associate director and associate professor; MM, Michigan State University. Oboe.

**Michael Budds**

professor; PhD, University of Iowa. Music history.

**Paul Crabb**

professor; PhD, Florida State University. Choirs/conducting.

**W. Thomas McKenney**

professor; PhD, Eastman School of Music, University of Rochester. Composition/theory.

**Leslie Perna**

professor; MM, Boston University. Viola.

**Melvin Platt**

professor; PhD, University of Michigan. Music education.

**Marcia Spence**

professor; DMA, University of North Texas. French horn.

**Eva Szekely**

professor; MS, The Juilliard School of Music. Violin.

**Jo Ella Todd**

professor; MM, New England Conservatory. Voice.

**Janice Wenger**

professor; DMA, University of Missouri-Kansas City. Piano/accompanying.

**Iskander Akhmadullin**

associate professor, DMA, University of North Texas. Trumpet.

**Edward Dolbashian**

associate professor, MMA, Yale University. Orchestra/conducting.

Darry Dolezal  
associate professor, MM, Peabody Institute. Cello.

Stephan Freund  
associate professor, DMA, Eastman School of Music. Composition/music theory.

Julia Gaines  
associate professor, DMA, University of Oklahoma. Percussion.

Paul Garritson  
associate professor, MM, Yale University. Clarinet.

Ann Harrell  
associate professor, MM, The University of Texas. Voice.

Angelo Manzo  
associate professor; DMA, The University of Texas. Tuba/euphonium.

Neil Minturn  
associate professor, PhD, Yale University. Theory.

Peter Miyamoto  
associate professor, DMA, Michigan State University. Piano.

Thomas O'Neal  
associate professor, DMA, University of Arizona.

Leo Saguiguit  
associate professor; MM, Northwester University. Saxophone.

Maya C. Gibson  
assistant professor, PhD, University of Wisconsin. Musicology.

Timothy Howe  
assistant professor; DMA, University of Nebraska-Lincoln. Trombone.

Susan Jensen  
assistant professor, MM, University of Southern California. Violin.

Judith Mabary  
assistant professor; PhD, Washington University. Music history.

Marci Major  
assistant professor; PhD, The Ohio State University. Music education.

Paula Savvidou  
assistant professor, DMA, University of Wisconsin. Piano Pedagogy.

Stephanie Shonekan  
assistant professor, PhD, Indiana University. Ethnomusicology.

Brian Silvey  
assistant professor and assistant director of bands; PhD, The University of Texas. Music education.

Arthur White  
assistant professor; DMA, University of North Carolina at Greensboro. Jazz studies.

Christine Seitz  
associate teaching professor; MM, University of Wisconsin. Voice/opera.

Jonathan Kuuskoski  
assistant teaching professor; MM, University of Wisconsin, MBA University of North Carolina at Greensboro. Music entrepreneurship.

D. Bradley Snow  
assistant teaching professor and director of athletic bands; DMA, University of Southern Mississippi.

Alice K. Dade  
visiting assistant professor; MM, The Julliard School. Flute.

Richard Pellegrin  
visiting assistant professor; PhD candidate, University of Washington. Theory.

Maya Stone  
visiting assistant professor; DMA, University of Texas. Bassoon.

Dan Urton  
adjunct associate professor, MM, New England Conservatory. Voice.

Natalia Bolshakova  
adjunct assistant professor, MM, University of North Texas. Piano.

Erica Manzo  
adjunct assistant professor; DMA, The University of Texas. Music theory/clarinet.

Paul Seitz  
adjunct assistant professor; DMA, University of Wisconsin. Music theory.

Christopher M. Baumgartner  
assistant teaching professor and assistant director of athletic bands; PhD, University of Missouri.

Sue Stubbs  
adjunct assistant professor; MM, University of Missouri. Double bass.

Anthony Glise  
adjunct faculty; MM, New England Conservatory. Classical guitar.

Tom Andes  
adjunct instructor; BM, Berklee College of Music. Jazz piano.

Alan Beeson  
adjunct instructor; BSEd, University of Missouri. Jazz trumpet.

Lloyd Warden  
adjunct instructor; PhD candidate, University. Jazz drumset.

## **Application and Admission Information for Music**

Detailed admission information may be found at <http://music.missouri.edu/graduate/admissions.html>

Prospective **MM and MA-Music History students** may contact the associate director to request information about the prerequisites and graduation requirements for specific academic areas, and assistantships or other financial aid.

Prospective students in **music e education (MA, M Ed, EdSp, EdD and PhD)** should contact the director of music education.

## **Required Examinations for MM/MA Students**

Detailed information may be found at <http://music.missouri.edu/graduate/requiredexams.html>

## **Courses**

See various Music sections in the myZou online system:

MUSIC\_NM - Music-Courses for Non-Majors  
MUS\_APMS - Music-Applied Music  
MUS\_ENS - Music-Ensemble Courses  
MUS\_GENL - Music-General  
MUS\_H\_LI - Music-Music History And Literature  
MUS\_I\_VR - Music-Instrumental And Vocal Repertory  
MUS\_I\_VT - Music-Instrumental And Vocal Techniques  
MUS\_THRY - Music-Music Theory

## Neuroscience Interdisciplinary Graduate Programs

Nila Emerich [emerichn@missouri.edu](mailto:emerichn@missouri.edu)

218 Tucker Hall

Columbia, MO 65211

573-882-1847

<http://www.neurosci.missouri.edu/program.html>

### About the Program

One of the most exciting and dynamic fields of modern science worldwide is Neuroscience, the study of how the nervous system is organized and how it functions. The field of Neuroscience encompasses many disciplines, including biology, biochemistry, computer sciences, electrical engineering (neural modeling of neural networks and biomedical instrumentation), neurology, neurosurgery, pharmacology, physics, physiology, psychology, psychiatry, and radiology. Neuroscientists have advanced our understanding of nervous system development, neural function, injuries of the nervous system, and disease processes. At MU, neuroscientists investigate the molecular and cellular organization of the nervous system, the structure and function of neural systems (including vision and hearing), behaviors generated by the nervous system, and neurological diseases and disorders.

Students interested in the program are encouraged to contact members of the faculty directly by phone or e-mail, or visit the Interdisciplinary Neuroscience Program website.

### Degrees

MS and PhD degrees are available.

### Career Opportunities

MU's Interdisciplinary Neuroscience Program offers talented graduate students a chance to train for a career in one of the most exciting fields of modern science. Most of our students pursue research and teaching careers in basic neuroscience departments at prestigious research universities. Others opt for challenging and rewarding positions in applied fields, such as drug research or neurodiagnostic technology. Whatever their ultimate goals, the graduate neuroscientists who are trained at MU gain a solid understanding of the nervous system and of the experimental methods by which this knowledge is acquired.

### Plan of Study

Typical undergraduate majors that constitute preparation for graduate work in neuroscience include, but are not limited to, biochemistry, engineering, biology, computer science, chemistry, physics, neurobiology, physics and psychology.

After completing comprehensive course work in molecular, cellular, systems and behavioral neuroscience, graduate students join a research laboratory and work with other lab personnel to master the relevant technical skills and theoretical concepts in their chosen field. Students in the Interdisciplinary Neuroscience Program have the opportunity to present their findings at lab meetings, seminars, journal club sessions, and both national and international professional scientific conferences.

## **Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

## **Neuroscience Interdisciplinary Program Faculty**

**Kristina Aldridge**

assistant professor of pathology and anatomy; PhD, Johns Hopkins University. Normal age- and sex-related differences in brain morphology within species, including humans and non-human primates.

**Bruce Bartholow**

associate professor of psychological sciences; PhD, University of Missouri. Neural correlates of cognitive processes that underlie social behaviors and impairment of these processes by alcohol consumption.

**David Beversdorf**

associate professor of radiology, neurology, and psychological sciences; MD, Indiana University. Autism, drug abuse, dementia, cognitive effects of stress, the cognitive neuroscience of problem solving ability, functional neuroimaging, and pharmacological modulation of cognition.

**Anand Chandrasekhar**

associate professor of biological sciences; PhD, University of Iowa. Molecular and cellular analysis of motor neuron specification and migration in the vertebrate embryo.

**Shawn Christ**

assistant professor of psychological sciences; PhD, Washington University. Development of cognitive abilities in children with neurodevelopmental disorders.

**Dee Cornelison**

assistant professor of biological sciences; PhD, California Institute of Technology. Signaling and activity of skeletal muscle satellite cells.

**Nelson Cowan**

professor of psychological sciences; PhD, University of Wisconsin-Madison. Attention, short-term memory, the relation between them, and their development.

**Shinghua Ding**

assistant professor of biological engineering; PhD, State University of New York at Buffalo. Glial cell function and neuron-glia interactions in CNS, Stem cell differentiation and transplantation, Ion channel function and modulation.

**Michael Garcia**

assistant professor of biological sciences; PhD, Mayo Graduate School. Effects of myelination on axonal cytoskeleton; role of axonal cytoskeleton in neurodegenerative diseases.

**David Geary**

professor of psychological sciences; PhD, University of California at Riverside. Mechanisms that contribute to

mathematical learning and the mechanisms that underlie learning disabilities in mathematics; hormonal changes that occur during men's competitive activities.

**Carl Gerhardt**

professor of biological sciences; PhD, University of Texas-Austin. Acoustic pattern recognition in animals: neural and evolutionary implications.

**Kevin Gillis**

professor of biological engineering; DSc, Washington University. Studies of exocytosis using patch-clamp, optical and electrochemical techniques.

**Zecong Gu**

assistant professor of pathology and anatomy; PhD, University of Texas Medical Branch. Metalloproteinase proteolysis in ischemic stroke.

**Steve Hackley**

associate professor of psychological sciences; PhD, University of Wisconsin-Madison. Event-related potentials, startle-blink, and neuroimaging studies of perceptual-motor processes in healthy adults and in those with Parkinson's disease, epilepsy, and cortical blindness.

**Mark Hannink**

professor of biochemistry; PhD, University of California-San Diego. The BTB-Kelch substrate adaptor family in development, oncogenesis and neurodegeneration.

**Cheryl Heesch**

professor of biomedical sciences; PhD, University of Texas-San Antonio. Neurohumoral control of the circulation; CNS effects of ovarian hormones.

**T.C. Hwang**

professor of medical pharmacology & physiology; PhD, Johns Hopkins University. Structure-function studies of CFTR chloride channel.

**Meena Iyer**

assistant professor in occupational therapy; PhD, Columbia University. Transcranial magnetic stimulation and transcranial direct current stimulation.

**Philip Jen**

professor of biological sciences; PhD, Washington University. Neuroethology; auditory physiology; sound localization; biosonar in bats.

**George Johnstone**

professor of health psychology; PhD, University of Georgia. Vocational outcomes of persons with traumatic brain injury; spirituality and disability; rural rehabilitation; international rehabilitation.

**Martin Katz**

professor of ophthalmology; PhD, University of California-Santa Cruz. Research in inherited and age-related neurodegenerative diseases.

John Kerns

associate professor of psychological sciences; PhD, University of Illinois at Urbana-Champaign. Cognitive and affective processes in schizophrenia and the development of psychotic symptoms.

Mark Kirk

professor of biological sciences; PhD, Rice University. Stem cell therapies for neurodegenerative diseases and tumors of the CNS.

David Kline

assistant professor of biomedical sciences; PhD, Case Western Reserve University. Serotonin (5-HT)<sub>1</sub> receptors modulate synaptic transmission and potassium current in the afferent limb of the baroreceptor reflex arc.

George Kracke

associate professor of anesthesiology; PhD, Medical College of Pennsylvania. Effects of anesthetics and analgesics on neuronal ion channels and receptors.

Cathleen Kuehl-Kovarik

assistant professor of biomedical sciences; PhD, Iowa State University. Neural control of reproduction; Intrinsic regulation of gonadotropin releasing hormone (GnRH) neurons; changes in GnRH neurons during the aging process.

James Lee

associate professor of biological engineering; PhD, University of Pennsylvania. Biochemical and biophysical engineering techniques including various fluorescence spectroscopy and microscopy, micropipette cell manipulation and atomic force spectroscopy to study biological systems related to human health and diseases.

Chris Lorson

associate professor of veterinary pathobiology, and molecular microbiology and immunology; PhD, University of Missouri. Spinal muscular atrophy.

Joel Maruniak

associate professor of biological sciences; PhD, University of Texas-Austin. Olfactory cell and molecular biology.

Andrew McClellan

professor of biological sciences; PhD, Case Western Reserve University. Neural regeneration following spinal cord injury; neuronal cell culture; organization and function of locomotor systems.

Dennis Miller

associate professor of psychological sciences; PhD, Texas A&M University. Behavioral and neuropharmacology of nicotine and cocaine.

Satish Nair

professor of electrical and computer engineering; PhD, The Ohio State University. Dynamic modeling and control issues in systems biology; identification and uncertainty modeling using robust, adaptive and intelligent techniques; computational neuroscience, and biomechatronics.

Dennis O'Brien

professor of veterinary medicine & surgery; PhD, DVM, University of Illinois at Urbana-Champaign. Hereditary and acquired neurodegenerative diseases of domestic animals.

Mick Pettris

associate professor of biochemistry; PhD, University of Melbourne. The regulation of metal nutrition and impacts on common human diseases.

Lixing Reneker

assistant professor of ophthalmology and Biochemistry; PhD, University of Iowa. Signal transduction pathways in lens development; factors controlling corneal endothelial cell formation and differentiation.

Jeff Rouder

professor of psychological sciences; PhD, University of California-Irvine. Human pattern recognition; nonlinear statistical models for testing theories of cognition and perception.

Todd Schachtman

professor of psychological sciences; PhD, SUNY-Binghamton. Examination of the role of metabotropic glutamate receptors on learning and the processes underlying classical conditioning phenomena.

Heide Schatten

associate professor of veterinary pathobiology; PhD, Karl Ruprecht University in Heidelberg. Cell biology of cancer and neurodegenerative diseases.

Johannes Schul

associate professor of biological sciences; PhD, Philipps-University Marburg (Germany). Neuroethology of acoustic communication in insects and frogs - comparative analysis of the neuronal basis of call recognition and phonotaxis.

David Schulz

assistant professor of biological sciences; PhD, University of Illinois at Urbana-Champaign. Plasticity and stability in the nervous system: homeostatic regulation of a small neural network.

Shivendra Shukla

professor of medical pharmacology & physiology, PhD, University of Liverpool. Ethanol effects on cell signaling.

Agnes Simonyi

research associate professor of biochemistry; PhD, University of Lorand Eotvos, Hungary. Biochemical mechanisms underlying learning and memory with particular focus on specific subtypes of metabotropic glutamate receptors.

Grace Sun

professor of biochemistry; PhD, Oregon State University. Signal transduction pathways; stroke; Alzheimer's disease and alcoholism.

Mahesh Thakkar

assistant professor of neurology and research health scientist, Harry S Truman Memorial Veterans Hospital; PhD, Lawaharlal Nehru University. Neurobiology of sleep.

Gary Weisman

professor of biochemistry; PhD, University of Nebraska-Lincoln. P2 nucleotide receptors in neurodegenerative diseases.

Matthew Will

assistant professor of psychological sciences; PhD, University of Colorado-Boulder. Behavioral, pharmacological, and molecular analysis of the interaction between stress and the reinforcement process within the context of animal models of addiction.

Troy Zars

associate professor of biological sciences; PhD, University of Notre Dame. Molecular mechanisms and neural systems supporting memory formation in *Drosophila*.

## Application and Admission Information

### Admission Criteria

Fall deadline: January 15

- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
100	600

- Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative	Analytical
Prior to August 1, 2011	1200	
On or After August 1, 2011	308	

- Bachelor's degree or its equivalent

Neuroscience comprises a united field that integrates across many disciplines, and students from a variety of academic backgrounds are encouraged to apply to the Interdisciplinary Neuroscience Program (INP). U.S. residents and international applicants are strongly encouraged to apply.

### Required Application Materials

[To the Graduate School:](#)

All required Graduate School documents

[To the INP Program:](#)

Departmental application  
 3 letters of recommendation  
 GRE scores  
 TOEFL (if applicable)

## Courses

See Interdisciplinary Neuroscience (NEUROSCI) [in the myZou online system.](#)

# Nuclear Engineering Graduate Programs

Nuclear Science and Engineering Institute  
E2433 Lafferre Hall  
573-882-8201 or 573-882-3550  
<http://nsei.missouri.edu/>

## About Nuclear Science

The University of Missouri offers MS and PhD degrees in Nuclear Engineering in three transcribed areas: Power Engineering, Health Physics, and a CAMPEP-accredited Medical Physics emphasis area. Educational programs are closely connected with the outstanding research of participating faculty members and in connection with world-class facilities, including the University of Missouri Research Reactor (MURR).

## Degrees and Certificates

Master of Science in Nuclear Engineering  
Doctorate in Nuclear Engineering

Graduate Certificate in Nuclear Engineering  
Graduate Certificate in Nuclear Safeguards Science and Technology

## Areas of Study

Area research topics include nuclear materials management, aerosol mechanics, reactor safety analysis, nuclear energy conversion, reactor physics, reactor design, nondestructive testing and measurement, radiative heat transfer, neutron spectrometry, neutron and gamma ray transport, neutron activation analysis, nuclear waste management, nuclear plasma research, health physics, magnetic resonance imaging, radiation therapy and alternative and renewable energy concepts.

Recent research has been developed in wide band-gap material production and utilization. This work includes the development of electronic circuits from diamond films and other wide band-gap electronic materials, and the use of diamonds to modify the mechanical, optical, electrical and chemical properties of materials.

## Resources and Facilities

Area research is conducted in several special facilities and laboratories. The Research Reactor Center, a 10-megawatt facility, has the highest power and the highest steady-state neutron flux of any U.S. university reactor. Surrounding the reactor is a 26,000-square foot laboratory facility for nuclear research.

Other facilities include the Particulate Systems Research Center, a plasma fusion laboratory, nuclear instrumentation laboratory, a radioactive experiment laboratory and the needed digital computers, printers, etc., in labs and student offices.

## **Nuclear Engineering Faculty**

### **Nuclear Science and Engineering Institute**

Tushar K. Ghosh

professor, nuclear engineering; PhD, Oklahoma State University.

Sudarshan K. Loyalka

Curators' Professor, nuclear engineering; professor, chemical engineering; PhD, Stanford University.

Mark A. Prelas

H. O. Croft Professor, nuclear engineering; PhD, University of Illinois.

Robert V. Thompson, Jr.

professor, nuclear engineering; PhD, University of Missouri.

### **Emeritus, Nuclear Science and Engineering Institute**

William H. Miller

professor, nuclear engineering; PhD, University of Missouri.

Dabir Viswanath

professor, chemical engineering; PhD, University of Rochester.

Wynn A. Volkert

Curators' Professor, Radiological Sciences; professor, biological sciences; PhD, University of Missouri

### **Affiliated Faculty**

Bryan Becker

professor, University of Missouri-Kansas City; affiliated professor, Nuclear Science and Engineering Institute; PhD, University of Tennessee, Knoxville.

Douglas Berning

Nuclear Nonproliferation Division, Los Alamos National Laboratory, affiliated professor, Nuclear Science and Engineering Institute; PhD, University of Missouri.

David Bodde

professor, University of Missouri-Kansas City; affiliated professor, Nuclear Science and Engineering Institute; PhD, Harvard University.

Robert Brugger

professor emeritus, Nuclear Engineering.

James Case

nuclear cardiology, cardiovascular consulting, associate professor, School of Medicine, University of Missouri-Kansas City; affiliated professor, Nuclear Science and Engineering Institute; PhD, University of Massachusetts-Amherst.

H.R. Chandrasekhar

professor, physics, University of Missouri; affiliated professor, Nuclear Science and Engineering Institute, PhD, Purdue University.

Meera Chandrasekhar

professor, physics, University of Missouri, affiliated professor, Nuclear Science and Engineering Institute; PhD, Brown University.

Jack Crawford

assistant director of Environmental Health and Safety, radiation safety officer, University of Missouri; affiliated instructor, Nuclear Science and Engineering Institute; MS, University of Missouri.

Gordon D. Christensen

professor, medicine, infectious diseases, University of Missouri; affiliated professor, Nuclear Science and Engineering Institute; MD, Creighton University.

James Cullom

physicist, nuclear cardiology, cardiovascular consulting, Kansas City; affiliated professor, Nuclear Science and Engineering Institute; PhD, University of South Florida.

Randy D. Curry

professor, director of the Center for Physical and Power Electronics, Department of Electrical and Computer Engineering, University of Missouri; affiliated professor, Nuclear Science and Engineering Institute, PhD, University of St Andrews.

Cathy S. Cutler

senior research scientist, MURR; affiliated professor, Nuclear Science and Engineering Institute; PhD, University of Cincinnati.

Julie Dawson

chief medical physicist, associate professor, Radiation Oncology Department, St. Louis University; affiliated professor, Nuclear Science and Engineering Institute, PhD, University of Missouri.

David DeCroix

team leader for the D-5 computational fluid dynamics (CFD) and aerosol transport team, Los Alamos National Laboratory; affiliated professor, Nuclear Science and Engineering Institute; PhD, North Carolina State.

Michael J. Devaney

professor, electrical and computer engineering; professor, Nuclear Science and Engineering Institute; PhD, University of Missouri.

Ted Doerr

Meteorology and Air Quality (ENV-MAQ), Los Alamos National Laboratory; affiliated professor, Nuclear Science and Engineering Institute; PhD, Texas A & M.

Robert Duncan

vice chancellor for research, University of Missouri; affiliated professor, Nuclear Science and Engineering Institute; PhD, University of California-Santa Barbara.

Jeff W. Eerkens

associate research professor, Nuclear Science and Engineering Institute; PhD, University of California-Berkeley.

Gary J. Ehrhardt

senior research scientist, MURR; assistant research professor, radiology; affiliated professor, chemistry; affiliated professor; Nuclear Science and Engineering Institute; PhD, Washington University.

Steven Fernandez

senior research scientist, Oak Ridge National Laboratory; affiliated professor, Nuclear Science and Engineering Institute; PhD, University of Idaho.

John Gahl

senior research scientist, MURR; professor, electrical and computer engineering, University of Missouri; affiliated professor, Nuclear Science and Engineering Institute; PhD, Texas Tech University.

Keshab Gangopadhyay

affiliated professor, electrical and computer engineering, MU; affiliated professor, Nuclear Science and Engineering Institute; PhD, Indian Institute of Technology in Kanpur, India.

Michael F. Giblin

research assistant professor, radiology, University of Missouri; affiliated research assistant professor, Nuclear Science and Engineering Institute; PhD, University of Missouri.

Michael Glascock

research assistant professor, MURR; affiliated professor, Nuclear Science and Engineering Institute; PhD, Iowa State University.

Sreekrishna Goddu

assistant professor of radiation oncology, Washington University; affiliated assistant professor, Nuclear Science and Engineering Institute; PhD, Andhra University, Waltair, India.

Vellore S. Gopalaratnam

professor, civil and environmental engineering, University of Missouri; affiliated professor, Nuclear Science and Engineering Institute; PhD, Northwestern University.

Christopher Graham

affiliated instructor, Nuclear Science and Engineering Institute; MS, University of Missouri.

Timothy J. Hoffman

professor, medicine, hematology and oncology; affiliated professor, Nuclear Science and Engineering Institute; PhD, University of Missouri.

Bai-Ling Hsu

affiliated assistant professor, Nuclear Science and Engineering Institute; PhD, University of Missouri.

David Huang

chief medical physicist, Memorial Sloan Kettering Cancer Center, Mercy Medical Center; affiliated professor, Nuclear Science and Engineering Institute; PhD, Temple University.

Gary Hughes

affiliated professor, Nuclear Science and Engineering Institute; PhD, University of Missouri.

Enrique Izaguirre

instructor, Department of Radiation Oncology, Washington University in St. Louis; affiliated instructor, Nuclear Science and Engineering Institute; PhD, Drexel University.

David Jonassen

professor, School of Information Science and Learning technology, University of Missouri; affiliated professor, Nuclear Science and Engineering Institute; EdD, Temple University.

Silvia S. Jurisson

professor, chemistry; professor, radiology, University of Missouri; affiliated professor, Nuclear Science and Engineering Institute; PhD, University of Cincinnati.

Kattesh V. Katti

professor, senior research scientist, radiology; affiliated professor, chemistry, University of Missouri, affiliated professor, Nuclear Science and Engineering Institute; PhD, Indian Institute of Science.

William Kennedy

senior physicist, Ellis Fischel Cancer Center; affiliated professor, Nuclear Science and Engineering Institute; PhD, University of California-Berkeley.

Eric E. Klein

professor, Department of Radiation Oncology, Washington University School of Medicine; affiliated professor, Nuclear Science and Engineering Institute; PhD, Chicago Medical School/Rosalind Franklin University.

Arvind Kumar

professor, Missouri Science and Technology University, affiliated professor, Nuclear Science and Engineering Institute; PhD, University of California-Berkeley.

Jay Kunze

professor, Idaho State University; affiliated professor, Nuclear Science and Engineering Institute; PhD, Carnegie-Mellon University.

Kiratadas Kutikkad

affiliated associate professor, research scientist, MURR; PhD, University of Florida.

Jimmy C. Lattimer

associate professor, veterinary medicine and surgery, University of Missouri; affiliated associate professor, Nuclear Science and Engineering Institute; DVM, Washington State University.

John R. Lever

associate professor, radiology, University of Missouri; affiliated associate professor, Nuclear Science and Engineering Institute; PhD, North Carolina State University.

Michael R. Lewis

associate professor, veterinary medicine and surgery, University of Missouri; affiliated associate professor, Nuclear Science and Engineering Institute; PhD, City of Hope Graduate School of Biological Sciences.

Harold Li

assistant professor, Department of Radiation Oncology, Washington University in St. Louis; affiliated assistant professor, Nuclear Science and Engineering Institute; PhD, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany.

Andrei Lipson

affiliated professor, Russian Academy of Sciences; affiliated professor, Nuclear Science and Engineering Institute; PhD, Institute of Physical Chemistry, Moscow.

William Logan

physicist, Ellis Fischel Cancer Center, University of Missouri; affiliated professor, Nuclear Science and Engineering Institute; PhD, University of Missouri.

Daniel Low

professor, director of Medical Physics Division, Department of Radiation Oncology, Washington University in St. Louis; affiliated professor, Nuclear Science and Engineering Institute; PhD, Indiana University-Bloomington.

Wei Lu

Instructor, Department of Radiation Oncology, Washington University in St. Louis; affiliated instructor, Nuclear Science and Engineering Institute; PhD, University of Missouri.

Lixin Ma

assistant professor, radiology, University of Missouri Hospital and Clinics; affiliated assistant professor, Nuclear Science and Engineering Institute; PhD, University of Copenhagen, Denmark.

Rose Marra

associate professor, School of Information Science and Learning Technology, University of Missouri; affiliated assistant professor, Nuclear Science and Engineering Institute; PhD, University of Colorado.

Paul F. Miceli

professor, physics, University of Missouri; affiliated professor, Nuclear Science and Engineering Institute; PhD, University of Illinois at Urbana-Champaign.

Wouter T. Montfrooij

associate professor, physics, University of Missouri; affiliated associate professor, Nuclear Science and Engineering Institute; PhD, University of Delft.

David O'Brien

Los Alamos National Laboratory, affiliated professor, Nuclear Science and Engineering Institute; PhD, Rensselaer Polytechnic Institute.

John O'Hara

systems engineering and safety analysis, Brookhaven National Laboratory; affiliated professor, Nuclear Science and Engineering Institute; PhD, Adelphi University.

Thomas P. Quinn

professor, director of Structural Biology Core, biochemistry/molecular biology, University of Missouri; affiliated professor, Nuclear Science and Engineering Institute; PhD, St. Louis University.

Dharanipathy Rangaraj

instructor, Department of Radiation Oncology, Washington University in St. Louis; affiliated assistant professor, Nuclear Science and Engineering Institute; PhD, University of Missouri.

Charles Riggs

chief chemist, Callaway Nuclear Power Plant, AmerenUE; affiliated assistant professor, Nuclear Science and Engineering Institute; PhD, University of Missouri.

J. David Robertson

director of education and development, MURR; professor, chemistry, University of Missouri; affiliated professor, Nuclear Science and Engineering Institute; PhD, University of Maryland.

Amolak Singh

professor, program director & chief, Division of Nuclear Medicine, Department of Radiology, University of Missouri; affiliated professor, Nuclear Science and Engineering Institute; MD, Amritsar Medical College, Punjab, India.

Annie Sobel

assistant to the provost for strategic opportunities; affiliated professor in family and community medicine; affiliated professor in electrical and computer engineering; affiliated professor, Nuclear Science and Engineering Institute; MD, Case Western Reserve University of Medicine.

Gordon K. Springer

associate professor, computer science, University of Missouri; affiliated associate professor, Nuclear Science and Engineering Institute; PhD, Pennsylvania State University.

Haskell Taub

professor, Physics, University of Missouri; affiliated professor, Nuclear Science and Engineering Institute; PhD, Cornell University.

Herbert Tillema

professor, political science, University of Missouri; affiliated professor, Nuclear Science and Engineering Institute; PhD, Harvard University.

G. Loren Toole

task lead for infrastructure projects, TSM-D4, Los Alamos National Laboratory; affiliated instructor, Nuclear Science and Engineering Institute; MS, Georgia Institute of Technology.

Kathleen M. Trauth

associate professor, civil and environmental engineering, University of Missouri; affiliated associate professor, Nuclear Science and Engineering Institute; PhD, Texas Tech University.

Harry W. Tyrer

professor, electrical and computer engineering, University of Missouri; affiliated professor, Nuclear Science and Engineering Institute; PhD, Duke University.

Laurie Waters

D-10/D-5 Nuclear Design and Risk Analysis Group, Los Alamos National Laboratory; affiliated professor, Nuclear Science and Engineering Institute; PhD, State University of New York.

R. Andrew Winholtz

associate professor, mechanical and aerospace engineering, University of Missouri; affiliated associate professor, Nuclear Science and Engineering Institute; PhD, Northwestern University.

David L. Worcester

associate professor, biological sciences, University of Missouri; affiliated associate professor, Nuclear Science and Engineering Institute; PhD, Harvard University.

Deshan Yang

instructor, Department of Radiation Oncology, Washington University in St. Louis; affiliated instructor, Nuclear Science and Engineering Institute; PhD, University of Wisconsin, Madison.

William Yellon

affiliated professor, Nuclear Science and Engineering Institute; PhD, Carnegie-Mellon University.

Ping Yu

associate professor, physics, University of Missouri; affiliated associate professor, Nuclear Science and Engineering Institute; PhD, Hong Kong University of Science & Technology.

## **Master's Admission Information**

Contact: Terrence Grus, Director of Graduate Admissions and Records  
Graduate School, University of Missouri  
210 Jesse Hall, Columbia, MO 65211  
573-882-6311

### **Preparation for the Program**

Students with degrees in physics or chemistry are generally adequately prepared for the nuclear engineering graduate program. Those from other backgrounds may be required to complete engineering undergraduate courses in thermodynamics, advanced engineering mathematics and the full complement of calculus-based physics, based on the student's particular experience.

### **Plan of Study**

The nuclear engineering master's degree program requires 31 hours, including a research project or thesis. The requirements are based on the assumption that the student is entering graduate study with a bachelor's degree in engineering from an ABET-accredited school. An original research project is required either in the form of a three-credit master's project or a six-credit master's thesis. Typical time-to-degree completion for the master's degree is 18 months.

## **Doctoral Admission Information**

Contact: Terrence Grus, Director of Graduate Admissions and Records  
Graduate School, University of Missouri  
210 Jesse Hall, Columbia, MO 65211  
573-882-6311

## Doctorate in Nuclear Engineering

### Qualifying Examination

The PhD program is a research program and is tailored to meet specific educational needs. To qualify for the research phase of the PhD program, the student must pass a comprehensive, multipart qualifying examination, usually administered during the first semester of study for the PhD.

### Emphasis Areas

Nuclear engineering offers three different emphasis areas of study:

**Power Engineering\*:** Two options exist with an emphasis on power engineering:

1. Basic nuclear engineering program (for students emphasizing fission or fusion processes)
2. Nuclear power engineering program (for students with bachelor's degrees in electrical engineering).

\*Students in either of these programs must meet the basic criteria for entering graduate study in nuclear engineering.

**Health Physics:** An option in health physics is devoted to the study of the protection of people and the environment from radiation and environmental contaminants. Health physics is concerned with dosimetry, shielding design, radiation biology and instrumentation development and the development and implementation of the methods and procedures to evaluate and deal with environmental hazards (particularly with the measurement and effects of low levels of radiation, both natural and man-made, in the environment). The program includes a one- to two-credit practicum in a job training setting and a three-credit research project. Students pursuing a PhD in this option will select a suitable dissertation topic in nuclear engineering, with emphasis in health physics.

**Medical Physics:** The medical physics option emphasizes five areas of study: radiology, diagnostics, nuclear medicine, radiation therapy and health physics applications in medical practice. Medical physics applies physics and engineering concepts and methods to the diagnosis and treatment of human disease with emphasis on engineering design and utilization of the machines for this purpose. The curriculum includes a three-credit research project and a practicum as in the health physics option. Students pursuing a PhD in this option will select a suitable dissertation topic in nuclear engineering, with emphasis in medical physics.

Faculty will help identify opportunities for students to arrange practical training if they have interest in entering the clinical field.

### PhD Plan of Study

If the student is entering the PhD program, the planned course of study will be individually evaluated by the nuclear engineering faculty. A comprehensive examination covering the student's dissertation topic is required at least seven months before anticipated graduation.

The PhD degree is a research degree, with a suitable dissertation topic to be chosen in the

respective field and usually requires 24 classroom credits of advanced courses beyond the MS degree and 18 credits of research. Typical time-to-degree completion for the PhD degree is three years past the MS degree.

### **Graduate Certificate in Nuclear Engineering**

Note: The Federal Gainful Employment Disclosure page is in the back of this catalog.

#### **Eligibility & Mission**

The objective of the graduate certificate in Nuclear Engineering is to provide graduate students and professional, non-degree students from various engineering and science departments at MU with a unique opportunity to develop expertise in nuclear engineering that will enhance their job opportunities in the nuclear field.

#### **Requirements for Graduate Certificate in Nuclear Engineering**

Students will be required to take the 12 credit hours of coursework from the Nuclear Engineering (NE) degree program curriculum. Co-listed courses with the Nuclear Science and Engineering Institute NE classes may be considered towards this requirement. As permitted by the University Policy regarding Graduate Certificate offerings, a maximum of 6 credit hours may be counted for both degree course credit within their department and the Graduate Certificate in Nuclear Engineering. However, total credit hours needed to complete their degree need not exceed Departmental or Graduate School requirements. Students will be required to take courses that broaden their knowledge and understanding in nuclear engineering.

The student must complete a Change of Academic Program form to enter the program. The student must also complete the "Course of Study for Graduate Certificate" form, which must be approved by NSEI before taking any courses. Without this prior approval, the NSEI has the authority to deny the certificate.

A student's adviser and graduate committee from the host department and the Graduate Studies Director in the Nuclear Science and Engineering Institute will approve the courses. The selection of courses is restricted to the 7000 level or above and all courses must be successfully completed with a final grade of 'B' or above. Courses must be selected from the list shown in Table 1 at the certificate's website (<http://nsei.missouri.edu/graduateCertification.html>), and documented on the Graduate School's "Course of Study for Graduate Certificate" form. Course credit hours for the certificate could also be applied towards the total credit hours needed for the departmental degree requirements, if accepted by the student's department.

#### **Course Work**

Students should take at least one course from each of the first three clusters listed in Table 1. The student may choose their fourth course from either the Basic Radiation Science Cluster or from any of the four (I, II, III, IV) clusters at the certificate's site (<http://nsei.missouri.edu/graduateCertification.html>).

A minimum of 12 credit hours must be documented (using the Course of Study for Graduate Certificate form) in order to qualify for the Graduate Certificate in Nuclear Engineering.

### **Graduate Certificate in Nuclear Safeguards Science and Technology**

Note: The Federal Gainful Employment Disclosure page is in the back of this catalog.

*For additional information about this certificate, contact:*

Dr. Tushar Ghosh, professor of Nuclear Engineering, 573-882-9736, [GhoshT@missouri.edu](mailto:GhoshT@missouri.edu), or  
Dr. John Gahl, professor of Electrical Engineering, 573-884-7414, [GahlJ@missouri.edu](mailto:GahlJ@missouri.edu).

### **Certificate Objectives and Requirements**

The objective of offering the Graduate Certificate in Nuclear Safeguards is to provide graduate students and professional, non-degree-seeking, students in various engineering disciplines with an opportunity to develop unique skills and expertise that will enhance their performance in jobs requiring knowledge of nuclear material protection, control and accountability.

The graduate certificate program serves degree-seeking graduate students and also functions as a stand-alone graduate certificate program for professional, non-degree-seeking students. Both degree-seeking and non-degree-seeking students will be required to take four specific classes (12 credit hours) involving nuclear science, policy and safeguards. The student must complete a Change of Academic Program form to enter the program. The student must also complete the "Course of Study for Graduate Certificate" form, which must be approved by NSEI before taking any courses. Without this prior approval, the NSEI has the authority to deny the certificate.

For MU students, a maximum of 6 credit hours may be counted for both degree course credit within their department and the Graduate Certificate in Nuclear Safeguards. However, total credit hours needed to complete their degrees need not exceed departmental or Graduate School requirements (see the Graduate School [catalog](#) for additional information contact Dr. Gahl)

### **Nuclear Safeguards Science and Technology Certificate Plan of Study**

Four specific classes, comprising 12 hours of course credit, are required for a student to receive this graduate certificate in nuclear safeguards:

NU ENG 7335: Nuclear Safeguards Science and Technology (co-listed as ECE 7335). This course provides an overview of nuclear materials management and safeguards, including physical protection systems, material accounting and control, monitoring, and regulatory issues. Prerequisite: Nuclear Engineering [NU\_ENG] 4303/7303. Graduate Standing Required.

NU ENG 7331: Nonproliferation Issues for Weapons of Mass Destruction. Nonproliferation & impact on technology and world events. Prerequisite: junior or senior standing or instructor's consent

NU ENG 7303: Radiation Safety. (co-listed as ECE 4303). Types and origins of radiation; radiation detection and measurement; radiation interactions; shielding; dose calculations; federal, state and

local regulations; and procedures for safe uses of radiation. Laboratory experiments in radiation measurements and protection. Prerequisite: college physics, calculus based.

NU ENG 7391: Nuclear Radiation Detection. Principles and application of radiation detectors and analyzers: ionization, Geiger-Muller, proportional, liquid and solid scintillation, semiconductor, pulse height analyzers, coincidence circuits, data reduction, tracer applications, activation analysis. Lectures, laboratory. Prerequisites: graduate standing or instructor's consent.

## **Courses**

Find Nuclear Engineering (NU ENG) in the [myZou](#) online system.

# Nursing Graduate Programs

Sinclair School of Nursing  
S235 Sinclair School of Nursing Building  
573-882-0277  
<http://nursing.missouri.edu/>

## About the Sinclair School of Nursing

Nursing was an integral part of the Parker Memorial Hospital Training School, which served as the university's first hospital in 1901. Although a nursing program was not officially established until 1920 within the School of Medicine, MU graduated its first nursing class in 1904. Sixteen years later, the Curators approved a Graduate Nursing designation. Today, the Sinclair School of Nursing provides a rich and rewarding learning environment for our students. Our faculty includes knowledgeable and skillful teachers, respected scholars and researchers in the nursing profession, and experienced, caring practitioners. The master's program is accredited by the Commission on Collegiate Nursing Education, One Dupont Circle, NW, Suite 530, Washington, DC 20036, (202) 887-6791.

## Degrees Offered

- Master of Science
- Doctor of Philosophy
- Doctor of Nursing Practice

## Facilities and Resources

Graduate students in the School of Nursing have access to all campus libraries and the various services they provide. The School of Nursing building is adjacent to University Hospital and Clinics and MU Psychiatric Center Women and Children's Hospital and Ellis Fischel Cancer Center are located nearby. A variety of learning experiences also are available at other hospital and health and social service agencies in and around Columbia.

## Career Opportunities

Nursing is a professional career for those who would like to combine the following words in any number of ways: Servant leadership, challenge, advanced nursing skills, caring, science, and meaningful work. Graduates of our program work in a variety of settings - from hospital inpatient units and hospital based clinics, to community health centers, private practices, and schools, to areas of research and teaching.

## Funding

Financial assistance is available as scholarships, fellowships, assistantships and traineeships.

## Graduate Nursing Faculty

Judith Miller  
dean; PhD, University of Illinois at Chicago. Fellow of the American Academy of Nursing

Roxanne McDaniel  
associate dean, academic programs, associate professor; PhD, University of Texas-Austin. Adult nursing, oncology, chronic disease management, nursing education.

Vicki Conn

associate dean for research, director of research, professor; PhD, University of Missouri. Adult nursing, gerontological nursing, exercise, medication adherence. Fellow of the American Academy of Nursing

Deidre Wipke-Tevis

director of PhD program, associate professor; PhD, University of California-San Francisco. Adult nursing, wound healing, skin microcirculation, chronic disease prevention and management.

Debra Gayer

director of DNP program, associate teaching professor; PhD, University of Missouri. Family-child nursing, health outcomes of children with special needs and-web-based nursing education.

Jane Armer

professor; PhD, University of Rochester. Breast cancer, lymphedema, chronic disease management.

Lawrence Ganong

professor; PhD, University of Missouri. Human development and family studies, resilience processes in post-divorce families.

Marilyn Rantz

professor; PhD, University of Wisconsin-Milwaukee. Nursing administration, gerontological nursing, Quality of care in long-term care, technology to enhance aging in place. Fellow of the American Academy of Nursing

Myra Aud

associate professor; PhD, St. Louis University. Gerontological nursing, care quality in assisted living facilities, nursing homes, and dementia special care units.

Jane Bostick

associate teaching professor; PhD, University of Missouri. Community mental health nursing, nursing education, gerontology.

Maithe Enriquez

associate professor; PhD, University of Missouri-Kansas City. Infectious diseases, Syndemic health conditions (HIV and violence), Participatory action research, Development of interventions to prevent and manage chronic disease

Deborah Finfgeld-Connett

associate professor; PhD, University of Texas-Austin. Mental health, substance abuse, psychosocial issues relating to women's health, theory development, Qualitative systematic review methods.

Rebecca Johnson

professor; PhD, University of Iowa. Adult nursing, gerontological nursing, human-companion animal bonding and wellness. Fellow of the American Academy of Nursing

Louise Miller

teaching professor; PhD, University of Missouri. Community and public health.

Todd Rupp

assistant professor, PhD, University of Missouri. Gerontology, chronic illness self-management, health behavior change interventions; Adherence to medication regimens.

Cindy Russell

associate professor; PhD, St. Louis University. Adult and gerontological nursing, health behavior change, Adherence in kidney transplant recipients and dialysis patients. Fellow of the American Academy of Nursing.

Greg Alexander

associate professor; PhD, University of Missouri. Health informatics, human computer interaction, clinical decision support systems.

Cheryl Bausler

assistant teaching professor; PhD, University of Missouri. Adult health.

Tina Bloom

assistant professor; PhD, Oregon Health & Science University. Intimate partner violence and violence prevention interventions, Maternal-child health, Collaborative and community-based research

Urmeka Jefferson

Assistant professor; PhD, St. Louis University. Maternal-newborn nursing, infant feeding methods among black college students

Kari Lane

Assistant professor; PhD, University of Iowa. Hearing health care, Improved communication, Supporting ADA rights, Health policy changes for hearing impaired

Gina Oliver

assistant teaching professor; PhD, St. Louis University. Adult health, critical care nursing, family nurse practitioner. Nursing Education.

Lorraine Phillips

assistant professor; PhD, The University of Texas at Austin. Gerontology, long-term care, exercise, physical function and disability.

Lori Popejoy

assistant professor; PhD, University of Missouri. Adult nursing, gerontological nursing, care coordination, and discharge planning.

Patricia Schnitzer

associate professor; PhD, University of North Carolina at Chapel Hill. Public health, epidemiology, injury epidemiology and prevention, child abuse and neglect, methods for improving public health surveillance.

Sherri Ulbrich

adjunct assistant professor; PhD, University of Missouri. Physical activity, exercise, health behavior change, cardiac risk factor modification.

Amy Vogelsmeier

assistant professor; PhD, University of Missouri. Gerontological nursing, Healthcare systems, nursing leadership, patient/medication safety and safety practice implementation.

Bonnie Wakefield

associate research professor; PhD, University of Iowa College of Nursing. Gerontological nursing, implementation and evaluation of home, mobile and web-based communication technologies to improve care for chronically ill elders.

Sarah Breier

adjunct assistant professor; PhD, University of Tasmania (Australia). Adult nursing, clinical nutritional support, end-of-life care

Lila Pennington

assistant teaching professor; DNP, University of Tennessee. Family and gerontological nurse practitioner.

Kristen Metcalf-Wilson

assistant teaching professor; DNP, University of Missouri – Kansas City, Women's Health nurse practitioner

Robin Harris

Assistant teaching professor; DNP, Rush University, Leadership, pediatrics

Laura Kuensting

Assistant teaching professor; DNP; St. Louis University, Pediatric Nurse Practitioner

## Master of Science in Nursing

### Admission Contact Information

<http://nursing.missouri.edu/>

S235 School of Nursing

Columbia, MO 65211

573-882-0200

### Admission Criteria for the Master of Science in Nursing.

The distance mediated [master's of science](#) (MS(N)) program prepares graduates to fulfill and excel in advanced nursing practice roles requiring advanced skills in [nursing education](#) and/or [leadership](#) in delivery of health care to individuals, communities and populations.

Deadline for Fall or Summer entrance: February 1

### Requirements

To be considered for admission to the Sinclair School of Nursing's master's degree program, students must meet the following requirements:

- A degree from a nationally accredited baccalaureate nursing program.
- A minimum GPA of 3.3 for the last 60 credit hours of the baccalaureate program.
- Current [licensure](#) as a registered nurse.
- [Graduate Record Examination](#) (GRE) scores, which may be waived for any student with a GPA of 3.3 higher (4.0 grading scale), based on the last 60 hours of undergraduate coursework.
- Successful completion of a graduate-level statistics course (ECP 7170 or STAT 7020).

- Two [reference forms](#).
- Resume or curriculum vitae.
- A personal statement of your professional goals and how this program will help you achieve them.
- List of Possible Clinical Preceptors/Internship Mentors.

### International Student Admission for Nursing MS

- All international admissions are initially the responsibility of the MU Coordinator of International Student Programs. The Student Admissions and Progression Committee of the School of Nursing may not act upon any international application for admission until the applicant has been cleared through the office.
- Non-native English speaking applicants need documentation of English-language proficiency, demonstrated through a satisfactory Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) score within the last two years.
  - Minimum TOEFL scores\*:

Internet-based test (iBT)	Paper-based test (PBT)
80*	550**

\*No score lower than 15 in any section

\*\* No score lower than 50 in any section

- Minimum total academic IELTS score\* for graduate admission

Listening	
Reading	
Writing	
Speaking	
<b>OVERALL Score*</b>	<b>6.5</b>

\*Minimum bandwidth 6.0

- see also <http://admissions.missouri.edu/howtoapply/international/englishLanguageAbility.php>
- International students must submit a photocopy of a current RN license from their home country with their Masters application.
- International nurses must obtain a Missouri RN license prior to beginning coursework.

### Technology requirements

- Student will require a computer with a video card (responsibility of the student).
- Computer plus laptop is ideal for clinical courses and on-campus sessions.
- For home: 384K minimum download/upload speed; a business connection best for quality. If using satellite or wireless – connection delays may be a problem and you are expected to find a site near your home to make connection for classes.
- For work: firewalls need to be evaluated, conducive location when at work – not interfering with work.
- Quality – testing (initial, and 30 minutes before classes and as needed)
- Logitech camera (webcam)
- Headset with microphone or speakers and microphone.
- Windows XP or newer, with 1GB RAM, 80GB Hard Drive, 2.0Ghz or better processor (Core 2 Duo -Dual Core preferred).
- Microsoft Office – latest version ([to purchase](#))
- Zotero (free) or Endnote ([to purchase](#))

- E-mail capabilities
- Functional Anti-Virus Software (example: Norton-Symantec/McAfee) ([software](#))

### **Areas of Study for the MS program**

Students in the Master of Science program obtain advanced preparation in one of two areas:

- Nurse Educator
- Leadership in Nursing and Healthcare Systems

### **Master of Science in Nursing Progression Requirements**

The University of Missouri requires a minimum of 30 credit hours beyond the baccalaureate degree for a master's degree. The MU Sinclair School of Nursing requirements vary from 37 to 41 credit hours depending on the area of study. For satisfactory progress, students must maintain a GPA of 3.0 and be continually enrolled during fall and spring semesters until completion of the degree.

### **Thesis or Master's Exam**

Each candidate must pass a final examination to demonstrate mastery of the fundamental principles of the work included in the course of study offered for the degree. This requirement may be fulfilled by completion of a Master's Exam (MS exam) or thesis. The MS exam consists of a paper that should reflect the graduate student's grasp and synthesis of the clinical and theoretical knowledge gained in the course of study.

### **To satisfy requirements for the MS, a student must:**

- Complete an approved program with a cumulative GPA of 3.0
- Successfully defend a written thesis or complete the MS Exam
- Complete the program within a five-year period

## **Doctor of Philosophy (PhD) in Nursing**

### **Admission Contact Information**

<http://nursing.missouri.edu>  
S245 School of Nursing  
Columbia, MO 65211  
573-8824-4705  
Email: [nursing@missouri.edu](mailto:nursing@missouri.edu)

The MU Sinclair School of Nursing (MUSSON) offers a challenging and yet enriching PhD program with two options.

- **Option 1- Distance-Mediated PhD Program Option:** PhD coursework may be accessed online through the [Distance-Mediated PhD program](#) option by learning over the World Wide Web using the Blackboard learning platform. This option also requires a 5 Day On Campus visit (held on the Columbia campus) the first summer of enrollment and 3-4 Day On Campus Intensives every April until coursework is completed. Because the program is distance-mediated, students are responsible for obtaining the required technology for successful participation in synchronous distance-mediated courses;

- **Option 2- International Residential PhD Option:** Through the [International Residential PhD option](#), students attend the MU campus hybrid classes in Columbia, Missouri. The International Residential PhD student attends the hybrid classes in person, while the Distance-Mediated student cohort participates electronically. International Residential PhD students may also enroll in traditional residential course offerings through the MU Sinclair School of Nursing and the rest of the MU campus. Students in the International Residential PhD option must maintain full-time status by enrolling in 9 credits each fall and spring term. Of the 9 credits each term, at least 6 credits must be either traditional face-to-face or hybrid coursework in order to qualify for and retain the F-1 student visa status. The remaining 3 credits each term may be taken 100% on-line.

The PhD curriculum and program requirements are the same whether you choose the Distance-Mediated PhD option or the International Residential PhD option. Only the method of course delivery varies.

### Career Preparation

The PhD program in nursing prepares scholars to conduct original research, thereby advancing the body of knowledge that guides the practice of nursing and contributes to improving health and wellbeing. Successful completion of the program prepares nurses for college or university faculty positions as well as leadership roles in nursing, health care, industry, and governmental agencies.

November 1 is the early acceptance deadline. Students admitted from the early acceptance deadline are eligible to be considered for the [MU Graduate Fellowship Program](#). February 1 is the regular acceptance deadline.

### International Applicants to the Nursing PhD Program

All international admissions are initially the responsibility of the MU Coordinator of International Student Programs. The Student Admissions and Progression Committee of the School of Nursing may not act upon any international application for admission until the applicant has been cleared through the office.

- Non-native English speaking applicants need documentation of English-language proficiency, demonstrated through a satisfactory Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) score within the last two years.
  - Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
80*	550**

\*No score lower than 15 in any section;

\*\* No score lower than 50 in any section

- Minimum total academic IELTS score\* for graduate admission

Listening	
Reading	
Writing	
Speaking	
<b>OVERALL Score*</b>	<b>6.5</b>

\*Minimum bandwidth 6.0

- See also <http://admissions.missouri.edu/howtoapply/international/englishLanguageAbility.php>
- In addition to the TOEFL, the Test of Written English (TWE) maybe be required.
- Depending upon English-language proficiency, one or two semesters of English Language Support Program coursework may be required.
- International students must submit a photocopy of a current RN license from their home country with their PhD application.
- A Missouri RN is not required for Nursing PhD students.

### Admission Criteria for the PhD in Nursing

The minimum criteria for admission to the PhD in nursing include:

- Completed application for admission to the MU Graduate School at the University of Missouri.
- Completed application for admission to the PhD program at the MU Sinclair School of Nursing.
- Graduation from an accredited baccalaureate or master's program in nursing.
- Submission of all official transcripts documenting a baccalaureate or master's degree in Nursing from a program accredited by a national organization responsible for nursing accreditation (i.e. National League for Nursing Accrediting Commission (NLNAC) or Commission on Collegiate Nursing Education (CCNE))
- A grade point average (GPA) of 3.3 on a 4.0 scale based on the last **60 hours** of undergraduate nursing course work for applicants with less than a master's degree.
- A cumulative GPA of 3.5 on a 4.0 scale for applicants with a master's degree in nursing.
- Acceptable GRE scores within 5 years of application (Recommended minimum scores: If the GRE was taken prior to August 1, 2011: Verbal 500; Quantitative 500; Writing 4.0. If the GRE was taken on or after August 1, 2011: Verbal 153; Quantitative 144; Writing 4.0.);
- Successful completion of a graduate level statistics course within 5 years of application (e.g., STAT 7020, ECP 7170);
- Three (3) acceptable professional written recommendations (using form on School of Nursing website) supporting the applicant's potential success in the PhD program.
- Submission of curriculum vitae
- Acceptable original essay that includes research and professional goals and identification of an appropriate MU Sinclair School of Nursing research faculty mentor.
- Documentation of English-language proficiency (of non-native English speaking applicants), demonstrated through a satisfactory Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) score within the last two years.
- Successful interview.

Each qualified applicant will be invited to interview with members of the PhD Program committee and potential research mentors. Admission decisions are made by the PhD Program Committee with input from the applicant's potential research mentor(s). Applicants for whom an appropriate research mentor is not available will not be accepted for admission.

### Technology requirements

- Student will require a computer with a video card (responsibility of the student).
- Computer plus laptop is ideal for on-campus sessions.
- For home: 384K minimum download/upload speed; a business connection best for quality. If using satellite or wireless – connection delays may be a problem and you are expected to find a site near your home to make connection for classes.
- For work: firewalls need to be evaluated, conducive location when at work – not interfering with work.

- Quality – testing (initial, and 30 minutes before classes and as needed)
- Logitech camera (webcam)
- Headset with microphone or speakers and microphone.
- Windows XP or newer, with 1GB RAM, 80GB Hard Drive, 2.0Ghz or better processor (Core 2 Duo -Dual Core preferred).
- Microsoft Office – latest version ([to purchase](#))
- Zotero (free) or Endnote ([to purchase](#))
- E-mail capabilities
- Functional Anti-Virus Software (example: Norton-Symantec/McAfee) ([software](#))

### **Doctor of Philosophy in Nursing Curricula**

There are two curricular options: (a) post-baccalaureate (BSN-PhD) and (b) post-master's (MSN-PhD). For both options, the doctoral curriculum is divided into three categories:

- nursing content areas (nursing theory analysis and development, nursing applied sciences, substantive nursing seminars, and nursing education courses, as well as teaching practicum experiences)
- research and inquiry (philosophy of science, statistics and measurement, qualitative and quantitative methods courses in nursing and other disciplines, research practicum experiences as well as dissertation research)
- collateral area (coursework taken outside the discipline of nursing that helps to support the dissertation research topic).

### **Substantive Areas of Nursing Science**

The Substantive Areas of Nursing Science are based upon MUSSON PhD faculty research interests and expertise. Each PhD student selects one Substantive area of nursing science upon which to focus. Choices are: Innovation Science; Prevention and Treatment of Trauma Across the Lifespan; Managing Symptoms and Promoting Healthy Behaviors.

#### *Innovation Science*

Content and research interests of students selecting substantive area might include innovations in:

- Safety
- Quality Improvement
- Assistive Technology
- Healthcare Systems
- Human Factors
- Care Coordination

#### *Prevention and Treatment of Trauma Across the Lifespan*

Content and research interests of students selecting this substantive area might include:

- Social Determinants of Health
- Intimate Partner Violence
- Child Abuse and Neglect
- High Risk Populations
- Substance Abuse and Treatment

### *Managing Symptoms and Promoting Healthy Behaviors*

Content and research interests of students selecting this substantive area might include:

- Adherence to health promoting behaviors
- Optimizing physiologic, psychosocial & physical function
- Coping with acute or chronic illness
- Managing disability or disabling conditions
- Physical and emotional effects of cancer survivorship

### **Partnerships**

The PhD Program in nursing collaborates with the other UM system schools of nursing. Faculty may serve on dissertation committees for students across the campuses as appropriate. One benefit of this collaboration is that students in one program may take courses offered by the other programs through Mizzou Online or by using the UM System Visiting Graduate Student Program ([http://gradschool.missouri.edu/admission/UM\\_Visiting\\_Graduate\\_Student\\_Program.php](http://gradschool.missouri.edu/admission/UM_Visiting_Graduate_Student_Program.php)).

A number of Graduate Certificate programs (<http://online.missouri.edu/degreeprograms/degrees.aspx>) are offered in a distance mediated format by other MU Departments which will allow the students to complete their collateral area of interest. In addition to completing the collateral requirement, the students will obtain a Graduate Certificate documenting their expertise within a specific area.

### **PhD in Nursing Progression Requirements**

The PhD in nursing requires a minimum of 72 credit hours beyond the baccalaureate degree. Students entering with a master's degree in nursing can transfer in a maximum of 30 credits. A minimum of 42 credit hours must be completed at the University of Missouri. Ultimately, the doctoral program committee, in collaboration with the student, determines the student's plan of study and total credit hours necessary to adequately prepare the student to successfully complete their dissertation research. All graduate students must maintain a 3.0 GPA to complete the degree. Students receiving a grade of C or lower on any course should meet with their advisor.

Students with a BSN are admitted to the PhD program on a provisional basis. Following successful completion of a qualifying process, BSN students will be granted admission to the PhD program. To qualify, BSN to PhD students must maintain a 3.0 GPA and earn at least a B in N7100: Theoretical Basis for Advanced Nursing, N7150: Research Basis for Advanced Nursing, graduate level statistics and 3 (three-credit) courses in nursing applied sciences, and must have successfully completed three credits of N8900 Research Practicum with a member of their doctoral (advising) committee.

### **Residency Requirements for All PhD Students**

All students must fulfill the MU requirements for residency by taking nine credit hours in each of two consecutive semesters or six credit hours in each of three consecutive semesters during an 18-month period. Distance-mediated PhD courses offered through Mizzou Online count towards this residency requirement.

### **PhD in Nursing Candidacy**

PhD candidacy is attained when a student has successfully completed all courses on the approved plan of study that was developed in consultation with their doctoral program committee, and passed the written and oral components of the Comprehensive Examination. After attaining candidacy, the student will be eligible to complete and defend their dissertation research, which is conducted on a subject and using methods approved by their doctoral program committee.

## Doctor of Nursing Practice

### Admission Contact Information

<http://nursing.missouri.edu>

S246 School of Nursing

Columbia, MO 65211

573- 882-0200

E-mail: [Nursing@missouri.edu](mailto:Nursing@missouri.edu)

The MU Sinclair School of Nursing's Doctor in Nursing Practice (DNP) program is distance mediated beginning in the Summer Semester. Students are expected to spend one week on campus, typically the first week of June, the summer beginning their program and ending their program. All clinical courses will have required on campus days that range from one to four days during the semester.

### Career Preparation

The DNP program prepares nurses to develop clinical programs based on the latest evidence. The student will choose an area of study (Adult or Pediatric CNS, FNP, PNP, or FMHNP) on which to focus their clinical practice. Successful completion of the program prepares nurses for an advanced clinical practice in primary care, hospital and community settings as well as leadership roles in practice settings and clinical faculty positions.

### Admission Criteria for the Doctor of Nursing Practice

Application Dates: Early admission November 1; Regular admission March 1

- Completed application for admission to the MU Graduate School at the University of Missouri.
- Completed application for admission to the DNP program at the MU Sinclair School of Nursing.
- Submission of all official transcripts documenting a baccalaureate or master degree in Nursing from a program accredited by a national organization responsible for nursing accreditation (i.e. National League for Nursing Accrediting Commission (NLNAC) or Commission on Collegiate Nursing Education (CCNE))
- A grade point average (GPA) of 3.3 on a 4.0 scale based on the last **60 hours** of undergraduate nursing course work for applicants with less than a master's degree.
- A cumulative GPA of 3.5 on a 4.0 scale for applicants with a master's degree in nursing.
- Applicants who do not meet the minimum GPA requirements must submit acceptable scores on the Graduate Record Exam (GRE) and the exam must have been taken within the last five years.
- Successful completion of a graduate level statistic course (eg. STAT 7020, ECP 7170) within 5 years.
- Submission of copies of current, unencumbered Registered Nurse license(s).
- Submission of copies of all advanced practice nursing certification and/or credentialing/recognition documents for applicants with a master's degree.
- Verification of faculty supervised preceptor clinical hours in your Advanced practice program (<http://nursing.missouri.edu/apply/applications/clinical-verification-for-dnp.pdf> )
- Submission of three (3) professional recommendations supporting the applicant's potential success in the DNP program.
- Submission of curriculum vitae using the official MU Sinclair School of Nursing format ([curriculum vitae guidelines](#)).
- Submission of a three- to five-page essay describing your professional goals and how participation in the DNP program will enhance these goals.

- Documentation of English-language proficiency (of non-native English speaking applicants), demonstrated through a satisfactory Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) score within the last two years.
- Successful interview.
- For more information, visit the [University's Admission](#) web pages.

### Technology requirements

- Student will require a computer with a video card (responsibility of the student).
- Computer plus laptop is ideal for clinical courses and on-campus sessions.
- For home: 384K minimum download/upload speed; a business connection best for quality. If using satellite or wireless – connection delays may be a problem and you are expected to find a site near your home to make connection for classes.
- For work: firewalls need to be evaluated, conducive location when at work – not interfering with work.
- Quality – testing (initial, and 30 minutes before classes and as needed)
- Logitech camera (webcam)
- Headset with microphone or speakers and microphone.
- Windows XP or newer, with 1GB RAM, 80GB Hard Drive, 2.0Ghz or better processor (Core 2 Duo -Dual Core preferred).
- Microsoft Office – latest version ([to purchase](#))
- Zotero (free) or Endnote ([to purchase](#))
- E-mail capabilities
- Functional Anti-Virus Software (example: Norton-Symantec/McAfee) ([software](#))

### DNP Progression Requirements

The DNP in nursing requires a minimum of 74.5 credits beyond the baccalaureate degree. Of the 74.5 hours, 36.5 credits must be completed at the University of Missouri.

Ultimately, the student, in collaboration with their DNP residency committee, determines the student's plan of study and total credit hours necessary to adequately prepare the student to successfully complete their DNP residency project.

Upon admittance to the program, the following must be completed by the student and documentation of these items must be submitted before registering for coursework:

- Current required immunizations
- Satisfactory criminal background check
- Satisfactory drug screen
- Current CPR certification
- Proof of undisciplined nursing licensure

### For more information or to return application materials, contact:

Graduate Admissions  
S235 Sinclair School of Nursing  
University of Missouri  
Columbia, MO 65211  
Phone: (573) 882-0277  
E-mail: [Nursing@missouri.edu](mailto:Nursing@missouri.edu)

## Courses

See Nursing (NURSE) in the myZou online system.

## Nutrition and Exercise Physiology: Exercise Physiology Graduate Programs

Department of Nutrition and Exercise Physiology  
Tammy Conrad [conradt@missouri.edu](mailto:conradt@missouri.edu)  
106B McKee  
573-882-1144  
<http://ns.missouri.edu/exercise.html>

The goal of the Exercise Physiology program is to develop new knowledge through research in the areas of exercise training, exercise metabolism, bone metabolism, body composition, weight management, and fitness. The mission of the Exercise Physiology Graduate Program is to train graduate students to provide leadership in educational, medical, community, and research settings. The graduate program is housed in the Dept. of Nutrition and Exercise Physiology and administered by the College of Human Environmental Sciences, the College of Agriculture, Food and Natural Resources, and the School of Medicine.

### Degrees Offered

Master of Science in Exercise Physiology  
Doctor of Philosophy in Exercise Physiology

### Financial Aid from the Program

Assistantships are competitive and can be obtained in research, teaching, and community fitness programs. Numerous scholarships also are available to attract incoming graduate students, including the Life Sciences Fellowship program.

### Faculty

#### Affiliated Programs and Faculty

Exercise physiology research and graduate training take place in a number of departments and laboratories at MU. Faculty members in affiliated programs and departments are listed below:

#### ***Veterinary Biomedical Sciences***

Frank Booth, Doug Bowles, Lane Clarke, Eileen Hasser, M. Harold Laughlin, Ron Terjung, Steve Yang.  
Contact Doug Bowles for information on the graduate program.

#### ***Medical Pharmacology and Physiology***

Jamal Ibdah, Kerry McDonald. Contact Ronald Korthuis for information on the graduate program.

#### ***Physical Therapy Faculty***

Marybeth Brown, Erin Dannecker, Stephen Sayers. Contact Stephen Sayers for information about research programs.

## **Exercise Physiology Faculty**

Christopher D. Hardin

professor and chair nutrition and exercise physiology, professor of medical pharmacology and physiology; PhD, University of Cincinnati. Organization of cell metabolism, glycolysis, mitochondrial function, metabolomics.

Stephen D. Ball

state extension specialist and associate professor of nutritional & exercise physiology; PhD, Arizona State University. Exercise and body composition/weight management, physical activity for youth.

Pamela S. Hinton

associate professor of nutrition & exercise physiology; PhD, University of Wisconsin-Madison. Nutrition and physical activity, energy balance and bone health.

Jill A. Kanaley

professor nutrition & exercise physiology; PhD, University of Illinois. Director of Graduate Studies; Exercise, feeding, and the metabolic syndrome.

Heather J. Leidy

assistant professor of nutrition & exercise physiology; PhD, Pennsylvania State University. Effects of key dietary factors (dietary protein, meal-frequency, and breakfast) on appetite control, hormonal responses, and neural signals involved with energy balance and food motivation & reward to combat adolescent obesity.

R. Scott Rector

assistant professor nutrition and exercise physiology and internal medicine; PhD, University of Missouri. Role of exercise, lifestyle modifications, and pharmacological interventions on obesity, hepatic mitochondrial function, fatty liver disease, insulin resistance, and the metabolic syndrome.

Tom R. Thomas

professor of nutrition & exercise physiology, OMIT director of graduate studies; PhD, University of Missouri. Exercise physiology, nutrition/exercise and weight control.

John P. Thyfault

associate professor of nutrition & exercise physiology and internal medicine; health scientist, VA Medical Center; PhD, University of Kansas. Exercise metabolism; insulin sensitivity; fatty liver disease.

Adjunct Faculty

Frank W. Booth

professor biomedical sciences; PhD, University of Iowa. Inactivity and lifestyle diseases-animal models.

Paul J. Fadel

assistant professor medical pharmacology and physiology; PhD, University of North Texas Health Science Center. Autonomic control of the cardiovascular system during exercise

Dan A. Smith

adjunct instructor of nutrition & exercise physiology; MS, University of Missouri. Cardiac rehabilitation.

## Adjunct Faculty

Frank W. Booth

professor biomedical sciences; PhD, University of Iowa. Inactivity and lifestyle diseases-animal models.

Paul J. Fadel

assistant professor medical pharmacology and physiology; PhD, University of North Texas Health Science Center. Autonomic control of the cardiovascular system during exercise

Dan A. Smith

adjunct instructor of nutrition & exercise physiology; MS, University of Missouri. Cardiac rehabilitation.

## Master of Science in Exercise Physiology

### Admission Contact Information

Tammy Conrad [conradt@missouri.edu](mailto:conradt@missouri.edu)

106B McKee; Columbia, MO 65211

573-882-1144

### MS Admission Criteria

Deadline for Fall entrance: Dec 30

Prerequisites: general and organic chemistry, physiology (5 h), anatomy, nutrition, kinesiology, exercise physiology

Minimum 3.0 undergraduate GPA (4.0=A)

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
	500

Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative	Analytical
Prior to August 1, 2011	1000	3.5
On or After August 1, 2011	150	

### Required Application Materials

[To the Graduate School](#) (210 Jesse Hall; Columbia, MO 65211):

All required Graduate School documents, including on line application

*Required Supplementary Application Materials for the Program* (upload online with your application to the Graduate School)

- Statement of Purpose: Upload a Statement of Purpose, indicating your academic/research interests and career goals to the "Supplemental Information" section of your online application.

- Resume or Vita: Upload a current Resume or Vita to the "Supplemental Information" section of your online application.
- Recommendations: Enter the required information for at least three recommenders in the "Recommendation" section of your online application. The recommenders will receive an email with instructions for completing and submitting your recommendation. Please ensure that the recommenders are aware of the Dec 30 application deadline.
- GRE Scores: Please make arrangements with Educational Testing Services to have official Graduate Record Exam (GRE) scores sent directly to our department. MU's Institutional code is 6875 and our department code: 0214.

### Financial Aid from the Program

No additional materials are required to be considered for an assistantship.

### Plan of Study

The core program consists of 23 hours of course work including a research project (3 hours) and a formal research thesis (4 hours). See the courses section for more information.

#### Core Graduate Courses

8850 Advanced Exercise Physiology	3h
7840 CV Health and Fitness	3h
7340 Human Nutrition II (biochem. prereq.)	3h
8610 Quant. Methods I (Regression)	3h
8620 Quant. Methods II (ANOVA)	3h
7500 Research	3h
7085 Problems (N&EP seminar)	1h
8090 Research Thesis	<u>4h</u>

**Total Required in Core**                      **23**

#### Electives (Select to give 36 hours total)

7200 Sports Conditioning	3h
7001 Etiology of Obesity	3h
7330 Human Nutrition II Lab	2h
7800 Sports Psychology	3h
7970 Sports Nutrition	3h
8340 Nutrition in Human Health	3h
8310 Nutritional Biochemistry of Lipids	3h
8360 Nutritional Biochemistry of CHO	3h
8870 Exercise Metabolism/ 9431 Control of Energy Metabolism	3h
7333 Vet Cell Biology	4h

7270 Biochemistry	3h
7272 Biochemistry	3h
7274 Biochemistry Lab	2h
8420 Vet Physiology (Fall section)	6h
7310 Mammalian Cell Function	3h
8410 Neural Control	1h
9425 Microvascular Circ. Function	3h
9426 Transmembrane Signaling	3h
9430 CV Physiology	3h
9435 Skeletal Muscle	3h

**Reasonable Rate of Progress**

At the end of each year the adviser will evaluate each master’s student. Master’s students must maintain a 3.0 GPA. In addition, each graduate student must maintain adequate research progress as judged by the adviser and/or graduate committee. Inadequate progress will result in a probationary period of 30 days to 1 semester.

**PhD in Exercise Physiology**

**Admission Contact Information**

Tammy Conrad [conradt@missouri.edu](mailto:conradt@missouri.edu)  
 106B McKee  
 Columbia, MO 65211  
 573 882-1144

**PhD Admission Criteria**

Deadline for Fall entrance: Dec 30

Prerequisites: general and organic chemistry, physiology (5 h), anatomy, nutrition, kinesiology, exercise physiology

Minimum 3.5 graduate GPA (4.0=A)

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
	500

Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative	Analytical
Prior to August 1, 2011	1000	4.0
On or After August 1, 2011	150	

**Required Application Materials**

[To the Graduate School](#) (210 Jesse Hall; Columbia, MO 65211):  
 All required Graduate School documents, including on line application

*Required Supplementary Application Materials for the Program* (upload online with your application to the Graduate School)

- **Statement of Purpose:** Upload a Statement of Purpose, indicating your academic/research interests and career goals to the "Supplemental Information" section of your online application.
- **Resume or Vita:** Upload a current Resume or Vita to the "Supplemental Information" section of your online application.
- **Recommendations:** Enter the required information for at least three recommenders in the "Recommendation" section of your online application. The recommenders will receive an email with instructions for completing and submitting your recommendation. Please ensure that the recommenders are aware of the December 30 application deadline.
- **GRE Scores:** Please make arrangements with Educational Testing Services to have official Graduate Record Exam (GRE) scores sent directly to our department. MU's Institutional code is 6875 and our department code: 0214.

### **Financial Aid from the Program**

Assistantships are competitive and can be obtained in research, teaching, and community nutrition and fitness programs. Numerous scholarships also are available to attract incoming graduate students, including the Life Sciences Fellowship program. In addition, outstanding students can apply for F21C fellowships. Other sources (university fellowships and minority recruiting) award assistantships-students also are sponsored by individual faculty members.

### **Plan of Study**

The doctoral program requires a minimum of 80 hours beyond the BS degree. Hours taken on a master's program may be used in the doctoral program at the discretion of the doctoral committee.

Research requirements include 9 hours of 7500 Research (usually three research projects) and 12 hours of 9090 Dissertation.

NEP 8850 Advanced Exercise Physiology (A or B grade) serves as the qualifying exam.

The plan must include three graduate courses each in exercise physiology, physiology, biochemistry, and statistics.

Each PhD candidate is required to participate in classroom teaching for at least one semester.

Comprehensive Exam

The comprehensive exam process includes writing, defending, and submitting a major grant proposal.

Reasonable Rate of Progress

At the end of each year the adviser will evaluate each doctoral student. Doctoral students must maintain a 3.5 GPA. In addition, each graduate student must maintain adequate research progress as judged by the adviser and/or graduate committee. Inadequate progress will result in a probationary period of 30 days to 1 semester.

### **Courses**

See Nutritional Sciences (NUTR S) in the myZou online catalog.

## Nutrition and Exercise Physiology: Nutritional Sciences Graduate Programs

Tammy Conrad [conradt@missouri.edu](mailto:conradt@missouri.edu)  
106 B McKee  
573-882-1144  
<http://ns.missouri.edu/>

### About the Program

The Nutritional Sciences Graduate Program provides training in the distinct core nutrition knowledge described by the Graduate Nutrition Education Committee of the American Society for Nutrition: general research skills; structure and biochemical and metabolic functions of nutrients and other dietary constituents; food, diets, and supplements; nutritional status assessment; nutrition and disease; nutrition interventions and policies; and, analytical skills. Graduate students also receive training in laboratory research, seminar preparation and delivery, scientific writing, problem solving and research grant writing. Graduate study in Nutritional Sciences at the University of Missouri offers the advantage of interdisciplinary nutrition research that is facilitated via the many research centers at MU, including Food for the 21st Century (F21C), the Botanical Center, and the Life Sciences Center. The graduate program is administered by the Department of Nutrition and Exercise Physiology in association with the College of Human Environmental Sciences, the College of Agriculture, Food and Natural Resources, and the School of Medicine.

### Degrees Offered

- Master of Science in Nutritional Sciences
- PhD in Nutritional Sciences

### Areas of Research

Nutrition is, by definition, an applied and multi-disciplinary science that integrates other disciplines such as biochemistry, physiology, biology, psychology, sociology, and economics. A primary research focus in the department of Nutrition and Exercise Physiology is the role of diet in the prevention and treatment of chronic diseases that are prevalent in the United States today: obesity, the metabolic syndrome, diabetes, immune disorders, neurodegenerative diseases, and osteoporosis. Specific dietary components being studied for their role in human health include protein, calcium, vitamin D, copper, iron, omega-3 fatty acids, and nutraceuticals. Another important research area is the determinants of eating behavior, including neuro-psychological, sociologic, and economic factors. Investigative approaches include epidemiology, clinical trials, human studies, experimental and transgenic animal models, and cultured cell models.

### Research Facilities

State-of-the-art facilities foster collaborative research across disciplines including Nutritional Sciences, Exercise Physiology, Biochemistry, Internal Medicine, Food Sciences, Biomedical Sciences, Animal Sciences, Behavioral Sciences and Public Health. Research Centers at the University of Missouri include Dalton Cardiovascular Research Center, the Bond Life Sciences Center, the Interdisciplinary Center on Aging, the International Institute of Nano and Molecular Medicine, the Health Activity Center, the Botanical Center, the Brain Imaging Center, and the Bioinformatics Consortium. Core research facilities available to MU faculty are the Cell and Immunobiology,

DNA, Molecular Cytology, Electron Microscopy, Nuclear Magnetic Resonance, and Transgenic Animal cores. The Department of Nutrition and Exercise Physiology has a human exercise physiology lab, body composition assessment including BODPOD and DXA, as well as the MU Nutritional Center for Health that will house a metabolic kitchen and an observational food-choice behavior lab.

### **Financial Aid from the Program**

Assistantships are competitive and can be obtained in research, teaching, and community nutrition and fitness programs. Numerous scholarships also are available to attract incoming graduate students, including the Life Sciences Fellowship program.

## **Nutritional Sciences Faculty**

Stephen D. Ball

state fitness specialist and associate professor of nutrition & exercise physiology; PhD, Arizona State University. Body composition, obesity, youth physical activity

Jo Britt-Rankin

state nutrition specialist/administrative coordinator, family nutrition education programs, associate dean of HES; PhD, University of Missouri. Eating disorders, awareness and prevention, nutritional needs of the young athlete, supplement use among athletes, and food safety

Dale E. Brigham

state nutrition and fitness extension specialist; PhD, Pennsylvania State University. Community-based nutrition and physical activity interventions.

Sara E. Gable

state extension specialist and associate professor of nutrition and exercise physiology; PhD, Pennsylvania State University. Children's eating and activity experiences at home and child care and associated health outcomes.

Christopher D. Hardin

professor and chair of nutrition & exercise physiology, professor of medical pharmacology and physiology; PhD, University of Cincinnati. Organization of cell metabolism, glycolysis, mitochondrial function, metabolomics

Pamela S. Hinton

associate professor of nutrition & exercise physiology; PhD, University of Wisconsin-Madison. Bone metabolism, physical activity and women's health.

Jill A. Kanaley

professor of nutrition & exercise physiology; PhD, University of Illinois. Exercise endocrinology and metabolism, obesity, type 2 diabetes and feeding

Heather J. Leidy

assistant professor of nutrition & exercise physiology; PhD, Pennsylvania State University. Effects of key dietary factors (dietary protein, meal-frequency, and breakfast) on appetite control, hormonal responses, and neural signals involved with energy balance and food motivation & reward to combat adolescent obesity.

Catherine A. Peterson

associate professor of nutrition & exercise physiology; PhD, University of Illinois at Urbana-Champaign. Vitamin D and its implications for human health including and beyond bone.

Michael J. Petris

associate professor of biochemistry nutrition & exercise physiology; PhD, University of Melbourne, Australia. Regulation of metal transporters in mammalian cell models with a focus on copper.

Nikki Raedeke

teaching assistant professor of nutrition & exercise physiology, director-coordinated program in dietetics; PhD, University of Missouri. Food insecurity and nutritional status.

R. Scott Rector

assistant professor of nutrition & exercise physiology and internal medicine; PhD, University of Missouri. Role of exercise and lifestyle interventions on obesity, type 2 diabetes, fatty liver disease, and hepatic metabolism

John P. Thyfault

associate professor of nutrition & exercise physiology and internal medicine; PhD, University of Kansas. Role of physical activity and fitness in development of insulin resistance and fatty liver disease

Cuihua Zhang

associate professor of nutrition & exercise physiology and medical pharmacology and physiology; MD Jin Zhou Medical College; PhD, Chinese Academy of Medical Science and Peking Union Medical College. Endothelium and microvascular function.

## **Adjunct Faculty**

Laura S. Hillman

professor of child health; MD, Yale University. Calcium metabolism in premature infants, children with chronic diseases, and pregnant/lactating women

Kevin L. Fritsche

professor of animal sciences and molecular microbiology and immunology; PhD, University of Illinois at Urbana-Champaign. Effect of dietary fats, particularly omega-3 fatty acids, as well as phytonutrients and phytochemicals on inflammation, immune function and infectious disease resistance.

Jamal A. Ibdah

professor of internal medicine and medical pharmacology and physiology; MD, University of Jordan; PhD Medical College of Pennsylvania. Role of genetic and life style modifications in development of nonalcoholic fatty liver disease.

Grace Y. Sun

professor of biochemistry; PhD, Oregon State University. Effects of phytochemicals and phytonutrients on inflammatory and oxidative pathways in neurodegenerative diseases including Alzheimer's disease and stroke.

Gary A. Weisman

professor of biochemistry; PhD, University of Nebraska-Lincoln. Role of nucleotide receptors in the regulation of cardiovascular, neuronal and neoplastic cell functions.

## Application and Admissions Information for MS and PhD Programs

### Admission Contact Information

Tammy Conrad [conradt@missouri.edu](mailto:conradt@missouri.edu)  
 106 McKee; Columbia, MO 65211  
 573-882-4136

### Admission Criteria

Application deadline for Fall admission: December 31

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
100	600

Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative	Analytical
Prior to August 1, 2011	Verbal (500) Quantitative (500)	3.5
On or After August 1, 2011	Verbal (150) Quantitative (150)	

Minimum GPA: 3.0 in science and math classes

### Prerequisites

Entering students are expected to have undergraduate training (lecture and laboratory courses) in general and organic chemistry and biology, a two-semester course in biochemistry, and an upper-level human nutrition course.

### Required Application Materials

[To the Graduate School](#) (210 Jesse Hall; Columbia, MO 65211):

All required Graduate School documents, including on line application

*Required Supplementary Application Materials for the Program* (upload online with your application to the Graduate School)

- Statement of Purpose: Upload a Statement of Purpose, indicating your academic/research interests and career goals to the "Supplemental Information" section of your online application.
- Resume or Vita: Upload a current Resume or Vita to the "Supplemental Information" section of your online application.
- Recommendations: Enter the required information for at least three recommenders in the "Recommendation" section of your online application. The recommenders will receive an email with instructions for completing and submitting your recommendation. Please ensure that the recommenders are aware of the February 1 application deadline.

- GRE Scores: Please make arrangements with Educational Testing Services to have official Graduate Record Exam (GRE) scores sent directly to our department. MU's Institutional code is 6875 and our department code: 0214.

## **Master of Science in Nutritional Sciences**

### **Admission**

See admission criteria and required application materials for Nutritional Sciences above.

Note: Entrance requirements are the same for the MS and PhD.

### **MS Degree Requirements**

The master of science degree is awarded in part for the completion of a thesis. The minimum department course requirements for the master of science degree are:

Human Nutrition II (NUTR S 7340)	3h
Biochemistry (BIOCHM 7270, 7272)	6h
Nutritional Biochemistry of Lipids (NUTR S 8310)	3h
Nutrition in Human Health (NUTR S 8340)	3h
Vitamins and Minerals (AN SCI 9442)	3h
Statistics (6 credits)	6h
Masters Seminar (NUTR S 7087 1h/semester)	2h
Research Thesis (NUTR S 8090)	4h

A total of >30 hours of credit beyond the bachelor's degree are required, of which 15 credits must be at the 8000 or 9000 level; no more than 40 percent of the 30-hour credit requirement can be satisfied by a combination of special investigations, Research, Readings and / or Problems courses.

### **Masters Thesis**

A written thesis, based upon original research, that is student's own work and that demonstrates a capacity for research and independent thought is required. In addition, the graduate student must present their thesis research in a seminar that is open to the general faculty and successfully defend their thesis to their committee.

### **Reasonable Rate of Progress**

Each graduate student must complete the Annual Review Requirement by updating information in the Graduate Student Progress System. At the end of each year the adviser will evaluate each master's student. Each student must maintain a 3.0 GPA. In addition, each graduate student must maintain adequate research progress as judged by the adviser and/or graduate committee. Inadequate progress will result in a probationary period of 30 days to 1 semester.

### **Length of Study Policy**

The program for the master's degree MUST be completed within a period of three (3) years beginning with the first semester of enrollment in which the student is accepted to a degree program. Time spent in the armed services will not count toward the three (3)-year limit (see Graduate School Active Duty Policy). For any extension of this time limitation, the student must petition their faculty advisor/mentor and the academic program's director of graduate studies in writing prior to the end of the 5th semester of enrollment in the program. The director of graduate studies will notify the adviser in writing of the decision.

## PhD in Nutritional Sciences

### Prerequisites, Application and Admission

See Prerequisites, admission criteria and required application materials for Nutritional Sciences above.  
 Note: Entrance requirements are the same for the MS and PhD.

### PhD Degree Requirements

Requirements for the PhD degree in nutritional sciences include a mastery of the distinct core nutrition knowledge described by the Graduate Nutrition Education Committee of the American Society for Nutrition: general research skills; structure and biochemical and metabolic functions of nutrients and other dietary constituents; food, diets, and supplements; nutritional status assessment; nutrition and disease; nutrition interventions and policies; and, analytical skills.

### Required Courses:

Human Nutrition II (NUTR S 7340)	3h
Biochemistry (BIOCHM 7270, 7272)	6h
Nutritional Biochemistry of Lipids (NUTR S 8310)	3h
Nutrition in Human Health (NUTR S 8340)	3h
Vitamins and Minerals (AN SCI 9442)	3h
Statistics (6 credits)	6h
Doctoral Seminar (NS 9087 1h/semester; must present twice)	4h
Research Dissertation (NS 9090)	12h

A total of >72 hours beyond the bachelor's degree, including but not limited to courses from the following Emphasis Areas are required; courses from the Masters degree ≤30 h may be counted towards the doctoral degree at the discretion of the student's committee. At least 15 of the 72 hours of course work must be at the 8000/9000 level (exclusive of research, problems and independent study experiences). Graduate students may elect to take the suggested courses from the following emphasis areas within nutritional sciences. The emphasis areas are not degree programs, nor are the course lists all inclusive; rather, they serve to guide course selection.

### EMPHASIS AREAS

#### Human/Clinical Nutrition

Etiology of Obesity (NUTR S 7001)	3h
Sports Nutrition (NUTR S 7970)	2h
Exercise Metabolism (NUTR S 8870)	3h
Research in Dietetics (NUTR S 7950)	2h
Nutritional Assessment (NUTR S 7360)	3h
Nutrition Therapy I (NUTR S 7370)	3h
Nutrition Therapy II (NUTR 7380)	2h
Human Nutrition II Laboratory (NUTR S 7330)	2h
Endocrinology (AN SCI 8420)	3h
Immunology (V PIO 8451)	3h
Addiction Treatment and Prevention (SOC WK 7330)	3h

**Public Health Nutrition**

Community Nutrition (NUTR S 7590)	3h
Nutritional Assessment (NUTR S 7360)	3h
Epidemiology and Biostatistics (V P BIO 8455)	2h
Endocrinology (AN SCI 8420)	3h
Intro to Immunology (V P BIO 8451)	3h
Human Nutrition II Laboratory (NUTR S 7330)	2h
Addiction Treatment and Prevention (SOC WK 7330)	3h
Sociology of Health Systems (SOCIO L 7400)	3h
Principles of Epidemiology (F C MD 8420)	3h
Epidemiology and Community Health (V P BIO 6678)	2-6h

**Behavioral Science**

Neurobiology (BIO SC 7500)	3h
Sensory Physiology and Behavior (BIO SC 7560)	3h
Behavioral Biology (BIO SC 7640)	3h
Developmental Neurobiology (BIO SC 8450)	3h
Functional Neuroscience (PSYCH 8210)	3h
Addiction Treatment and Prevention (SOC WK 7330)	3h

**Food Science**

Food Chemistry and Analysis (FS 7310)	4h
Food Chemistry and Analysis Lab (FS 7315)	3h
Food Microbiology (FS 7370)	3h
Sensory Analysis of Foods and Beverages (FS 7380)	3h
Food Product Development (FS 7970)	3h
Functional Foods and Nutraceuticals (FS 8440)	3h
Technology of Dairy Products and Ingredients (FS 7331)	3h

**Biochemistry/Cell Physiology**

Nutritional Biochemistry of Carbohydrates (NUTR S 8360)	3h
Exercise Metabolism (NUTR S 8870)	3h
Biochemistry Lab (BIOCHM 7274)	2h
Molecular Biology Lab (BIO SC 7374)	2h
Enzymology and Metabolic Regulation (BIO SC 8432)	3h
Vet Cell Biology (VB SCI 7333)	4h
Vet Physiology (VB SCI 8420)	6h
Mammalian Cell Function (VB SCI 7310)	3h
Neural Control (VB SCI 8410)	1h
Transmembrane Signaling (VB SCI 9426)	3h

**Other Requirements**

- Primary investigator on one research grant during the second year of the doctoral program
- Teaching (2 semesters)
- Primary author on at least one research article prior to dissertation defense

## **Qualifying Exam**

The Qualifying Exam must be passed before a student is officially admitted to the doctoral program. The Qualifying Exam should be completed by the end of the second semester (D1 form should be filed with the Graduate School). The Qualifying Exam consists of a knowledge-based written exam and an oral exam.

## **Comprehensive Exam**

The comprehensive examination is the most advanced posed by MU. It consists of written and oral sections. A doctoral student must successfully complete the comprehensive examination within a period of five years beginning with the first semester of enrollment as a PhD student and at least seven months before the final defense of the dissertation. The two sections of the examination must be completed within one month. A [report of this decision \(pdf\)](#), carrying the signatures of all members of the committee, must be sent to the Graduate School and the student no later than two weeks after the comprehensive examination is completed.

## **Doctoral Dissertation**

The dissertation must be written on a subject approved by the candidate's doctoral program committee, must embody the results of original and significant investigation and must be the candidate's own work. All dissertation defenses shall be open to the general faculty. For the dissertation to be successfully defended, the student's doctoral committee must vote to pass the student on the defense with no more than one dissenting or abstaining vote.

## **Annual Review/Rate of Progress**

Annually, each graduate student must complete the [Annual Review Requirement](#) by updating information in the [Graduate Student Progress System](#). At the end of each year the adviser will evaluate each master's student. Each student must maintain a 3.0 GPA. In addition, each graduate student must maintain adequate research progress as judged by the adviser and/or graduate committee. Inadequate progress will result in a probationary period of 30 days to 1 semester.

## **Length of Study Policy**

A doctoral student must successfully complete the comprehensive examination within a period of three (3) years beginning with the first semester of enrollment as a PhD student. In addition, the program for the doctoral degree must be completed within three (3) years of passing the comprehensive examination. Time spent in the armed services will not count toward the six (6)-year limit (See Graduate School Active Duty Policy). For any extension of either of these time limitations, the student must petition their faculty advisor/mentor and the academic program's director of graduate studies in writing during the semester prior to reaching the time limitation. The director of graduate studies will notify the adviser in writing of the decision.

## **Courses**

See Nutritional Sciences (NUTR S) graduate courses in the myZou online system.

# Occupational Therapy: Master of Occupational Therapy

School of Health Professions  
Department of Occupational Therapy  
425 Lewis Hall, Columbia, MO 65211-4240  
573-882-3988; FAX 573-884-2610  
<http://shp.missouri.edu/ot/>

The School of Health Professions offers an entry level master's degree in occupational therapy. Students apply to the Department of Occupational Therapy as an undergraduate, receive a Bachelor of Health Sciences in Occupational Therapy (BHS-OT) and continue on to graduate level courses. Student with completed bachelor degree at time of application to the program may opt to take all program courses at graduate level. Graduate courses are only offered to students enrolled in the program. The degree program is approved to meet accreditation requirements requiring a graduate degree. Contact the Department of Occupational Therapy for more information regarding the degree.

## Degree Offered

Master of Occupational Therapy (MOT)

## Accreditation & Certification

The Department of Occupational Therapy is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association, 4720 Montgomery Lane, Bethesda, MD, 20814-3425, (301) 652-2682.

Graduates are eligible to sit for the national certification examination administered by the National Board for Certification in Occupational Therapy (NBCOT), Inc. 12 South Summit Ave., Suite 100, Gaithersburg, MD 20877-4150, telephone (301) 990-7979; Fax (301) 869-8492.

## Financial Aid from the Program

Check the School of Health Professions website at <http://shp.missouri.edu> for scholarship information.

## Occupational Therapy Department Faculty

Diane L. Smith,  
PhD, OTR/L, FAOTA, assistant professor and department chair. Research interests: disability advocacy, health literacy.

Crystal Gateley  
MA, OTR/L, clinical assistant professor. Research interests: health literacy.

Meena Iyer  
PhD, OTR/L, assistant professor. Research interests: human neuroplasticity in health and disease.

Lea Ann Lowery  
M Ed, OTR/L, clinical associate professor. Research interests: pediatrics.

Giulianne Krug

MA, OTR/L, clinical associate professor. Research interests: physical disability and cognitive rehabilitation.

Enid Schatz

PhD, assistant professor. Research interests: women's health and demographics.

Dovie Weston

M Ed, OTR/L, clinical instructor. academic fieldwork coordinator.

Karen Hebert

PhD, OTR/L, clinical instructor. Research interests: cognitive and reward deficits in neurological disorders particularly Parkinson's disease.

## **Master of Occupational Therapy Application and Admission Information**

Leanna Garrison, Department Manager

405 Lewis Hall; Columbia, MO 65211

573-884-2113

### **Admission Criteria**

Application Deadline for Summer entrance: December 31

- Minimum MAT score: none set
- Undergraduate GPA: 3.0 or higher (4.0=A)
- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

- Completion of all undergraduate/OT prerequisites
- 30 hours of occupational therapy observation
- Completion of all required application materials
- Acceptance to program

### **Required Application Materials**

#### **To the Graduate School:**

- All required Graduate School documents

#### **Required Application Materials to the Program (Occupational Therapy):**

- Go to <http://shp.missouri.edu/ot/> for departmental application forms (available Oct. 1-Dec. 31)
- Departmental application
- Observation Forms
- Volunteer Forms
- 3 Completed Reference forms
- Personal Statement
- Interview

## **Courses**

See Occupational Therapy (OC THR) in the myZou online system.

# Parks, Recreation & Tourism Graduate Degree Program

School of Natural Resources  
105 Anheuser-Busch Natural Resources Building  
573-882-7086  
<http://www.snr.missouri.edu/prt/>

## About Parks, Recreation & Tourism

Since virtually everyone participates in some form of leisure, the primary benefit of Parks, Recreation and Tourism (PRT) is to address quality of life issues. The unique interaction of people, places, and activities establish our profession as one of the world's largest industries. Students learn how to manage service delivery systems by combining theory with practice.

## Degree Offered

Master of Science

## Career Preparation

The purpose of graduate study is to promote research and scholarship as the foundation of professional excellence, thus preparing candidates for management-level positions or admission to doctoral programs.

## Plan of Study

The master's degree is usually completed in four semesters of study. Students work closely with their advisor to select appropriate coursework that culminates in research or creative scholarly activity.

## Thesis Option

The thesis option requires a minimum of 30 credit hours, including at least 15 hours at the 8000 level (of which, 12 hours must be theory-based courses within the major). A proposal and oral defense of the thesis are required.

## Non-Thesis

This option requires a minimum of 39 hours, including at least 15 hours at the 8000 level (of which, 12 hours must be theory-based courses in the major). Students must give an oral presentation of their project before graduation.

## Financial Aid from the Program

Funding is available, but assistantships are highly competitive. Prospective students must complete all the necessary applicant requirements to be considered for departmental funding. Check the web site or contact the graduate program emphasis coordinator for more details.

## Parks, Recreation and Tourism Faculty

David R. Vaught  
chair; PhD, University of Missouri.

J. Mark Morgan  
associate professor; PhD, Texas A&M University.

Sonja Wilhelm-Stanis  
assistant professor; PhD, University of Minnesota.

Gerald L. Hitzhusen  
associate professor; MS, University of Missouri.

Jennifer R. Upah  
director of internships; MS, University of Houston.

Nicholas M. Watanabe  
assistant professor; PhD, University of Illinois

Tyler Hack  
assistant professor; MS, University of Southern Mississippi

## Application and Admission Information

### Admission Contact Information

David Vaught  
Parks, Recreation & Tourism admission webpage  
<http://www.snrc.missouri.edu/prt/academics/graduate-program.php>

The graduate program in Parks, Recreation and Tourism supports the use of Applyyourself, located on the MU Graduate School website. Please upload all documents using this system. Contact the emphasis coordinator or School of Natural Resources Director of Graduate Programs if you experience any difficulties.

### Admission Criteria

Fall deadline: Rolling

- Minimum GRE score: not set
- Minimum GPA: 3.0 in last 60 hours
- Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

- To be accepted as a candidate for the degree, an applicant must possess an undergraduate degree and academic performance that displays a breadth and depth of university education in social, behavioral, mathematical and natural science and major-specific coursework.

## Required Application Materials

### [To the Graduate School:](#)

- All required Graduate School documents
- Application using ApplyYourself

### [To the PRT Program:](#)

- Statement of purpose
- Resume
- College transcripts
- Three letters of recommendation (use provided form and submit letters online)
- GRE scores
- TOEFL scores (for international applicants)

## Courses

See Parks, Recreation and Tourism (P R TR) in the myZou online system.

## Pathobiology Area Program Doctorate (PhD)

### Contact Information

College of Veterinary Medicine  
201 Connaway Hall  
573-884-2444

<http://www.cvm.missouri.edu/vpbio/>

### About the Program

The PhD Area Program in Pathobiology is university-wide and staffed by faculty from the College of Veterinary Medicine (Veterinary Pathobiology, Veterinary Medicine and Surgery), School of Medicine (Pathology and Anatomical Science, Molecular Microbiology and Immunology, Biochemistry), College of Arts and Science (Biological Sciences), and College of Agriculture, Food and Natural Resources (Biochemistry, Animal Sciences).

### Degree

Doctorate in Pathobiology

*Note:* The master of science program in biomedical sciences, with an emphasis in veterinary pathobiology, is listed separately in this catalog but shares the pathobiology doctoral courses and faculty list.

### Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. In this program, various stipends are available, including teaching and research assistantships and postdoctoral fellowships. Check the program Web site or ask the program contact for details.

### Career Preparation

Graduate training relates to the major departmental thrust — application of advanced biotechnology to solving today's most perplexing agricultural, biomedical and companion animal questions. The faculty in the Pathobiology Area Program consists of scientists engaged in a wide variety of research programs supported by grants and contracts from government, foundations and private industry.

The Pathobiology Program is designed to prepare students for advanced professional careers in universities and colleges, research institutes, public health, hospital laboratories and industrial research. The broad scope of the program and its organization across departments creates an atmosphere for meaningful interdisciplinary dialogue between graduate students and faculty. Furthermore, it increases availability of advisers, committee members, facilities and equipment for doctoral candidates.

A PhD candidate may choose a plan of research to take advantage of a wide range of interests and specialties in pathology and microbiology.

## **Facilities and Resources**

Facilities are available that are suitable for advanced research in pathology, microbiology and molecular biology. A wide range of equipment for advanced molecular biological procedures is available. BSL-3 biocontainment facilities are available.

## **Areas of Study**

Toxicology, environmental toxicology, comparative medicine, epidemiology and pathogenesis of avian and mammalian diseases (companion animal, food-producing animal and spontaneous disease of laboratory animals), molecular biology, ultrastructure, parasitology, DNA and RNA analysis, biomechanics, physiology, pathophysiology, oncology, bioinformatics, diagnostic anatomic pathology, veterinary neuropathology, pathology of infectious disease, quantitative pathology, molecular genetics, domestic animal genomics, bacteriology/mycology, virology, cell biology, genomics, and antimicrobial resistance.

## **Pathobiology Area Program Faculty**

Yuksel Agca

PhD; associate professor of veterinary pathobiology.

Kristina Aldridge

PhD; assistant professor of pathology and anatomical science.

Deborah Anderson

PhD; assistant professor of veterinary Pathobiology, director Laboratory of Infectious Diseases Research (LIDR)

Ulus Atasoy

MD, assistant professor of surgery and molecular microbiology and immunology.

Christopher P. Baines

PhD; assistant professor of biomedical sciences

Brenda T. Beerntsen

PhD; associate professor of veterinary pathobiology.

Linda Berent

DVM, PhD; clinical associate professor of veterinary pathobiology.

Alex Bermudez

DVM, MS; director of the Veterinary Medical Diagnostic Laboratory, associate professor of veterinary pathobiology.

David Beversdorf  
MD, associate professor of radiology, neurology, and psychology.

Greg Blomquist  
PhD, assistant professor of anthropology.

Charles R. Brown  
PhD; professor of veterinary Pathobiology.

Jeffrey N. Bryan  
DVM, PhD, associate professor of oncology.

Elizabeth Bryda  
PhD; associate professor of veterinary pathobiology.

Michael Calcutt  
PhD; associate professor of veterinary pathobiology.

Charles Caldwell  
PhD; professor of pathology & anatomical science- anatomical pathology.

C. Andrew Carson  
VMD, PhD; professor emeritus of veterinary pathobiology.

Stan Casteel  
DVM, PhD; professor of veterinary pathobiology.

Leah Cohn  
DVM, PhD; associate professor of veterinary medicine & surgery.

James Cook  
DVM, PhD; professor of veterinary small animal medicine & orthopedic surgery.

Dawn D. Cornelison  
PhD, associate professor of biological sciences.

Mark Daniels  
PhD; assistant professor of molecular microbiology and immunology.

George Davis  
MD, PhD, professor of medical pharmacology and physiology.

Kevin C. Dellsperger  
MD, PhD, professor of internal medicine and medical pharmacology and physiology.

John Dodam

PhD; department chair and associate professor of veterinary medicine and surgery.

Tim Evans

DVM, PhD; associate professor of veterinary pathobiology.

William Fales

PhD; professor of veterinary pathobiology.

Derek Fox

DVM, PhD; associate professor of veterinary medicine & surgery.

Craig Franklin

DVM, PhD; professor of veterinary pathobiology.

Vladislav Glinskii

MD, assistant professor of pathology and anatomical sciences.

Sheila A Grant

PhD, associate professor of biological engineering.

ZeZong Gu

PhD; assistant professor of pathology & anatomical sciences.

Carolyn Henry

DVM, PhD; director of the Scott Program, professor of veterinary oncology.

Tim Hoffman

PhD; professor of medicine-hematology & oncology.

Casey Holliday

PhD; assistant professor pathology & anatomical sciences, anatomy.

Gary S. Johnson

DVM, PhD; associate professor of veterinary pathobiology.

Gayle C. Johnson

DVM, PhD; professor of veterinary pathobiology.

Martin Katz

PhD; professor of ophthalmology.

DaeYoung Kim

DVM, PhD; clinical associate professor, veterinary pathobiology.

Keiichi Kuroki  
DVM, PhD; assistant professor, veterinary pathobiology.

Mike Lewis  
PhD; associate professor of veterinary medicine & surgery.

Shan-Lu Liu  
MD, PhD, associate professor of molecular microbiology and immunology

Christian Lorson  
PhD; professor of veterinary pathobiology.

Monique Lorson  
PhD; associate research professor of veterinary pathobiology.

Dennis Lubahn  
PhD; professor of biochemistry.

John Middleton  
DVM, PhD; associate professor of food animal medicine.

W. Jeff Mitchell Jr.  
DVM, PhD; associate professor of veterinary pathobiology.

Cecil Moore  
DVM, PhD; professor of ophthalmology.

Dennis O'Brien  
DVM, PhD; professor of veterinary medicine & surgery.

Charlotte Phillips  
PhD; associate professor of biochemistry.

David Pintel  
PhD, R. Phillip and Diane Acuff endowed professor of molecular microbiology and immunology.

Alpana Ray  
PhD; associate research professor of veterinary pathobiology.

Bimal Ray  
PhD; professor of veterinary pathobiology.

Chada Reddy  
PhD; associate professor of veterinary biomedical sciences & pharmacology.

Tom Reilly  
PhD; clinical associate professor of veterinary pathobiology.

R. Michael Roberts  
PhD; professor animal science & biochemistry.

Stefan G. Sarafianos  
PhD, associate professor of molecular microbiology and immunology.

Heidi Schatten,  
PhD; professor of veterinary pathobiology.

Susan Schommer  
PhD; assistant professor of veterinary pathobiology.

Daniel Shaw  
DVM, PhD; professor of veterinary pathobiology.

George P. Smith  
PhD; professor of biological sciences.

George Stewart  
PhD; McKee Endowed Professor of Microbial Pathogenesis and Chair of Veterinary Pathobiology.

R. William Stich  
PhD; professor of veterinary pathobiology.

Kristen Taylor  
PhD, assistant professor of pathology and anatomical sciences.

Catherine Vogelweid  
DVM, PhD; clinical associate professor, director of graduate studies-veterinary pathobiology.

Carol V. Ward  
PhD; professor of pathology & anatomical science.

Marlyn Whitney  
DVM, PhD; associate clinical professor of veterinary pathobiology.

Charles Wiedmeyer  
DVM, PhD; associate professor of veterinary pathobiology.

Habib Zaghouani  
PhD, J. Lavenia Edwards chair in pediatrics, professor of molecular microbiology and immunology.

Guoquan Zhang  
PhD; assistant professor of veterinary pathobiology.

### **Admission Contact Information**

Anne Chegwidden  
201 Connaway Hall  
Columbia, MO 65211  
573-884-2444

### **Admission Criteria**

Fall deadline: n/a

GRE scores: GRE scores required  
Minimum TOEFL scores (international applicants only):

Internet-based test (iBT)	Paper-based test (PBT)
61	500

Minimum undergraduate GPA: 3.0  
Designated faculty mentor

Professional students with a DVM degree may be eligible to waive the GRE. A qualifying examination administered by the doctoral committee may be required for admittance.

### **Required Application Materials**

#### **To the Graduate School:**

All required Graduate School documents

#### **To the Pathobiology Area PhD Program:**

3 letters of recommendation (can be submitted through the Graduate School's online application as well)  
GRE scores (required)

### **Plan of Study**

Most of the student's program and examining committees shall be from the area faculty. Under the guidance of a program committee, a course of study is individually designed to fit each student's academic background, experience and objectives. Courses normally suggested for completion include statistics, biochemistry, molecular biology, advanced microbiology and advanced pathology. Courses may be chosen from one or more departments, as decided by the program committee, but shall constitute a definite plan of education for research or scholarly investigation in some particular aspect of microbiology or pathology. The final examination covers mainly the dissertation.

### **Degree Requirements**

Research is the foundation of graduate and postdoctoral study and students within the Pathobiology Area Program can expect to spend 75 percent of their time engaged in research activities. The PhD degree requires 72 credit hours of work including a minimum of 15 credits of upper-level graduate

course work inclusive of research credits. The student must pass a written and oral comprehensive examination in the area of study and write, present and defend a dissertation that embodies the results of original and significant investigation by the candidate.

### **Courses**

See Veterinary Pathobiology (V PBIO) in the myZou online system.

# Pathology and Anatomical Sciences Graduate Degree Programs

School of Medicine  
M263 Medical Sciences Building  
(573) 882-1201  
[pathology-anatomy.missouri.edu](http://pathology-anatomy.missouri.edu)

## About Pathology and Anatomical Sciences

The Department of Pathology and Anatomical Sciences in the School of Medicine, along with the department of Veterinary Pathobiology in the College of Veterinary Medicine, offers a PhD degree through the Pathobiology Area Program. Faculty also participate in other doctoral programs such as the Integrative Neuroscience Program, Genetics Area Program, and Molecular Pharmacology and Physiology. The MS degree is designed primarily to prepare students for supervisory roles in basic-science and clinical laboratories, and to offer greater in-depth study in pathology and anatomical sciences concurrent with studies leading to the PhD and/or MD degree.

## Degrees offered

- Doctorate in Pathology and Anatomical Sciences
- Master of Science in Pathology and Anatomical Sciences

## Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

## Pathology and Anatomical Faculty

Edward H. Adelstein  
associate professor; DVM, MD, University of Missouri.

Kristina J. Aldridge  
assistant professor; PhD, John Hopkins University.

Gerald L. Arthur  
assistant research professor; MD, University of Chicago.

Jiankun Cui  
assistant research professor; MD, University of Tianjin Medical School, China.

George E. Davis  
professor (secondary appointment); MD, PhD, University of California-San Diego.

Alberto A. Diaz-Arias  
associate professor; MD, University of Missouri.

David L. Dufeu  
lecturer; PhD, Ohio University

Rachel H. Dunn  
lecturer; PhD, Washington University

Magda Esebua  
assistant clinical professor; MD, Tbilisi State Medical University, Tbilisi, Republic of Georgia.

Shellaine R. Frazier  
assistant clinical professor; DO, Kirksville College of Osteopathic Medicine.

Vladislav V. Glinskii  
assistant professor; MD, Medical Institute, Chernovtsy, Ukraine.

Zecong Gu  
assistant professor; MD, Tianjin Medical School, China; PhD, University of Texas.

Ann D. Havey  
associate clinical professor; MD, Southern Illinois University.

Casey M. Holliday  
assistant professor; PhD, Ohio University.

Ellis A. Ingram  
senior associate dean; associate professor; MD, University of Michigan; MHA, University of Missouri.

Jack Jones  
clinical instructor; MD, University of Tennessee.

William J. Krause  
professor; PhD, University of Missouri.

Randi R. Little  
associate research professor; PhD, Florida State University.

Scott D. Maddux  
lecturer; PhD, University of Iowa

Judith H. Miles  
professor (secondary appointment); MD, University of Missouri; PhD, University of Indiana.

Douglas C. Miller  
clinical professor; head of residency program; MD, PhD, University of Miami.

Ranadhir Mitra  
associate professor; PhD, University of Missouri.

Marian Petrides  
clinical professor; MD, Dartmouth University.

David L. Pittman  
vice chair of clinical affairs; MD, University of Nebraska.

Matthew J. Ravosa  
adjunct professor; PhD, Northwestern University.

Dmitriy V. Shin  
clinical instructor; MS, Moscow State Academy of Computer Science and Engineering, Russia.

Linda E. Spollen  
associate professor emerita; MD, University of Kansas.

M. Sharon Stack  
adjunct professor; PhD, University of Louisville.

Carl C. Stacy  
assistant clinical professor; MD, University of Oklahoma.

Grace Y. Sun  
professor (secondary appointment); PhD, Oregon State University.

Kristen H. Taylor  
assistant professor; PhD, Texas A&M University

Michael X. Wang  
assistant clinical professor; MD, Lanzhou Medical College, China, PhD, University of Texas.

Carol V. Ward  
director of graduate studies for PhD program; professor; PhD, John Hopkins University.

## **Admission Criteria**

**Deadline for Fall entrance:** Inquire with Director of Graduate Studies

## **Required Application Materials**

### [To the Graduate School](#)

All required Graduate School documents

### [To the Pathology and Anatomical Program](#)

## **Master of Science in Pathology and Anatomical Sciences**

The MS degree is designed primarily to prepare students for supervisory roles in basic-science and clinical laboratories, and to offer greater in-depth study in pathology and anatomical sciences concurrent with studies leading to the PhD and/or MD degree.

Admission to candidacy in the master's program is limited to those who hold at least a baccalaureate degree from an accredited college or university.

Preference will be given to students with a college GPA of 3.5 or higher, GRE scores (verbal + analytical) over 325, and strong letters of recommendation.

Each candidate for the master's degree is required to complete a minimum of 30 semester hours at the 8000 or 9000 level and maintain a B or better GPA in graduate course work, with no more than 12 hours of research, problems, seminars or special investigations.

Candidates also must satisfactorily complete a thesis. A candidate is expected to demonstrate knowledge of clinical and/or research techniques and to defend the thesis.

Faculty members advise students regarding their program of study and thesis research. A list of graduate faculty eligible to supervise MS students is available on the departmental website.

Required courses and those of special interest should complement the student's academic background and career objectives.

### **Interdisciplinary Area PhD in Pathobiology Area Program**

Interdisciplinary area of pathobiology: The Department of Pathology and Anatomical Sciences in the School of Medicine, along with the Department of Veterinary Pathobiology in the College of Veterinary Medicine, offers a PhD degree through the Pathobiology Area Program.

Prospective students must have a solid background in the life sciences, with advanced level experience in evolutionary biology, molecular biology, cell biology and/or biology.

Prior courses in anatomy, evolutionary biology, genetics, cell biology, developmental biology, neurobiology, biochemistry, chemistry and/or physics are highly recommended.

Preference will be given to students with a college GPA of 3.5 or higher, GRE scores (verbal + analytical) over 325, and three strong letters of recommendation.

Research experience at the undergraduate and/or master's level is also desirable.

Students are required to complete the minimum doctoral requirements of the Graduate School. These include 72 semester hours beyond the baccalaureate degree, including research and readings credits, to be approved by the doctoral advisor. Up to 30 hours of post-baccalaureate credit from an accredited institution may be transferred toward the doctoral degree.

Resources for basic-science and clinical research in integrative anatomy, cancer biology, evolution, genetics, pathobiology and neurobiology include standard and special-use equipment in the departmental laboratories.

Faculty members guide the selection of coursework and the development of a dissertation project. A list of doctoral faculty eligible to supervise PhD students is available on the departmental website.

## **Contact Information**

Director of Graduate Studies (see above for relevant degree program)  
M263 Medical Sciences Building, MU School of Medicine  
573-882-1201 (phone), 573-884-4612 (fax)

## **Courses**

See Pathology and Anatomical Sciences (PTH AS) in the myZou online system.

## Personal Financial Planning Graduate Programs

College of Human Environmental Sciences  
239 Stanley Hall  
573-882-7836  
<http://pfp.missouri.edu/>

### About the Program

Individuals and families today bear an ever-growing responsibility for achieving and sustaining financial and economic success across their life span. Never has there been a greater need for well-trained professionals who can help individuals and families make informed and effective financial and economic decisions. In addition, research that helps to evaluate and recommend public policies that influence the economic opportunities and futures of individuals and families is in high demand.

Graduate course work in Personal Financial Planning at the University of Missouri analyzes household and consumer economic conditions and behavior, evaluating the interrelationships between households and markets with a focus on improving social policy. Students' programs are designed to develop professional competencies and interests. A resident doctoral and two masters programs are available. Online graduate offerings may be viewed at [http://pfp.missouri.edu/graduate\\_distance.html](http://pfp.missouri.edu/graduate_distance.html).

### Degrees Offered

Degrees registered with the Certified Financial Planner Board of Standards Inc. include: a graduate Certificate in Personal Financial Planning; an Applied Master's Degree; and a joint JD/MS in cooperation with the School of Law. Financial planning course work could also be completed as a doctoral program that is registered with the Certified Financial Planner Board of Standards Inc.

### Financial Aid

If you wish to be considered for internal assistantships, fellowships or other funding packages, check the program website or contact the director of graduates studies, Deanna Sharpe ([sharped@missouri.edu](mailto:sharped@missouri.edu)) for details.

### Faculty Areas of Study

Students have opportunity to work closely with department faculty who are widely recognized professionals in various aspects of personal financial planning and consumer and family economics. Faculty research interests cover a broad spectrum of financial and economic issues, including, but not limited to college savings and affordability, retirement savings, health care financing, risk analysis, labor supply and household production choices, consumer behavior, consumer expenditure patterns, consumer credit use, insurance demand, and low-income financial literacy.

### Personal Financial Planning Faculty

Robert O. Weagley, CFP®  
associate professor and chair; PhD, Cornell University. Research interests: educational financing, investment management, consumer expenditures.

Starla L. Green-Ivey  
teaching assistant professor; PhD, University of Missouri.

Ryan Law, AFC  
instructor, Texas-Tech University; MS

Brenda Procter  
associate state personal finance specialist; MS, University of Missouri. Research interests: poverty, consumer protection.

Deanna L. Sharpe, CFP<sup>®</sup>, CRPC<sup>®</sup>, CRPS<sup>®</sup>  
associate professor; PhD, Iowa State University. Research interests: retirement planning, consumer expenditures, health care financing, economic policy analysis.

Lucy Schrader  
associate state personal finance specialist; MS, University of Missouri

Rui Yao, CFP<sup>®</sup>  
assistant professor; PhD, The Ohio State University. Research interests: financial risk tolerance, retirement preparation, saving behavior and motives, debt management, and household consumption patterns.

Andrew Zumwalt  
associate state personal finance specialist; MS, University of Missouri

## **Application and Admission Information for the MS and PhD degrees**

### **Admission Criteria**

Fall deadline: February 1  
Spring deadline: October 1

- Minimum TOEFL scores (for ESL applicants only):

Internet-based test (iBT)	Paper-based test (PBT)
79	550

- Minimum GPA: 3.0 in last 60 hours

### **Required Application Materials**

#### [To the Graduate School:](#)

- All required Graduate School documents
- 3 letters of recommendation
- GRE scores (or GMAT for Applied MS in Personal Financial Planning)
- Statement of Purpose
- Official transcripts
- Resume

## **Degree and Certificate Information**

### **Doctoral Program**

The doctoral program is designed to develop skill in the evaluation and generation of research that advances the disciplines engaged in Personal Financial Planning, such as Personal Finance, Family Economics, Consumer Economics, Corporate Finance, Law, among others. This program prepares students for careers in university research and teaching, government, Extension, or public policy evaluation.

### **Master of Science (thesis option)**

The thesis-based Master of Science program requires a minimum of 30 hours. Course work focuses on critical analysis of the interaction of the household sector with the markets for labor, consumer goods and financial products. Emphasis is placed on developing analytical skills. Course work culminates in a master's thesis.

### **Five-Year Bachelor of Science/Master of Science Option**

The curriculum of this 150-Hour Program provides students with a comprehensive background in financial planning procedures and practice, meeting the Certified Financial Planner Board of Standards' education requirement, allowing a student to sit for the CERTIFIED FINANCIAL PLANNER™ exam. Coursework encompasses root disciplines of economics, mathematics, and statistics and focuses on the interaction between the household and the financial sector. Students will acquire a broad background in business related courses, as well as skills in communication, professional practice, and use of computer information systems.

### **Applied Master of Science (non-thesis option)**

The Applied Master of Science is a 36 hour program. Course work is designed to complete the education required to sit for the national CERTIFIED FINANCIAL PLANNER™ exam and to broaden the practitioner's understanding of the various factors that can affect and enhance a client's financial security and economic well-being. Coursework culminates in a creative component, providing students an opportunity to integrate theory and practice in exploring or resolving issues related to personal financial planning. (This degree is also available via distance education through the Great Plains IDEA group. Note, the Great Plains IDEA degree option will require 42 hours to complete. Please see [http://pfp.missouri.edu/graduate\\_distance.html](http://pfp.missouri.edu/graduate_distance.html) for more information.)

### **Graduate Certificate in Personal Financial Planning**

The Personal Financial Planning Certificate is an 18 hour non-degree, post-baccalaureate program designed to prepare students to sit for the rigorous, national CERTIFIED FINANCIAL PLANNER™ exam.

Program applicants must have completed a bachelor's degree. Completing the Personal Financial Planning Certificate satisfies the Certified Financial Planner Board of Standard's education requirement, which is one of four requirements leading to approval to use the CFP® designation. The other three requirements are passing the national exam, meeting an experience requirement and agreeing to adhere to the CFP® code of ethics. The CERTIFIED FINANCIAL PLANNER™ designation is widely recognized as the premier professional designation in the personal financial management services industry. (This certificate is also available via distance education through the Great Plains IDEA group. Please see [http://pfp.missouri.edu/graduate\\_distance.html](http://pfp.missouri.edu/graduate_distance.html) for more information.)

**Courses Required for the Applied Master's Degree and the Graduate Certificate in Personal Financial Planning:**

FINPLN 7187 Tax Planning  
FINPLN 7382 Financial Planning: Risk Management  
FINPLN 7383 Financial Planning: Investment Management  
FINPLN 7386 Financial Planning: Employee Benefits and Retirement Planning  
FINPLN 7389 Financial Planning: Case Analysis  
FINPLN 7393 Financial Planning: Estate and Gift Planning

**Elective Courses**

Since the Personal Financial Planning Certificate is a registered program under the oversight of a professional organization granting a professional designation, all courses are required. Electives may be taken as part of the Applied Master of Science (non-thesis options), the Master of Science (thesis option) and the doctoral programs.

**For more information**

Contact Rui Yao, PhD, CFP<sup>®</sup>, 239B Stanley Hall. Phone: (573) 882-9343 or our administrative assistant at (573) 882-7836. Send an email to Dr. Yao at [yaor@missouri.edu](mailto:yaor@missouri.edu)

**Courses**

See PERSONAL FINANCIAL PLANNING (FINPLN) in the myZou online system.

# Philosophy Graduate Programs

College of Arts and Science  
438 Strickland Hall  
573-882-2871  
<http://philosophy.missouri.edu/>

## About the Program

The philosophy department provides excellent training in both research and teaching. The nationally and internationally renowned faculty have expertise in the core areas of philosophy, with particular strength in epistemology, ethics, philosophy of mind and political philosophy, and also in various specialties; these include philosophy of biology, Asian philosophy, experimental philosophy, and the foundations of decision and game theory. With 15 full time faculty and around 25 graduate students, we offer a supportive community for pursuit of the MA and the PhD, with a broad range of courses, rigorous training, attentive, high-quality advising, the opportunity to develop a professional network through our series of colloquia and conferences, and help in every aspect of job seeking. We give students the advice and support they need to present their work at regional and national conferences, and to publish in professional journals, before they begin to look for jobs. We also give our students extensive training and experience in teaching, including assistantships with award-winning teachers.

## Degrees Offered

Master of Arts in Philosophy  
Doctorate in Philosophy

## Professional Development

Presentation of research at professional meetings and publication by graduate students is encouraged. Prominent off-campus philosophers visit the department yearly for talks and symposia. Twice yearly, the Florence G. Kline endowment sponsors an intensive workshop at which papers on a special topic are presented by several leading figures in philosophy.

## Financial Aid from the Program

Fellowships and teaching assistantships are available to qualified students. Applications for fellowships must meet Graduate School deadlines, usually in January. Applications for teaching assistantships must meet the department deadline of January 15.

## Philosophy Faculty

Robert N. Johnson  
Chair, professor; PhD, University of North Carolina-Chapel Hill. Ethical theory, history of ethics, modern philosophy. 416 Strickland Hall; 573-884-6210; [johnsonrn@missouri.edu](mailto:johnsonrn@missouri.edu).

Claire Horisk  
director of graduate studies, associate professor; PhD, University of North Carolina-Chapel Hill. Philosophy of language, history of analytic philosophy. Office: 437 Strickland Hall; 573-882-4053; [horiskc@missouri.edu](mailto:horiskc@missouri.edu).

André Ariew

associate professor; PhD, University of Arizona. Philosophy of biology, philosophy of science. Office: 434 Strickland Hall; 573-882-2871; [ariewa@missouri.edu](mailto:ariewa@missouri.edu).

Joseph Bien

professor; DTC, University of Paris. Political and social philosophy, Marxism, recent continental philosophy. Office: 414 Strickland Hall; 573-882-3664; [bienj@missouri.edu](mailto:bienj@missouri.edu).

Sara Rachel Chant

assistant professor; PhD, University of Wisconsin-Madison. Metaphysics, philosophy of action, ethics, philosophy of social sciences. Office: 422 Strickland Hall; 573-882-3192; [chants@missouri.edu](mailto:chants@missouri.edu).

Zachary Ernst

associate professor; PhD, University of Wisconsin-Madison. Philosophy of biology, logic, automated reasoning. Office: 424 Strickland Hall; 573-882-2871; [ernstz@missouri.edu](mailto:ernstz@missouri.edu).

Bina Gupta

Curators' Professor, PhD, Southern Illinois University. Indian and comparative philosophy. Office: 418 Strickland Hall; 573-882-3065; [guptab@missouri.edu](mailto:guptab@missouri.edu).

Matthew McGrath

professor; PhD, Brown University. Metaphysics, epistemology, philosophy of language. Office: 419 Strickland Hall; 573-882-6546; [mcgrathma@missouri.edu](mailto:mcgrathma@missouri.edu).

Peter Markie

Curators' Teaching Professor; PhD, University of Massachusetts. Ethics, epistemology. Office: 409 Strickland Hall, 573-884-6955; [markiep@missouri.edu](mailto:markiep@missouri.edu).

Andrew Melnyk

professor; D. Phil, Oxford University. Philosophy of mind, metaphysics, philosophy of psychology, philosophy of science. Office: 439 Strickland Hall; 573-882-1278; [melnyka@missouri.edu](mailto:melnyka@missouri.edu).

Christopher Pincock

associate professor; PhD, University of California, Berkeley. Philosophy of mathematics, philosophy of science, history of analytic philosophy. Office: 430 Strickland Hall; 573-882-2871; [pincockc@missouri.edu](mailto:pincockc@missouri.edu).

Philip Robbins

associate professor and director of undergraduate studies; PhD, University of Chicago. Philosophy of mind, philosophy of psychology, philosophy of language. Office: 426 Strickland Hall, 573-882-2764; [robbinsp@missouri.edu](mailto:robbinsp@missouri.edu).

Donald E. Sievert

professor; PhD, University of Iowa. Descartes, twentieth century British philosophy. Office: 432 Strickland Hall; 573-882-3381; [sievertd@missouri.edu](mailto:sievertd@missouri.edu).

Peter Vallentyne

Florence G. Kline Missouri Chair of Philosophy; PhD, University of Pittsburgh. Ethics, social and political philosophy, philosophy of law. Office: 406 Strickland Hall; 573-882-2871. [vallentynep@missouri.edu](mailto:vallentynep@missouri.edu).

Paul Weirich

Curators' Professor and director of graduate admissions; PhD, University of California-Los Angeles. Decision theory, logic, philosophy of science, political philosophy. Office 415 Strickland Hall; 573-882-6760; [weirichp@missouri.edu](mailto:weirichp@missouri.edu).

## Application and Admissions Information

### Admission Contact Information

Paul Weirich  
College of Arts and Science  
Department of Philosophy  
415 Strickland Hall  
573 882-6760

### Admission Criteria

Fall deadline: January 15

Minimum TOEFL scores:

Internet-based test* (iBT)	Paper-based test (PBT)
100*	600

\*Speaking score of at least 23

Average GRE scores:

<i>When did you take the GRE?</i>	Verbal	Quantitative
Prior to August 1, 2011	650	700
On or After August 1, 2011	163	155

Average GPA in the major: 3.9

Although we award an MA degree, we admit students to our PhD program only (with the MA obtained in the process). Any unusual circumstances regarding failure to meet the minimum requirements should be called to the attention of the director of graduate admissions.

Eligibility for any graduate work in philosophy requires the equivalent of the following six undergraduate courses in philosophy: formal logic, ethics, ancient philosophy, modern philosophy, epistemology, and metaphysics.

Deficiencies may be made up after the student is enrolled at MU.

### Required Application Materials

#### To the Graduate School:

- All required Graduate School documents
- 3 letters of recommendation (submission through the online application system strongly preferred, but postal mail submission directly to the department allowed)
- Statement of interest (upload to the online application)
- Writing sample (upload to the online application)
- Departmental application (download this from <http://philosophy.missouri.edu/graduate/apply.html> and then upload to the online application).

[To the Philosophy Program:](#)

- GRE score report (electronic only)

## **Master of Arts in Philosophy Admission**

See *Application and Admissions* information above. Although we award an MA degree, we admit students to our PhD program only (with the MA obtained in the process).

### **Master of Arts Degree Requirements**

30 semester hours of graduate work, 15 of which must be at the 8000 level. At least 80 percent of the hours submitted for the master's program must be completed with a grade of A or B.

A distribution of graduate courses including a protoseminar for all first year students, one course in the history of philosophy and one course in either ethics, political philosophy, metaphysics, or epistemology.

A thesis or two papers of format and topic appropriate for a refereed paper in a major journal, displaying sustained research and philosophical analysis, and an oral defense of the thesis or papers.

## **Doctorate in Philosophy Admission**

See *Application and Admissions* information above

### **Qualifying Exam**

Qualification for the PhD program is established by a qualifying examination (typically by superior performance on the MA research requirement).

### **Graduation Requirements for the PhD**

72 hours of course work in philosophy, with at least 42 hours of regular course work.

A distribution of graduate courses including an introductory seminar for all first year students, two advanced courses in logic, two courses in the history of philosophy, and one course in each of ethics, epistemology, and metaphysics.

A written and oral dissertation proposal requirement designed to ensure the student's familiarity with the relevant philosophical literature and ability to analyze philosophical issues. A dissertation and a final oral examination on the dissertation.

### **Courses**

See Philosophy (PHIL) in the myZou online system.

# Physical Therapy Doctoral Degree Program

School of Health Professions  
106 Lewis Hall  
573-882-7103  
573-884-8369 (fax)  
[mushppt@missouri.edu](mailto:mushppt@missouri.edu)  
<http://shp.missouri.edu/pt/>

Starting in 2007, students who enter the MU Physical Therapy program will complete a Doctor of Physical Therapy (DPT) degree program.

## Degree Offered

Doctor of Physical Therapy (DPT)

## Careers

The DPT degree is an entry-level clinical degree that prepares the student to enter the field of physical therapy as a general practitioner with a background in musculoskeletal, neuromuscular, cardiovascular/pulmonary and integumentary systems.

## Financial Aid from the Program

Students may apply for scholarships and assistantships. Check the program website or ask the program contact for availability and details.

## Physical Therapy Faculty

Marian Minor  
professor; MSPH, PhD, University of Missouri; PT, University of Kansas. Arthritis, community based exercise programs.

Marilyn Sanford Hargrove  
teaching associate professor; PhD, PT, University of Missouri. Orthopedics and geriatrics.

Karen Wingert  
teaching associate professor; DPT, Rocky Mountain University; MA, University of Missouri-Kansas City; PT, University of Missouri. Women's health, clinical medicine/oncology.

Marybeth Brown  
Health South Professor; MS, PhD, University of Southern California; BSPT, Russell Sage College. Geriatrics, muscle physiology.

Carmen Abbott  
teaching associate professor; MA, PhD, PT, University of Missouri. Therapeutic exercise, physical agents.

Kyle Gibson

chair, director of graduate study, director of curriculum and instruction, teaching associate professor; MS, PhD, University of Missouri; PT, Northern Illinois University. Orthopedics.

Connie Blow

clinical instructor; MS, University of North Carolina; PT, University of Missouri. Pediatrics.

Jeff Krug

director of student activities; teaching assistant professor; MS, University of Missouri; BSPT, University of Wisconsin. Adult neurology, pediatrics.

Erin Dannecker

associate professor; co-director of scholarly activity, PhD, University of Florida. Musculoskeletal pain disorders, biopsychosocial factors.

Stephen Sayers

associate professor; co-director of scholarly activity, PhD, University of Massachusetts. Exercise Physiology.

Evan Prost

teaching assistant professor; DPT, A.T. Still University of Health Sciences; BSPT, University of Missouri. Geriatrics, problem based instruction.

Teresa Briedwell

director of admissions and student affairs, teaching assistant professor; DPT, A.T. Still University of Health Sciences; BSPT, University of Missouri. Orthopedics, clinical practice, differential diagnosis.

Dana Martin

director of clinical education, teaching assistant professor; DSc, Andrews University; MPT, University of Missouri. Clinical education, manual therapy.

Jeff Bridges

teaching assistant professor; DPT, A.T. Still University of Health Sciences; BS, MPT, University of Missouri. Musculoskeletal.

## **Application and Admission Information**

Applicants who will have an undergraduate degree prior to entering the program will apply to the Graduate School online admission process in addition to the Departmental Application. Graduate School applications must be submitted by January 10<sup>th</sup>.

Departmental applications are required and are due in the PT office by January 24th.

Students who are admitted without a degree will receive a bachelor's degree at completion of the first year.

All students are strongly encouraged to contact the department office for advisement and planning well in advance of application.

## Admission Contact Information

Beverly Denbigh <http://shp.missouri.edu/pt/>

## Admission Criteria

Fall deadline: N/A

Summer deadline: January 10

Minimum TOEFL scores:

Internet-based test (iBT)		Paper-based test (PBT)	
Reading	20	Listening	55
Listening	21	Structure/Written	55
Speaking	26	Reading	55
Writing	17		
TOTAL	100	TOTAL	600

Minimum GPA: 3.0

## Prerequisites for the Doctoral Degree

Note: The DPT program accepts students to begin the professional program only for summer terms, which begin in June.

Admission to the DPT program is available through regular admission (applicants will have a bachelor's degree prior to beginning the professional program) or through an early admission option that allows students to enter the professional program with 90 credit hours.

All applicants must have at least a 3.0 GPA in the core required courses and as a cumulative GPA in the last 60 credit hours.

On-campus interviews are required for admission to the professional program.

Students who enter without a bachelor's degree must have satisfied the MU general education and graduation requirements and taken two Writing Intensive courses at MU. These applicants must possess a 3.5 GPA. Applicants are notified of the selection committee's decision by March.

All students are strongly encouraged to contact the School of Health Professions Student Affairs Office for advisement and planning well in advance of application.

Admission to the program is selective.

## Required Application Materials

### [To the Graduate School:](#)

All required Graduate School documents

*To the Program* <http://shp.missouri.edu/pt/>

### **Departmental application**

2 letters of recommendation (included in the application packet)

Curriculum Vitae (resume) as specified by the application guidelines  
Official transcripts (year of application, fall grades must be recorded on transcript)  
GRE score report  
Departmental application fee

### **Plan of Study**

The professional program is offered in sequential blocks and requires full-time enrollment for three academic years and three summer sessions, beginning in the summer session following acceptance. The curriculum contains foundational and clinical sciences combining traditional lectures and course work, laboratory sessions, problem-based learning classes and clinical education. More than 200 clinical sites in Missouri and beyond are available for supervised clinical education.

A graduate must pass the National Physical Therapy Examination to receive a license to practice in the United States. The program is accredited by the Commission on Accreditation in Physical Therapy (CAPTE). Graduates are eligible for licensure anywhere in the United States.

### **Degree Requirements**

All students admitted must maintain a 3.0 grade point average with no grade below C (2.0) in courses required for the degree. Failure to achieve a semester or professional cumulative grade point average of 3.0 in required courses will result in probation or dismissal from the program. Students are expected to maintain full-time enrollment in the curriculum and complete the degree requirements as outlined in the course of study. Any exception must be approved by departmental faculty. Students must demonstrate the personal behaviors and characteristics associated with optimal patient welfare and professional trust.

### **Courses**

See Physical Therapy (PH THR) in the myZou online system.

## Physics & Astronomy Graduate Programs

College of Arts and Science  
223 Physics Building  
573-882-3335

<http://physics.missouri.edu/graduate/>

### About Physics & Astronomy

The University of Missouri offers exceptional academic opportunities for graduate study in physics and astronomy. The department allows close contact between faculty and students in a friendly environment, while providing outstanding research facilities both on and off campus and various means of financial aid for both undergraduate and graduate students.

Classes are generally small and provide ample opportunity for informal contact between students and faculty. The faculty have a strong commitment to teaching as well as research. There is a deep concern for preparing students for existing jobs in physics and related disciplines.

### Degrees Offered

Master of Science in Physics & Astronomy  
Doctorate in Physics & Astronomy

### Research Resources

The Department of Physics and Astronomy offers many opportunities for scientific research in internationally recognized programs, some of which are unique at a university and at a level expected only in much larger departments. The main focus of research is in the areas of theoretical and experimental condensed matter physics, biological physics, astrophysics, and alternative energy. These research efforts are fostered by the existence of the University of Missouri Research Reactor (MURR), a 10 MW light-water moderated reactor that is the highest-power university research reactor in the country. Furthermore, many research activities involve facilities at National Laboratories such as Argonne, Oak Ridge, or NIST.

Recently, the department received a 5-year grant from the NSF IGERT program which offers a new paradigm for interdisciplinary training of PhD students in the application of neutron scattering techniques to condensed matter science and engineering. Annual stipends are \$30,000 plus tuition and fees, over a period of 2 years. For further information and application procedure, please see <http://igert.missouri.edu>.

### Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

### Physics and Astronomy Faculty

Peter Pfeifer  
chair, professor; PhD, Swiss Federal Institute of Technology, Zurich. Surface physics.

Dorina Kosztin

director of undergraduate studies, teaching professor; PhD, University of Illinois at Urbana-Champaign.

Carsten A. Ullrich

director of graduate studies, associate professor; PhD, University of Wurzburg, Germany. Condensed matter.

Silvia Bompadre

assistant professor; PhD, University of Washington. Biological physics.

H.R. Chandrasekhar

professor; PhD, Purdue University. Optical spectroscopy.

Meera Chandrasekhar

Curators' Distinguished Teaching Professor; PhD, Brown University. Condensed matter physics and optical spectroscopy.

Shi-Jie Chen

professor; PhD, University of California, San Diego. Biological physics.

Robert V. Duncan

professor and vice chancellor of research; PhD, University of California-Santa Barbara. Low-temperature physics.

Gabor Forgacs

George H. Vineyard Distinguished Professor of Theoretical Physics; PhD, Eotvos Roland University, Budapest. Biological physics and statistical mechanics.

Shubhra Gangopadhyay

LaPierre Chair and professor of physics and electrical engineering; PhD, Indian Institute of Technology, Kharagpur. Condensed matter.

Linda Godwin

professor; PhD, University of Missouri. Astronomy and space science.

Suchi Guha

associate professor; PhD, Arizona State University. Condensed matter physics and optical spectroscopy.

Deborah Hanuscin

associate professor of physics and learning, teaching and curriculum (College of Education); PhD, Indiana University. Teaching and learning of physics, scientific literacy and K-12 teacher education.

M. Frederick Hawthorne

professor and co-director of the International Institute for Nano and Molecular Medicine; PhD, UCLA, California. Molecular medicine.

Kattesh Katti

Curators' Distinguished Professor of Radiology and Physics and Margaret Proctor Mulligan Professor in Medical Research; PhD, Indian Institute of Science, Bangalore. Radiology and bio-medical optics.

Gavin King  
assistant professor; PhD, Harvard University. Single molecule biophysics.

Karen King  
assistant teaching professor; PhD, Dartmouth College. Medical imaging and biomechanical modeling.

Sergei Kopeikin  
professor; PhD, Space Research Institute of the Russian Academy of Science. General relativity and cosmology. Theoretical and experimental gravity.

Ioan Kosztin  
associate professor; PhD, University of Illinois at Urbana-Champaign. Computational biological physics.

Aigen Li  
associate professor; PhD, Leiden University, The Netherlands. Physics and chemistry of interstellar dust.

Bahram Mashhoon  
professor; PhD, Princeton University. Relativity and gravitation.

Paul Miceli  
professor; PhD, University of Illinois at Urbana-Champaign. Condensed matter.

Wouter Montfrooij  
associate professor; PhD, University of Delft. Neutron scattering.

Sashi Satpathy  
Curators' Distinguished Professor; PhD, University of Illinois at Urbana-Champaign. Condensed matter.

Angela Speck  
professor and director of astronomy; PhD, University College, London. Infrared astronomy and stellar evolution.

Haskell Taub  
Professor and director of neutron scattering; PhD, Cornell University. Condensed matter.

Owen P. Vajk  
assistant professor; PhD, Stanford University. Condensed matter.

Giovanni Vignale  
Curators' Distinguished Professor and Millsap Distinguished Professor; PhD, Northwestern University. Condensed matter.

Carlos Wexler  
associate professor; PhD, University of Washington. Condensed matter.

Haojing Yan  
assistant professor; PhD, Arizona State University. Astrophysics.

Ping Yu  
associate professor; PhD, Hong Kong University of Science and Technology. Optoelectronics and biomedical imaging.

Yun Zhang

resident instruction assistant professor; PhD, University of California, San Diego. Instruction in physics.

Xiaoqin Zou

associate professor, PhD, University of California, San Diego. Biological physics.

## **Adjunct Faculty**

Samvel M. Badalyan

adjunct professor; PhD, Yerevan State University. Condensed matter theory.

Sunder Balasubramanian

adjunct assistant professor; PhD, Purdue University. Spectroscopy and biomedical imaging.

Carmen Chicone

adjunct professor; PhD, University of Wisconsin. Mathematical physics, gravitation.

Peter Cornish

adjunct assistant professor; PhD, Texas A&M University. Single-molecule biochemistry.

Xudong (Sherman) Fan

adjunct associate professor of physics, assistant professor at biological engineering; PhD, Oregon Center for Optics, University of Oregon. Biological engineering and physics.

John Farmer

adjunct associate professor of physics, program director at the Research Reactor Center; PhD, Kansas State University. Condensed matter.

Flemming Y. Hansen

adjunct professor; PhD, Technical University of Denmark. Phase transitions and quantum chemistry.

Friedrich Hehl

adjunct professor; PhD, Technical University of Clausthal, Germany. Gravitation and relativity theory.

Adam Helfer

adjunct professor; PhD, Oxford University (UK). Gravitation and relativity.

Helmut Kaiser

adjunct professor; PhD, Technical University of Vienna, Austria. Neutron Scattering.

Adrian Neagu

adjunct professor; PhD, University Babes-Bolyai, Cluj-Napoca, Romania. Theoretical biophysics.

Zoran S. Popovic

adjunct professor; PhD, Belgrade University. Condensed matter theory.

William Yelon

adjunct professor of physics; PhD, Carnegie Mellon University. Neutron scattering.

## **Emeritus Faculty**

David L. Cowan

professor emeritus; PhD, University of Wisconsin. Condensed matter.

Charles J. Peterson

associate professor emeritus; PhD, University of California-Berkeley. Observational astronomy.

Brian DeFazio

professor emeritus; PhD, Texas A&M University. Mathematical physics.

Patricia Plummer

professor emeritus; PhD, University of Texas. Chemical physics.

James J. Rhyne

professor emeritus; PhD, Iowa State University. Condensed matter.

Guy Schupp

professor emeritus; PhD, Iowa State University. Mossbauer scattering.

Clifford W. Tompson

professor emeritus; PhD, University of Missouri. Condensed matter.

Samuel A. Werner

professor emeritus; PhD, University of Michigan. Neutron Scattering, Condensed Matter.

Henry W. White

professor emeritus; PhD, University of California-Riverside. Condensed matter.

Joseph E. Willett

professor emeritus; PhD, University of Missouri. Plasma theory.

## **Admission Contact Information**

Dr. Carsten A. Ullrich

424 Physics Building; Columbia, MO 65211

573-882-2467

### **Admission Criteria**

Fall deadline: March 15

Spring deadline: Rolling

Minimum GRE score: none set

Minimum TOEFL scores (international applicants only):

Internet-based test (iBT)	Paper-based test (PBT)
80	550

Please consult the [Physics Department homepage](#) for details regarding the application process and the required materials.

## Required Application Materials

- **University of Missouri Graduate School Application.** Use the [online application system](#) to fill out the application form and upload the required documents.
- **Official transcripts** from all undergraduate and graduate institutions applicant has attended. Submit online to graduate school.
- **Three letters of recommendation** from three of your professors who are familiar with you and your work. Submit online to graduate school.
- **A personal statement**, containing a description of your research interests, academic background and plans of study. Submit online to graduate school.
- **Official GRE score reports** (the GRE physics subject test report is optional). Submit using institution code 6875 and department code 0808.
- **International applicants:** If your first language is not English, submit your **official TOEFL scores** using institution code 6875 and department code 76.

## Master of Science in Physics & Astronomy

### About the Master of Science

The master of science degree in physics prepares students for a variety of scientific careers. Since physics is the most fundamental of the physical sciences, graduate-level studies in the field provide essential knowledge for application in many areas. Students with strong backgrounds in physics, as well as in areas ranging from biology to engineering, are encouraged to consider a personalized MS program in physics. Graduates have many job opportunities in a variety of areas.

### Degree Requirements

In general, students must present at least 30 credit hours for the MS degree, including at least 15 hours in courses at the 8000 level. The program must include at least 15 hours of physics courses. There is no foreign language requirement.

### Research

A formal thesis is not required for the MS degree, but some research is essential, including a report on the results, and three to six hours of research credit normally is required. Thesis credit may be earned for work done in the physics department, or in a related area, at the discretion of the student and advisory committee.

### Examinations

Master's candidates must pass a qualifying examination and an oral examination before their graduation.

### Physical Science Option

The master of science (physical science) degree is designed for those preparing to teach more than one science or for those broadening their foundation in science before proceeding to the doctoral degree. It emphasizes broad training in physics, chemistry and mathematics. No thesis is required.

## **Plan of Study**

Of the required 40 hours of graduate credit, 32 hours are distributed among the departments of physics, chemistry and mathematics, and eight hours are elected from other disciplines approved by the candidate's advisers. A student must complete at least eight hours in 8000-level courses, which should not include more than three hours in seminar courses. This advanced work must be in the fields mentioned above. Mathematics 1500 and 1700, or their equivalents, should be presented for admission to candidacy or be taken without credit toward the degree. If not taken before admission, Mathematics 2300 or its equivalent must be included in the program for the degree.

## **Participation**

Graduate students in physics are expected to take a full and active part in departmental activities. Participation in research programs, departmental lectures and colloquia are considered a normal part of a graduate program.

## **Doctorate in Physics & Astronomy**

### **Admission**

For admission requirements, see Admission Criteria

### **About the Doctorate**

The doctor of philosophy degree is designed to educate scientists capable of independently formulating and solving problems of fundamental importance.

### **Degree Requirements**

In general, a PhD requires completion of a minimum of 18 hours beyond the master's degree, with a grade of 3.0 (B) or better, and completion of the department qualifying examination at the PhD pass level. The degree candidate must also meet the residency requirement. For more details, please consult the department's website or ask the director of graduate studies.

### **Plan of Study**

The specific plan of study for a PhD in physics, planned in consultation with the student's doctoral program committee, is selected to fit each student's academic background, experience and objectives. There is no foreign language requirement.

### **Comprehensive Exam**

The candidate is required to pass a comprehensive examination. At the time of the examination, each candidate must have completed (or be currently enrolled in) all of the courses in their PhD program. In special cases, the comprehensive examination may be taken with one course outstanding.

### **Research**

The candidate shall carry out original research and present an acceptable doctoral dissertation on a topic approved by the candidate's program committee. The candidate must successfully defend the dissertation in a final examination.

## **Courses**

See Physics and Astronomy in the myZou online system:

Physics (PHYSCS)

Astronomy (ASTRON)

## Plant, Insect & Microbial Sciences Graduate Programs

Division of Plant Sciences

1-41 Agriculture Building

573-882-3001

573-882-2699

<http://plantsci.missouri.edu/about/>

### About Plant, Insect & Microbial Sciences Graduate Programs

The Division of Plant Sciences (DPS) maintains excellent graduate programs with classroom instruction and research supervision provided by leading scientists in the field. The DPS offers graduate programs leading to the Master of Science (MS) and Doctor of Philosophy (PhD) degrees in Plant, Insect and Microbial Sciences. A student can select training from a wide range of courses and research programs to prepare for a career in research, teaching, industry and extension work. Students can follow a traditional curriculum or take advantage of the cross-disciplinary expertise that exists within the division.

### Programmatic Interactions

Students also benefit from interaction with closely allied academic units on and off campus. Students work with scientists in two campus-based USDA research units associated with the division: the Plant Genetics Unit and the Biological Control of Insects Research Laboratory. Additional opportunities exist for interaction with scientists at the Donald Danforth Plant Science Center in St. Louis. Numerous USDA and Danforth Center scientists hold adjunct appointments in the DPS. Students in the DPS are encouraged to interact with interdisciplinary programs on campus such as the Interdisciplinary Plant Group, the Molecular Biology Program, the Genetics Area Program, the Center for Agroforestry and the Missouri Precision Agriculture Center.

### PIMS Degrees

Master of Science (MS)

Doctor of Philosophy (PhD)

### Areas of Study

A student can select training from a wide range of courses and research programs to prepare for a career in research, teaching, industry and extension work. Students may complete their graduate degrees through any of the Graduate Program Areas:

\* Crop, Soil & Pest Management

\* Entomology

\* Horticulture

\* Plant Breeding, Genetics & Genomics

\* Plant Stress Biology

### Plant, Insect and Microbial Sciences Faculty

Heidi M. Appel

senior research scientist; PhD, University of Michigan. Biology, ecology and evolution.

Wayne C. Bailey

associate professor; PhD, Iowa State University. Forage and field crop entomology.

Bruce A. Barrett  
professor; PhD, Washington State University. Insect behavior, tree fruit entomology.

Kevin Bradley  
associate professor; PhD, Virginia Tech. Weed science.

Johann N. Bruhn  
research associate professor; PhD, University of California-Berkeley. Forest mycology and mushroom cultivation.

Michael Collins  
director, Plant Sciences; PhD, University of Kentucky, Crop Science, Forage management and utilization.

Georgia L. Davis  
associate professor; PhD, University of Wisconsin. Corn genetics.

James T. English  
associate director, Division of Plant Sciences, professor; PhD, University of Florida. Molecular ecology of plant microbe interactions.

Deborah L. Finke  
assistant professor; PhD, University of Maryland. Entomology/Plant-insect interactions.

Brad Fresenburg  
Assistant extension professor; Phd, University of Missouri. Turfgrass management

Felix B. Fritschi  
assistant professor; PhD, University of California-Davis. Crop physiology.

Walter Gassmann  
associate professor; PhD, University of California-San Diego. Molecular plant pathogen interactions.

Mary Ann Gowdy  
resident teaching assistant professor; PhD, Oklahoma State University. Floriculture.

Robert D. Hall  
professor, associate vice chancellor for research; PhD, Virginia Polytechnic Institute. Medicinal, veterinary and forensic entomology.

Richard M. Houseman  
associate professor; PhD, Texas A&M University. Insect ecology and behavior in human environments.

Won Kyo Jung  
Research assistant professor; PhD, University of Missouri. Rice production and soil management technologies.

Robert L. Kallenbach  
extension program leader, professor; PhD, Texas Tech University. Forage management.

Marc J. Linit  
associate dean, College of Agriculture, Food & Natural Resources, professor; PhD, University of Arkansas.  
Ecology of forest insects.

John A. Lory  
extension associate professor; PhD, University of Minnesota. Environmental nutrient management.

Anne L. McKendry  
associate professor; PhD, University of Manitoba, Canada. Wheat breeding.

David Mendoza-Cozatl  
assistant professor; PhD, University of California San Diego. Plant Molecular Biology

Jeanne D. Mihail  
professor; PhD; University of Arizona. Fungal ecology and mushroom cultivation.

Gerald L. Miller (Lee)  
assistant professor; PhD, North Carolina State University. Disease control in turfgrasses.

Melissa G. Mitchum  
associate professor; PhD, North Carolina State University. Molecular plant nematode interactions.

Manjula V. Nathan  
extension associate professor, director; Soil Testing and Plant Diagnostic Services Laboratories; PhD, South Dakota State University.

Kelly A. Nelson  
research associate professor; PhD, Michigan State University. Crop production systems.

Henry T. Nguyen  
endowed professor; PhD, University of Missouri. Genetics and biotechnology.

Anthony Peccoux  
Assistant research professor; PhD, University of Bordeaux, France. Viticulture

Melissa Remley  
Assistant teaching professor; PhD, University of Missouri. Plant nutrition

Craig A. Roberts  
professor; PhD, University of Arkansas. Forage quality.

Peter C. Scharf  
professor; PhD, Virginia Tech. Nutrient management.

James E. Schoelz  
director of graduate studies, professor; PhD, University of Kentucky. Molecular plant virus interactions.

Jack Schultz  
director of Bond Life Sciences Center, professor; PhD, University of Washington. Ecology, biochemistry and molecular biology.

J. Grover Shannon  
endowed professor; PhD, Purdue University. Soybean breeding.

Robert E. Sharp  
professor; PhD, University of Lancaster, England. Plant physiology.

Robert W. Sites  
professor; PhD, Washington State University. Insect systematics, ecology of aquatic insects.

Reid J. Smeda  
director of undergraduate programs, associate professor, PhD, Purdue University. Weed science.

Qisheng Song  
associate professor; PhD, University of Maryland. Insect physiology and molecular biology.

Gary Stacey  
endowed professor; PhD, University of Texas-Austin. Functional genomics of soybean microbe interactions.

W. Gene Stevens  
extension professor; PhD, Mississippi State University. Crop production-soil fertility.

Laura Sweets  
extension associate professor; PhD, University of Minnesota. Agricultural extension plant pathology.

David H. Trinklein  
associate professor; PhD, University of Missouri. Greenhouse management, floriculture extension.

Michele R. Warmund  
professor; PhD, University of Missouri. Fruit and nut crop physiology.

William J. Wiebold  
professor, PhD, University of Georgia. Soybean and corn management.

J. Allen Wrather  
professor; PhD, University of Missouri. Soybean disease control.

Xi Xiong  
assistant professor; PhD, Oklahoma State University. Turfgrass management and physiology.

Zhanyuan Zhang  
research associate professor; PhD, University of Nebraska. Plant transformation and gene regulation.

#### Adjunct Faculty

Stephen H. Anderson  
adjunct professor; PhD, North Carolina State University. Soil physics.

Prakash R. Arelli  
adjunct professor; PhD, University of Georgia. Soybean breeding and genetics.

Brenda T. Beerntsen

adjunct associate professor; PhD, University of Wisconsin-Madison. Entomology, medicinal-veterinary vectors.

Jennifer Benne

adjunct assistant professor; PhD, Michigan State University. Genetic influences on mosquito physiology and ecology.

Kristin D. Bilyeu

adjunct assistant professor; PhD, Baylor College of Medicine. Soybean seed molecular genetics.

David Burner

Adjunct associate professor; PhD, University of Kentucky. Crop Science

Ed Cahoon

adjunct associate professor; PhD, Michigan State University. Soybean molecular biology.

Thomas A. Coudron

adjunct associate professor; PhD, North Dakota State University. Insect biochemistry and biological control.

Claude Fauquet

adjunct professor, PhD, Strasburg. Plant virology, tropical plant biotechnology.

Sherry Flint-Garcia

adjunct assistant professor; PhD, University of Missouri. Genetic diversity in maize.

Sanjun Gu

adjunct assistant professor; PhD University of Nebraska-Lincoln. Commercial vegetable and small fruit production.

J. Perry Gustafson

adjunct professor; PhD, University of California-Davis. Cereal genetics.

Eliot Herman

adjunct professor; PhD, University of California-San Diego. Soybean molecular biology.

Bruce E. Hibbard

adjunct associate professor; PhD, Colorado State University. Insect resistance management.

Jong Chan Hong

adjunct professor; PhD, University of Georgia. Plant developmental and stress responses.

Newell R. Kitchen

adjunct associate professor; PhD, Colorado State University. Soil nutrient management, precision agriculture.

Laszlo Kovacs

adjunct professor, PhD, University of Missouri. Vitis genomics and gene discovery.

Robert J. Kremer  
adjunct professor; PhD, Mississippi State University. Microbiologist with the USDA-ARS Cropping Systems and Water Quality research unit.

Hari B. Krishnan  
adjunct professor; PhD, Washington State University. Soybean molecular biology.

Robert K. Lawrence  
adjunct assistant professor; PhD, Michigan State University. Forest entomology.

Arthur H. McIntosh  
adjunct professor; ScD, Harvard University. Biological control, insect pathology.

Michael D. McMullen  
adjunct professor; PhD, University of Chicago. Corn genetics.

Peter P. Motavalli  
adjunct associate professor; PhD, Cornell University. Soil nutrient management.

Robert L. Myers  
adjunct associate professor; PhD, University of Minnesota. Sustainable agriculture.

Mel Oliver  
research leader, adjunct professor; PhD, University of Calgary. Plant biochemistry.

Holly J. Popham  
adjunct assistant professor; PhD, University of Missouri. Insect virology and immunity.

Wenping Qiu  
adjunct professor; PhD, North Carolina State University. Vitis genomics and gene discovery.

Daniel Schachtman  
adjunct associate professor; PhD, Australian National University. Plant physiology and molecular biology.

Mary A. Schaeffer  
adjunct associate professor; PhD, Duke University. Bioinformatics.

Kent S. Shelby  
adjunct assistant professor; PhD, Oklahoma State University. Insect physiology and immunobiology.

David Stanley  
research leader, adjunct professor; PhD, University of California - Berkeley. Entomology.

Chris Taylor  
adjunct assistant professor; PhD, North Carolina State. Nematology and rhizosphere biology.

Paul Tracy  
adjunct associate professor; PhD, Colorado State University. Soil fertility.

P. Leszek Vincent  
adjunct assistant professor; PhD, University of Natal, South Africa. Ethnobotany and plant systematic.

John Walker

adjunct professor, PhD, University of Georgia. Plant responses to pathogens.

Oliver Yu

adjunct associate professor, PhD, University of South Carolina. Soybean molecular biology.

### **Emeritus Faculty**

Sam C. Anand

professor emeritus; PhD, University of Wisconsin. Soybean breeding and genetics.

Dale G. Blevins

professor emeritus; PhD, University of Kentucky. Plant physiology

Arun K. Chatterjee

professor emeritus; PhD, University of Guelph. Molecular genetics of plant bacteria

G. Michael Chippendale

professor emeritus; PhD, University of Wisconsin. Insect physiology.

Edward H. Coe

professor emeritus; PhD, University of Illinois. Corn genetics.

Larry Darrah

professor emeritus; PhD, Iowa State University. Agronomy.

John H. Dunn

professor emeritus; PhD, Rutgers University. Turfgrass management.

Armon Keaster

professor emeritus; PhD, University of Missouri. Entomology.

Gary Krause

professor emeritus

Roger Mitchell

professor emeritus; PhD, Iowa State University, Agronomy.

Ralph Munson

associate professor emeritus; PhD, Iowa State University. Entomology.

Curtis J. Nelson

Curators' Professor Emeritus; PhD, University of Wisconsin. Crop physiology.

Gerry Neuffer

professor emeritus

Ben Puttler

assistant professor emeritus; BS, University of California-Berkeley. Entomology.

David A. Sleper  
professor emeritus; PhD, University of Wisconsin. Soybean breeding.

Thomas D. Wyllie  
professor emeritus; PhD, University of Minnesota. Plant pathology.

## **PIMS Graduate Application and Admission Information**

### **Admission Contact Information**

Ms. Christa Smith  
1-41 Agriculture Building; Columbia, MO 65211  
573-882-3001

### **Admission Criteria**

Fall deadline: Flexible; January 15 for greatest financial aid considerations

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

Minimum GRE score: none set  
Minimum GPA: 3.0  
Bachelor's degree from an accredited college  
Demonstrated capability to perform graduate-level work

### **Required Application Materials**

#### [To Graduate School:](#)

All required Graduate School documents

#### [To the Plant, Insect & Microbial Sciences Program:](#)

3 letters of recommendation  
GRE score report  
1-2 page letter clearly articulating educational and professional goals  
Brief (2 pages) resume

### **Financial Aid from the Program**

Financial assistance is available to qualified students at both the MS and PhD levels, as either fellowships or research assistantships. Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

### **Division-Wide Requirements**

To satisfy the course requirements for a master's degree, a student must complete:

- A minimum of 30 credit hours from courses numbered 7000 - 9000
- 15 credit hours (towards the 30 credit hour requirement) must be from courses numbered at the 8000 or 9000 level
- 12 credit hours (towards the 30 credit hour requirement) can be satisfied by research, readings and problems courses
- For the Horticulture Program Area, at least 6 credits must be from formal courses, excluding Problems and other independent study courses and only 6 credit hours of research (Plnt S 8090) can count towards the 30 credit hour requirement, even though additional hours of research can be taken.

The division-wide course requirements for the master's degree are:

- [Plnt S 8010](#) Professionalism and Ethics (2 credits)
- Participation in the student seminar series
  - Plnt S 9087 (1 credit)
  - Plnt S 7087 (2 credits - Must enroll twice)
- Plnt S 8090 Thesis Research (1 - 10 credits per semester)

To satisfy the course requirements for a doctoral degree, a student must complete:

- A minimum of 72 credit hours from courses numbered 7000-9000 (this includes dissertation research credit hours - i.e. Plnt S 9090)
- 15 credit hours (towards the 72 hour requirement) must be from courses numbered at the 8000 or 9000 level, exclusive of dissertation research, problems or independent study
- For the Horticulture Program Area, all Doctoral students will have successfully completed the requirements for a master's degree before beginning a doctoral program and no more than 30 hours of dissertation research may be counted towards the 72 hr minimum.

The division-wide requirements for the PhD are:

- [Plnt S 8010](#) Professionalism and Ethics (2 credits)
- Participation in the student seminar series
  - Plnt S 9087 (2 credits - Must enroll twice; only 1 credit counts towards the 15 credit hour requirement of 8000/9000 level courses)
  - Plnt S 7087 (3 credits - Must enroll 3 times)
- Plnt S 9090 Dissertation Research (1 - 10 credits per semester)

During the Fall and Spring Semesters, MS students must enroll for 9 credits to be considered a full time student. PhD students who have not completed their comprehensive exam must enroll for 9 credits to be considered a full time student.

### **Teaching Requirement**

With the exception of the Entomology Program Area, all students must participate in an approved teaching opportunity or an approved extension program.

### **Satisfactory Rate of Progress**

A student shall maintain a minimum grade point average of 3.0. All divisional course requirements (and any additional requirements set by the student's examination committee) shall be completed in a timely manner. All advisers will meet annually with each of their graduate advisees. They will discuss the student's performance, any problems that exist and any suggestions for improvement. The adviser will provide the student and the director of graduate studies with a written summary of the meeting as part of the annual program assessment process.

## Graduate Program Area Requirements

Detailed descriptions of divisional curricula and procedures are available on the division [website](#).

### *Crop, Soil & Pest Management*

The Crop, Soil and Pest Management program area emphasizes a customized approach towards the course of study. Each student will work with their advisor and graduate committee to develop a course of study best suited to the student's educational and career goals.

### *Entomology*

The core requirements for the master's degree in entomology program are:

- Plnt S 7710 Systematic Entomology
- Plnt S 7820 Principles of Insect Physiology
- Plnt S 9810 Insect Ecology
- One elective formal entomology course

The core requirements for the PhD degree in Entomology program are:

- Plnt S 7710 Systematic Entomology
- Plnt S 7820 Principles of Insect Physiology
- [Plnt S 9810](#) Insect Ecology
- Two elective formal entomology courses

### *Horticulture*

The horticulture program area emphasizes a customized approach towards the course of study. Each student will work with their advisor and graduate committee to develop a course of study best suited to the student's educational and career goals.

### *Plant Breeding, Genetics & Genomics*

The plant breeding, genetics & genomics program area emphasizes a customized approach towards the course of study. Each student will work with their advisor and graduate committee to develop a course of study best suited to the student's educational and career goals.

### *Plant Stress Biology*

The core requirements for the master's and PhD degrees in the Plant Stress Biology program are:

- Two Entry Level courses (to be completed in the first year). Choose one course from:
  - [Plnt S 7315](#) Crop Physiology (3 credits)
  - [Plnt S 7320](#) Plant Physiology (3 credits)
- Choose one course from:
  - [Plnt S 7500](#) Biology and Pathogenesis of Plant-Associated Microbes (4 credits)
  - [Plnt S 8505](#) Introduction to Plant Stress Biology (2 credits)
- Plnt S 8530 Research with Plant Stress Agents (3 credits)

## **Courses**

For Plant, Insect and Microbial Sciences courses, see Plant Science (PLNT S) in the myZou online system.

## Political Science Graduate Programs

College of Arts and Science  
113 Professional Building  
573-882-2062

<http://politicalscience.missouri.edu/>

The department emphasizes both quality teaching and research. Several faculty members have received awards and prizes for teaching excellence and innovative research. The department aims to train people as experts in the study of politics and government, while encouraging students to acquire a sufficient background in other disciplines to enable them to correlate their specialized knowledge with all aspects of modern life.

### Financial Aid from the Program

Applications for admission and financial aid are considered on the basis of the entire packet submitted. Students may apply for departmental teaching and research assistantships and fellowships, as well as university scholarships and fellowships. Annually, about 20 departmental assistantships offer stipends of over \$11,500 plus waivers of educational fees. Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

### Political Science Faculty

John R. Petrocik

chair, professor; PhD, University of Chicago. American politics, public opinion and voting, political parties, survey research.

James W. Endersby

director of graduate studies, associate professor; PhD, University of Texas-Austin. American politics (voting, elections and public opinion), formal political theory, methodology.

L. Marvin Overby

professor; PhD, University of Oklahoma. American Political Institutions, Politics of American South and Canadian Politics.

Peveerill Squire

professor; PhD, University of California, Berkley. American political institutions, legislatures, elections.

Moises Arce

associate professor; PhD, University of New Mexico. Comparative politics (Latin America), comparative political economy.

Jay K. Dow

associate professor; PhD, University of Texas-Austin. American politics (voting and elections), formal political theory, methodology.

A. Cooper Drury

associate professor; PhD, Arizona State University. International political economy, foreign policy, economic sanctions and political unrest.

Lael R. Keiser

associate professor; PhD, University of Wisconsin-Milwaukee. Public policy and American institutions.

Jonathan T. Kriekhaus

associate professor; PhD, Princeton University. Comparative politics (Latin America), comparative political economy, development.

Sean C. Nicholson-Crotty

associate professor; PhD, Texas A&M University. Public policy, American political institutions, state government.

Stephen L. Quackenbush

associate professor; PhD, University of Buffalo. International relations, international conflict, game theory.

Leslie A. Schwindt-Bayer

associate professor; PhD, University of Arizona. Comparative politics (Latin America), comparative political institutions, gender and politics.

David J. Webber

associate professor; PhD, Indiana University. Public policy (environment and biotechnology), American government and politics (Congress and state legislatures).

Robin E. Best

assistant professor; PhD, Binghamton University. Comparative politics (Europe), political parties and party systems, comparative electoral politics, women and politics.

Simone Dietrich

assistant professor; PhD, Pennsylvania State University. International relations, international development, political economy, statistical methods.

Justin B. Dyer

assistant professor; PhD, University of Texas. Public law, American constitutional development, jurisprudence, political theory.

Michael D. Minta

assistant professor; PhD, University of Michigan. American politics, African-American politics, race and ethnic politics, legislative and bureaucratic behavior.

Amanda M. Murdie

assistant professor; PhD, Emory University. International Relations, human rights, international conflict, international organizations.

Laron K. Williams

assistant professor; PhD, Texas A&M University. Comparative politics, comparative political institutions, executive behavior, research methods.

William T. Horner

resident instruction assistant professor; PhD, University of Texas. American politics, media and politics, state government.

Jeffrey D. Milyo

adjunct professor and professor of economics; PhD, Stanford University. Political economy, law and economics, health policy.

Jill Nicholson-Crotty

adjunct professor and assistant professor of public affairs; PhD, Texas A&M University. Public policy (health, education, criminal justice), nonprofit organizations.

Lilliard E. Richardson, Jr.

adjunct professor and professor of public affairs; PhD, University of Texas. Public policy, state legislatures, research methods.

Mary A. Stegmaier

adjunct professor and teaching assistant professor of public affairs; PhD, University of Iowa. Comparative politics (Europe), voting and elections, political representation.

## Admissions

### Admission Contact Information

Laurel Youmans

113 Professional Bldg

Columbia, MO 65211

573-882-2062

### Admission Criteria

Fall deadline: February 1

Spring deadline: October 1

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
89	570

Minimum GRE scores for **Master's applicants only:**

<i>When did you take the GRE?</i>	Verbal + Quantitative
Prior to August 1, 2011	1000
On or After August 1, 2011	300

Minimum GRE scores for **Doctoral applicants only:**

<i>When did you take the GRE?</i>	Verbal + Quantitative
Prior to August 1, 2011	1200
On or After August 1, 2011	320

Minimum GPA: 3.0 in last 60 hours and in political science courses

Applicant should have at least 12 hours of upper-level course work in political science (recommended).

An undergraduate major in an area other than political science may be acceptable.

## **Required Application Materials**

### [To the Graduate School:](#)

All required Graduate School documents

### [To the Political Science Program:](#)

3 letters of recommendation

GRE score report

1-2 page statement of purpose, describing interests and goals for graduate study

Writing sample (preferred)

## **Satisfactory Progress**

A graduate student must maintain a minimum 3.0 GPA after the first semester of graduate study and a 3.4 cumulative GPA in all subsequent semesters. A student should complete and pass required courses, activities, and examinations on schedule. The student's adviser and the director of graduate studies will monitor and provide an annual assessment of a student's progress. Failure to maintain satisfactory progress can have serious consequences, including dismissal from the program.

## **Master of Arts in Political Science**

### **Admission**

For admission requirements and criteria, see About Political Science.

### **Careers**

The MA can serve multiple career goals: community-college teaching, continuation of studies to the PhD, entrance into and advancement in public service, or acquisition of skills for a position in the private sector.

### **MA Degree Requirements**

All MA students must complete Political Science 7000, 7010, and 9030. Each candidate must take one graduate seminar (8000 level) in each of three fields. Fields include: American political institutions and behavior, comparative politics and government, international relations, political theory, and public policy and administration.

The master's degree program culminates in a comprehensive oral examination and defense of the research project. The Master of Arts degree may be earned by completing either the thesis or the non-thesis program.

### **Thesis Option**

Students wishing to advance from the master's program to the PhD program at MU must take the thesis option. The thesis program requires 30 hours of academic credit (at least 18 in 8000-level Political Science seminars) and an acceptable thesis for which up to six semester hours of credit must be earned (Political Science 8090).

### **Non-Thesis Option**

The non-thesis program is a 30-hour generalist master of arts. It requires a student to take at least 30 hours of academic credit (at least 18 in 8000-level Political Science seminars) and to write a master's paper for which up to three hours of credit must be earned (Political Science 8085).

### **Satisfactory Progress**

A master's student should maintain a minimum 3.0 GPA after the first semester and a 3.4 cumulative GPA in subsequent semesters. The MA program must be completed within five years of the first semester of enrollment. Most students complete the master's program within two years. See About Political Science for departmental guidelines for satisfactory progress.

## **Doctorate in Political Science**

### **Admission**

For admission requirements and criteria, see About Political Science. Admission into the PhD program is determined by the graduate committee's consideration of the applicant's performance on the GRE general test, the applicant's academic record, statement, and letters of recommendation.

### **Careers**

Alumni with PhDs have received teaching appointments at public and private colleges as well as positions of responsibility in state and national government in the United States and in many foreign countries. In recent years, an average of five students a year entered the PhD job market. Approximately eighty percent of the PhD graduates became college teachers. Most of the remainder went into public service and a few into the private sector. Six departmental alumni have become college presidents.

### **Degree Requirements**

A student's doctoral program must include at least 52 hours of graduate work, exclusive of dissertation research. At the option of the student's doctoral program committee, up to 24 hours of the MA program may be included in the PhD program.

### **Plan of Study**

A student's program shall include at least 40 hours in Political Science courses and at least 40 hours in graduate seminars (8000 and above). Students choose a primary and secondary field from the four doctoral fields: American political institutions and behavior, comparative politics and government, international relations, and public policy and administration.

Graduate courses must include:

A minimum of 12 seminar hours in the primary (research) field

A minimum of nine seminar hours in a secondary field supporting the primary field

A minimum of 13 hours in a methodology or research tool field. Required courses include Political Science 7000, 7010, and 9030.

The remaining six hours in the methodology field may be in advanced formal or quantitative methods, advanced foreign language, or a combination of the two.

A minimum of six hours in an outside field. These courses may be in a cognate field in support of relevant substantive fields or research methods related to dissertation research.

Besides completing the necessary course work, the candidate must demonstrate the capacity to use a research tool (such as a foreign language or statistics), should obtain some teaching experience in political science (for academic careers), must pass separately written and oral comprehensive examinations, must submit and defend a dissertation proposal, and must submit and defend a dissertation.

### **Length of Study**

All required courses and the comprehensive examination must be completed within five years of the first semester in the graduate program. The dissertation must be completed and defended within five years of passing the comprehensive examination.

The PhD usually requires five years full time or the equivalent in part-time work beyond the bachelor's degree and four years beyond the master's degree. Full-time students (including teaching and research assistants) must carry a minimum of nine-hours of courses per semester (except for students conducting dissertation research).

### **Timeline**

The first three years of doctoral study typically include course work and preparation for the comprehensive examinations. Comps (9970) are typically taken early in the fourth year. A proposal for dissertation research is defended within a few months of the comprehensive exams. The remaining time is devoted to dissertation research (9090).

### **Satisfactory Progress**

A doctoral student should maintain a minimum 3.0 GPA after the first semester and a 3.4 cumulative GPA in subsequent semesters. Comprehensive exams and dissertation proposal must be completed within a timely fashion. The PhD program must be completed within ten years of the first semester of enrollment. Most students complete the doctoral program within five years. See About Political Science for departmental guidelines for satisfactory progress.

### **Courses**

Please see Political Science (POL SC) in the myZou online system.

# Psychological Sciences Graduate Programs

College of Arts and Science

210 McAlester Hall

573-882-0838

FAX 573-882-7710

<http://psychology.missouri.edu>.

<http://psychology.missouri.edu/grad>

## About Psychological Sciences

The Department of Psychological Sciences offers a doctoral program with emphases in Clinical Psychology, Cognition and Neuroscience, Developmental Psychology, Quantitative Psychology, and Social/Personality Psychology. The department also offers a dual program in Child Clinical and Developmental Psychology. All emphasis areas offer broad empirical and theoretical training with a research emphasis. The Clinical Psychology emphasis area is accredited by the American Psychological Association and by the Psychological Clinical Science Accreditation System, and is a member of the Academy of Psychological Clinical Science.

## Degrees Offered

PhD in psychology, with emphasis areas in clinical psychology, cognition and neuroscience, developmental psychology, quantitative psychology and social/personality psychology, as well as a dual program in child clinical and developmental psychology. See [Emphasis Areas](#) for more information.

## Financial Aid from the Program

Financial aid is available through departmental research and teaching assistantships and from university fellowships.

## Psychological Sciences Faculty

Moshe Naveh-Benjamin

chair, professor; PhD, University of Michigan. Human Memory: Adult-age changes in episodic memory and the interaction of attention, encoding and retrieval processes.

Jamie Arndt

professor; PhD, University of Arizona. Social psychology; motivation; existential processes; health; self-esteem; terror management.

Bruce Bartholow

professor; PhD, University of Missouri. Social cognitive neuroscience, psychophysiology, stereotyping, aggression, correlates and consequences of alcohol use, cognitive control.

Debora Bell

professor; PhD, West Virginia University; associate chair for clinical sciences and director of clinical training. Youth anxiety and depression, especially social, social-cognitive, and emotion regulation aspects of youth internalizing problems.

Ann Bettencourt

professor; PhD, University of Southern California. Intergroup processes; ethnic prejudice; stereotyping and expectancy violation, as well as influence of social identity on subjective well-being.

Charles M. Borduin

professor; PhD, University of Memphis. Multisystemic model for treating criminality and serious mental health problems in youth; systemic correlates and causes of child and adolescent psychopathology; social policy issues in children's mental health services; child maltreatment; and autism.

M. Lynne Cooper

Curator's professor; PhD, University of California-Santa Cruz. Personality and motivational influences on risk-taking behaviors; affect regulation; interrelationships among risk-taking behaviors; stress, coping, and health; gender differences in the above processes.

Nelson Cowan

Curator's professor; PhD, University of Wisconsin. Working memory and attention and their development.

Scott H. Frey

Miller Family Professor in Cognitive Neuroscience; PhD, Cornell University. Neural control of movement; rehabilitation neuroscience.

David C. Geary

Curator's professor; PhD, University of California-Riverside. Development of numerical and spatial cognition; mathematical learning disabilities; sex differences; evolutionary psychology.

Laura A. King

professor; PhD, University of California-Davis. Personality, motivation and subjective well-being; personal goals, life story and meaning in life; emotional expression and health.

Thomas M. Piasecki

professor; PhD, University of Wisconsin. Individual differences in drug motivation, negative reinforcement such as alcohol hangover and tobacco withdrawal symptoms.

Amanda Rose

professor; PhD, University of Illinois. Social competencies and children's friendships; gender differences in peer relations.

Jeff Rouder

professor; PhD, University of California--Irvine. Perception, memory, decision-making.

Todd R. Schachtman

professor; PhD, State University of New York--Binghamton. Animal learning, memory and conditioning; behavioral neuroscience; human covariation judgments; motivation and social cognition.

Kennon Sheldon

professor; PhD, University of California-Davis. Motivation, personal goals, psychological adjustment and personality development; social dilemmas and the evolution of cooperation; creativity; positive psychology.

Kenneth J. Sher

Curator's professor; PhD, Indiana University. High-risk studies of alcoholism, psychological effects of alcohol; anxiety and anxiety disorders; psychopathology and prevention.

Wendy Slutske

professor; PhD, University of Minnesota. Classification and etiology of externalizing psychopathology (alcoholism, and substance abuse, conduct disorder, antisocial personality disorder); behavior genetic studies.

Douglas Steinley

professor; PhD, University of Illinois. Multivariate statistical – cluster analysis and classification; the evolution and fragmentation of networks, terrorist networks.

Timothy Trull

Curator's professor; PhD, University of Kentucky. Diagnosis and classification of psychopathology, particularly personality disorders; personality assessment; borderline personality disorder; psychometrics; ambulatory assessment; personality and addictions; dialectical behavior therapy.

Phillip Wood

professor; PhD, University of Minnesota. Structural equation modeling; statistical methodologies for longitudinal data; alcohol, other substance use, and other problem behaviors.

Shawn Christ

associate professor; PhD, Washington University. Cognitive and neural dysfunction in children with autism and other neurodevelopmental disorders; functional brain imaging.

Steven A. Hackley

associate professor; PhD, University of Wisconsin-Madison. Cognitive and clinical neuroscience; human electrophysiology, attention and performance; Parkinson's disease.

Kristin Hawley

associate professor; PhD, University of California, Los Angeles. Therapy processes that affect outcomes for children and families in community-based mental health settings.

John Kerns

associate professor; PhD, University of Illinois. Cognitive and emotional control, their involvement in the development of schizophrenia, functional brain imaging.

Dennis Miller

associate professor; PhD, Texas A&M University. Neuropharmacology and behavioral pharmacology of [psychostimulants](#).

Denis McCarthy

associate professor; PhD, University of Kentucky. Cognitive motivations for alcohol use and drinking and driving behavior; genetic, personality, and environmental factors that influence alcohol-related learning.

Michael A. Stadler  
associate professor; PhD, Purdue University. Cognitive psychology.

Nicole Campione-Barr  
assistant professor; PhD, University of Rochester. Interplay of multiple family relationships during adolescence including parent-adolescent and adolescent sibling relationships; family relationship processes including conflict, communication, and disclosure; development of adolescent autonomy.

Clinton Davis-Stober  
assistant professor; PhD, University of Illinois at Urbana-Champaign. Mathematical models of decision making; statistical modeling and discrete geometry.

Jeffrey Johnson  
assistant professor; PhD, State University of New York--Albany. Episodic memory, functional brain imaging (fMRI and EEG).

Edgar Merkle  
assistant professor; PhD, Ohio State University. Subjective probability, Bayesian methods, latent variable models.

Laura Scherer  
assistant professor; PhD, Washington University. Automatic vs. controlled processing in person perception and attitudes, intuitive vs. deliberative decision making, medical decision making, medicalization and over-treatment.

Victoria Shaffer  
assistant professor; PhD, Ohio State University. Application of decision psychology and behavioral economics to inform practical problems in medical decision making.

Luo Yuyan  
assistant professor; PhD, University of Illinois. Developmental, infant cognition, infant understanding about agents.

Kristy vanMarle  
assistant professor; PhD, Yale University. Development of infants' understanding of number and time, representation of quantity.

Matthew Will  
assistant professor; PhD, University of Colorado. Behavioral neuroscience, drug addiction, feeding behavior, stress.

Lisa M. Bauer  
assistant teaching professor; PhD, University of Albany. Emotion and memory.

Ines Segert  
assistant teaching professor; PhD, Princeton University. Neuropharmacology of addictive drugs.

Melanie Skaggs Sheldon  
assistant teaching professor; PhD, University of Missouri. Evolutionary approaches to romantic relationships and sexuality.

Alan Strathman

teaching professor, director of graduate studies; PhD, The Ohio State University. Interpersonal relations, consideration of future consequences of behavior; wisdom.

## Application and Admissions Information

### Admission Contact Information:

Graduate Student Services  
210 McAlester Hall  
Columbia, MO 65211  
573-882-0838  
FAX 573-882-7710  
gradpsych@missouri.edu

### Admission Criteria

Fall deadline: December 1

Minimum GPA: 3.0

Minimum GRE score: no minimum, subject test is strongly recommended

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

An interview is required for admission to the clinical psychology program. Students earn an MA en route to the PhD, but we do not admit students seeking a terminal master's degree.

Most students accepted have an undergraduate major in psychology or its equivalent. Acceptance is based on training, quality of work, recommendations, GRE scores and other information. For additional information on admission requirements, consult Graduate Study in Psychology and Associated Fields, published annually by the American Psychological Association and available in most libraries.

## Required Application Materials

All application materials should be submitted directly [to the Graduate School](#)

- Graduate School online application including:
  - Department application (available at department website)
  - Personal statement
  - Three letters of recommendation
- One official copy of each college transcript where a degree was earned or is pending
- Official GRE score report (subject test report recommended)
- Official TOEFL score (if applicable)

## Emphasis Areas

### Clinical Psychology Emphasis

The clinical psychology program is accredited by the American Psychological Association and by the Psychological Clinical Science Accreditation System, and is a member of the Academy of Psychological Clinical Science. . The clinical program follows a clinical science model of training. Central to this model is a commitment to: (a) using an empirical approach to understanding, ameliorating, and preventing human problems in behavior, affect, cognition, and health; (b) to promoting adaptive human functioning; and (c) to disseminating and applying knowledge in ways consistent with scientific evidence.

The clinical program prepares students for careers involving support, production, and dissemination of clinical science research. Clinical faculty and students are active in research and scholarship that advances understanding of the symptoms, causes, course, treatment, and prevention of many of our nation's most distressing and impairing mental/behavioral health issues (e.g., addictions, anxiety, developmental disorders, eating disorders, juvenile delinquency, mood instability and disorders, schizophrenia). Students work primarily with core clinical faculty, but may also collaborate with researchers throughout the department and in other campus and community units (e.g., Thompson Center for Autism and Developmental Disabilities, Fulton State Hospital).

Students also develop clinical skills in empirically supported approaches to assessment, prevention and intervention. The clinical program maintains its own community-based outpatient clinic (the Psychological Services Clinic or PSC) as a practicum training site for students in the clinical program. The PSC is staffed by doctoral-level clinical psychologists and clinical graduate students, and it serves a broad range of clients through individual, couple, family, and group assessment and therapy services. Additional clinical experiences are available through paid or volunteer positions at institutions such as Fulton State Hospital, University Hospitals and Clinics, the Thompson Center, and the Boone County Juvenile Office's Multisystemic Family Therapy Program.

After completing high quality internships, typically at medical centers, VAs, or university research centers, graduates are employed in positions that involve research, teaching and service in universities, medical centers, clinics, hospitals and similar agencies.

### Cognition and Neuroscience Emphasis

Cognition and neuroscience training provides students with a thorough background in the content areas of psychology, statistics and scientific methodology, through course work and, more importantly, through participation in ongoing research. Students are expected to be actively engaged in research throughout their graduate training.

Faculty in Cognition and Neuroscience investigate a variety of topics in cognitive psychology, electrophysiology, and neuroimaging including selective attention, motor processing; memory; brainstem reflexes; blindsight; brain correlates of true and false memories; language; neuropharmacology and drug abuse; Parkinson's disease and many other topics.

Within cognitive psychology, our researchers investigate human learning in auditory and speech perception; immediate memory and attention; skill acquisition; individual differences in human memory and intelligence; numerical cognition; implicit learning and memory; false memory; human covariation judgment. Developmental work is being done on memory and aging; intellectual development in adulthood and memory for speech in

children. Animal learning studies investigate memory retrieval processes in animals; extinction; the role of context in conditioning; and drug effects.

### **Developmental Psychology Emphasis**

Developmental psychology is the scientific study of social, cognitive, and physical development over time. The developmental psychology doctoral program offers a strong background in statistics and research methodology and intensive research mentoring. Graduate students engage in research with their primary advisor beginning in their first semester in the program and take supporting coursework.

### **Quantitative Psychology Emphasis**

The goal of the PhD program with emphasis in Quantitative Psychology is to produce researchers who are able to develop, evaluate, and apply advanced methodological techniques to psychological research questions. The program offers considerable diversity in faculty research and coursework offerings; our substantive interests span clinical, social, health, developmental, and cognitive psychology. Quantitative areas of expertise cover a range of linear and non-linear approaches to modeling, as well as meta-analysis, time series, state-space models, and issues in large-scale data management.

Students in Quantitative Psychology complete course work in mathematical statistics, experimental design, and measurement, as well as courses in quantitative methods. Students can acquire extensive experience as statistical consultants through specific coursework in statistical consultation. Program requirements are fairly flexible, and students with particular interests in a substantive area of psychology are encouraged to take advanced courses in that area. Quantitative course offerings focus both on classic analytic methods as well as advanced techniques such as structural equation modeling, multilevel modeling, and meta-analysis.

Strong ties exist between the Department of Psychological Sciences and the Department of Statistics, and students may opt to complete a master's degree in statistics as they progress through the PhD program. In addition, students have the opportunity to gain experience as statistical consultants through specific coursework in this area.

On-going projects conducted by the faculty include research in meta-analytic and secondary analysis techniques, structural equation modeling, particularly as applied to longitudinal models of change and growth, multilevel modeling, and mathematical and statistical models of cognition and perception.

### **Social/Personality Psychology Emphasis**

Social/Personality Psychology offers training in the traditional areas of social and personality psychology, as well as their relevance for several applied areas including health psychology. This Social/Personality area integrates the psychology of the person and the situation, with the goal of understanding the psychological processes that underlie people's emotions, motivations, beliefs, and actions.

Training focuses on the multi-faceted view of social behavior from three levels: (1) the individual level; (2) the contextual level (or social level); and (3) the interaction of the individual and the contextual levels. All three levels are vital to fully understanding human psychology. Particular research foci in the area include the sources of motivation, both individual and social; the nature of meaning-making, both existential and interpersonal; the determinants of optimal and destructive functioning, both within and between groups and in relationships; and the causes and consequences of psychological well-being, growth, and defense.

From the first year, students will be actively involved in their advisor's ongoing research program. The exact nature of this involvement will be determined by the interests and needs of both parties, and may entail attending research meetings, designing research studies, running subjects, analyzing data and/or writing research reports. This hands-on research experience in conjunction with completing coursework and other program requirements is intended to provide the student with a firm grounding in the theory and methods of social/personality psychology, as well as the skills to conduct and publish his or her own research.

### **Dual Emphasis Program in Child Clinical and Developmental Psychology**

Students in the Dual Emphasis Program pursue a graduate degree with training in both clinical (child track) and developmental psychology. Students in this program are involved in training that bridges the two areas of developmental psychology and child-clinical psychology. This program provides training in the area of developmental psychopathology with the added benefit of training in the practice of child-clinical psychology. To pursue the joint program, students must be officially admitted into both the clinical and developmental training areas within the Department of Psychological Sciences and complete requirements for both areas.

### **More Information about Emphasis Areas**

These programs and others are more fully described at the departmental website at <http://psychology.missouri.edu>.

## **PhD Degree Requirements**

The PhD qualifying examination requirement is satisfied by successful completion of the MA degree. A master's degree with an empirical thesis is required for doctoral study. The master's with thesis is typically completed as part of a student's normal progress through the doctoral program.

### **Students with Degrees from Other Universities**

Students who enter the doctoral program with a master's (thesis) degree from another university can satisfy the MA requirement at this university by having their thesis and course work approved by a three-member thesis committee. The committee must be composed of one faculty member from the student's training area, one faculty member from another training area, and one MU faculty member from outside the department. Those entering the department with a master's degree obtained without an empirical thesis may meet this requirement by conducting an investigation under the supervision of their adviser and having the resulting thesis approved by a three-member committee with the composition identified above.

### **Plan of Study**

General requirements for the PhD include nine hours of distribution courses, 11 hours in statistics, 24 hours in the area of concentration, other elective courses, and research. Students must earn 83 hours to graduate with the PhD. Practica, internship and additional course work are required for the clinical program. Other requirements include a dissertation and comprehensive and final oral examinations. More detailed information about the rules and regulations for degree completion can be found in the Department of Psychological Sciences Graduate Student Handbook.

## **Courses**

See Psychology (PSYCH) in the myZou online system.

## Public Affairs Graduate Programs

Harry S Truman School of Public Affairs  
101 Middlebush Hall, Columbia, Missouri 65211  
573-884-1656  
Email [truman@missouri.edu](mailto:truman@missouri.edu)  
<http://www.truman.missouri.edu>

### About the Harry S Truman School of Public Affairs

The Harry S Truman School of Public Affairs offers master's and doctoral degrees in the theory and practice of public and nonprofit management, public policy, and organizational change. MPA students are prepared for careers in a new public service that spans government, nonprofit, and private sectors. PhD students are trained for careers in academic and research institutions.

### Degrees Offered

Master of Public Affairs (MPA)  
Cooperative Dual Degree: MPA and JD, MPA and MPH  
Doctor of Philosophy in Public Affairs (PhD)

### Public Affairs Faculty

Barton Wechsler  
professor and Dean, Truman School of Public Affairs; PhD, The Ohio State University.

Guy B. Adams  
professor and coordinator of PhD program; DPA, George Washington University.

Irma Arteaga  
assistant professor; PhD, University of Minnesota.

Brian Dabson  
research professor; director, Institute of Public Policy and Rural Futures Lab; M.S.S., University of Birmingham, England.

Rajeev Darolia  
assistant professor; PhD, George Washington University.

Michael A. Diamond  
professor; director, Center for the Study of Organizational Change; PhD, University of Maryland.

Christopher Fulcher  
research assistant professor; PhD, University of Missouri.

Kristofer Hagglund  
professor and associate dean, School of Health Professions; PhD, University of Alabama-Birmingham.

Colleen Heflin  
associate professor; PhD, University of Michigan.

Thomas G. Johnson

Frank Miller Professor of Agricultural Economics and professor of public affairs; director, Community Policy Analysis Center; PhD, Oregon State University.

Lael Keiser

associate professor of political science and public affairs; PhD, University of Wisconsin-Milwaukee.

Charles Menifield

professor; PhD, University of Missouri.

Jill Nicholson-Crotty

associate professor and director of graduate studies; PhD, Texas A&M University.

Sean Nicholson-Crotty

associate professor of political science and public affairs; PhD, Texas A&M University.

Michael Podgursky

professor of economics and public affairs; PhD, University of Wisconsin-Madison.

Stephanie Potochnick

assistant professor; PhD, University of North Carolina-Chapel Hill.

Lilliard E. Richardson, Jr.

professor; PhD, University of Texas-Austin.

Charles L. Sampson

associate professor; PhD, University of Pittsburgh.

James K. Scott

associate professor and director, European Union Center; PhD, University of Missouri.

Mary Stegmaier

teaching assistant professor; PhD, University of Iowa.

Judith Stallmann

professor of agricultural economics, rural sociology and public affairs; PhD, Michigan State University.

David C. Valentine

senior fellow, Institute of Public Policy; PhD, University of Missouri.

Lee Wilkins

professor of journalism and public affairs; PhD, University of Oregon.

Lisa A. Zanetti

associate professor; PhD, University of Tennessee.

## Master of Public Affairs

MU Truman School of Public Affairs students study with outstanding faculty, who are talented teachers as well as active, nationally recognized scholars. Policy forums, round-tables with policy makers, lectures by distinguished visiting scholars, and research symposia also enrich student learning. Small classes taught both on campus and in Jefferson City, the state's capital, make for a lively learning environment. The Truman School MPA program provides a balance of public service values, interpersonal and analytic skills, and a thorough knowledge of administrative and policy processes.

### Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Contact the Truman School at (573) 884-1656 or <http://www.truman.missouri.edu> for details.

### Application and Admission Information

Admission to the Master of Public Affairs Program  
 Ms. Nicole Harris, Coordinator of Admissions and Recruitment  
 101 Middlebush Hall, Columbia, Missouri 65211  
 573-884-1656  
 Truman@missouri.edu

### Admission Criteria

Fall deadline: Priority admission and funding consideration are given to applications received by February 1. Applications submitted after February 1 will be considered, with preference going to those received by May 1. Prospective students applying after May 1 will be considered for fall admission on a case by case basis.  
 Assistantship/Fellowship deadline: February 1

Minimum GPA: 3.0 in last 60 hours

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
79	550

Minimum preferred GRE scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative
Prior to August 1, 2011	1000
On or After August 1, 2011	298

Admission to the MPA program is competitive and open to students holding baccalaureate degrees from accredited institutions and meeting admissions standards of the Truman School of Public Affairs and the Graduate School.

### Required Application Materials

[To the Graduate School:](#)

All required Graduate School documents

[To the Truman School MPA Program:](#)

Departmental application

3 letters of recommendation (use form provided by department)

GRE score report (GRE alternatives accepted: LSAT and GMAT scores will be considered)

Resume

Statement of interest

### **Degree Requirements**

Consisting of 45 hours of graduate work, the MPA program includes a core (27 hours), an area of specialization (15 hours) and an internship (3 hours). The areas of specialization are:

Nonprofit and Public Management

Public Policy

Students with significant public service experience may have some courses waived, making the MPA program 33 hours for them. The MPA's In-service option is available to students with 3-5 years of public service experience.

### **Internship**

During the summer after their first year in the program, students without significant public sector work experience are required to complete a public service internship. Interns apply what they have learned during the first year in the program, plus they gain practical experience that enables deeper learning during second-year classes.

### **About the PhD Program in Public Affairs**

The Harry S Truman School of Public Affairs at the University of Missouri offers an interdisciplinary [PhD in Public Affairs](#) that prepares graduates for careers in universities, colleges and applied research settings in the public, private and nonprofit sectors. Students complete core sequences in public policy and management as well as research methods, and specializations tailored to students' research interests. For more information, please contact Dr. Guy Adams, coordinator of the PhD program, at (573) 882-5443 or [adamsgb@missouri.edu](mailto:adamsgb@missouri.edu).

### **Public Management Graduate Certificate**

**Note:** Federal Gainful Employment disclosures are in the back of this catalog.

Harry S Truman School of Public Affairs

101 Middlebush Hall

573-884-1656

<http://truman.missouri.edu/prospectivestudents/certificates.asp>

The graduate certificate in public management encompasses administrative skills for ethical, effective leadership and management roles in the public service. Students completing this graduate certificate will be well positioned to begin or advance a public service career with many expecting to pursue management careers in state and local governments.

### **Eligibility**

Students do not need to be enrolled in a graduate degree program at MU to participate.

## **Plan of Study**

Students must complete 12 credit hours to receive the certificate.

## **Required Public Management Certificate Courses**

The first two courses are required along with one of the remaining two:

Public Affairs 8720: Budgeting and Financial Management in Public Service Organizations  
Public Affairs 8520: Human Resources Management and Development in the Public and Nonprofit Sector;  
and  
Public Affairs 8530: Strategic Management of Public Service Organizations, or  
Public Affairs 8540: Local Government Management

## **Elective Course**

The fourth course is an elective chosen in consultation with the certificate coordinator from among the courses offered by the Truman School or by another graduate unit at MU.

## **Nonprofit Management Graduate Certificate**

**Note:** Federal Gainful Employment disclosures are in the back of this catalog.

Harry S Truman School of Public Affairs  
101 Middlebush Hall  
573-884-1656

<http://truman.missouri.edu/prospectivestudents/certificates.asp>

The graduate certificate in nonprofit management provides students with the managerial, fiduciary, and analytical tools necessary for leadership of nonprofit entities. The goal is to develop and hone skills that can be used to achieve organizational missions uniquely aimed at serving the interests of the community.

## **Eligibility**

Students do not need to be enrolled in a graduate degree program at MU to participate.

## **Careers**

As one of the fastest growing sectors in today's economy, nonprofit organizations have undergone a professionalization in management, with board members changing their orientation from one of personal networks to a bottom-line, information-based outlook. Successful nonprofit organizations today thrive on their ability to compete effectively in the marketplace, read community needs and priorities, and deliver appropriate services within budget.

## **Plan of Study for the Nonprofit Management Certificate**

Students must complete 12 credit hours to receive the certificate.

### **Required Courses**

Public Affairs 8710: The Nonprofit and Voluntary Sector

Public Affairs 8720: Budgeting and Financial Management in Public Service Organizations

### **Elective Course**

The third and fourth courses are electives chosen in consultation with the certificate coordinator from among the courses offered by the Truman School or by another graduate unit at MU.

## **Organizational Change Graduate Certificate**

**Note:** Federal Gainful Employment disclosures are in the back of this catalog.

Harry S Truman School of Public Affairs

101 Middlebush Hall

573-884-1656

<http://truman.missouri.edu/prospectivestudents/certificates.asp>

The graduate certificate in organizational change is a multi-disciplinary and multi-sector approach to the theory and practice of transforming organizations and communities in a technologically advanced and global economy. Students will have an opportunity to develop knowledge and competencies appropriate to the advanced study and diagnosis of evolving and emerging organizations and communities in the public, private, and nonprofit arena. They will find a curriculum supportive of careers in academics, management, and consulting.

### **Eligibility**

Students do not need to be enrolled in a graduate degree program at MU to participate in the program.

### **Plan of Study**

Students must complete 12 credit hours to receive the certificate.

### **Required Courses**

Public Affairs 8610: Group Dynamics and Conflict Resolution

Public Affairs 8620: Organizational Analysis and Change

Public Affairs 8630: Organizational Change in a Community and Global Context

### **Elective Course**

The fourth course is an elective chosen in consultation with the certificate coordinator from among the courses offered by the Truman School or by another graduate unit at MU.

## **Science and Public Policy Certificate**

**Note:** Federal Gainful Employment disclosures are in the back of this catalog.

Harry S Truman School of Public Affairs  
101 Middlebush Hall  
573-884-1656

<http://truman.missouri.edu/prospectivestudents/certificates.asp>

The public policy specialization offers students a strong foundation in the skills necessary to work effectively in the policy environment. Students in the public policy specialization learn theories of the policy process, quantitative and qualitative research methods to analyze policy, and program evaluation. Students also have the opportunity to gain expertise in specific policy areas including education policy, environmental policy, health policy, social policy, and regional development policy.

### **Eligibility**

Students do not need to be enrolled in a graduate degree program at MU to participate in the program. Some prerequisite courses may be necessary.

### **Plan of Study**

Students must complete 12 credit hours to receive the certificate.

#### **Required Courses**

Public Affairs 8170: Public Policy Processes and Strategies

Public Affairs 8430: Public Policy Analysis

### **Elective Course**

The third and fourth courses are electives chosen in consultation with the certificate coordinator from among the courses offered by the Truman School or by another graduate unit at MU.

## **Grantsmanship Certificate**

**Note:** Federal Gainful Employment disclosures are in the back of this catalog.

### **About the Certificate**

The Truman School offers one of the few completely online grant writing certificate programs in the country, making it easy to fit classes into a busy schedule. Students will learn to write grant proposals and manage grant funded programs effectively. Learn winning grant writing techniques and proper grant management with this four-course graduate certificate in grantsmanship. As one of the few completely online certificate programs in grantsmanship in the nation, our program is well suited for a variety of audiences, including community-based professionals in nonprofit organizations, state and local government and educators in K-12 settings. Graduate and post-doctoral students and young faculty members who are seeking to become more competitive in research careers dependent on external funding will find this certificate to be useful.

**Eligibility**

Students do not need to be enrolled in a graduate degree program at MU to participate in the program.

**Plan of Study**

Students must complete 12 credit hours to receive the certificate.

**Required Courses**

Public Affairs 8830: Grant Writing 1

Public Affairs 8831: Grant Writing 2

Public Affairs 8832: Sponsor Relationships

Public Affairs 8833: Grant Award Management

## Public Health: Master of Public Health (MPH) Graduate Program

Master of Public Health (MPH) Graduate Program

Contact Information

802 Lewis Hall

573-884-6844

<http://publichealth.missouri.edu/>

### About the Master of Public Health

The Master of Public Health (MPH) is the standard professional degree recognized throughout the world for public health practice. The MPH program at the University of Missouri trains practitioners, teachers, researchers, and administrators to plan, implement, and evaluate programs aimed at enhancing health in human populations through organized effort on the local, state, and national level.

All public health students are educated in the core domains of public health and participate in a supervised internship in a public health agency. The combination of course work and practical experience produces individuals who are highly qualified to enter the public health workforce.

The MPH curriculum is drawn from a variety of collaborating academic programs and units. Public health coursework reflects the University of Missouri's strength in the health professions, social work, nursing, medicine, veterinary medicine, and arts and sciences.

### Degrees

The MPH is available in two emphasis areas:

- Health Promotion and Policy
- Veterinary Public Health

Three dual degrees are also offered:

- Dual DVM/MPH degree allows students to complete both programs in a little over four years. Students must be admitted to both the College of Veterinary Medicine and Master of Public Health Program independently. Both degrees can be earned simultaneously or within a semester of each other, depending upon the students' choice of schedule. A number of MPH courses are online and distance-mediated.
- Dual MPA/MPH degree - The Harry S. Truman School of Public Affairs and the MU Public Health Program offer a combined program in which the student may earn a Master of Public Health (MPH) and a Master of Public Administration (MPA). This course of study is designed specifically to integrate advanced public affairs and administration practice with population-based public health knowledge and skills. The linkage of public affairs practice with public health will improve the delivery of both public administration and public health services in a variety of situations and settings.
- Dual MPH-MA in Journalism. Combines Health Promotion and Policy with Strategic Communications in the Reynolds Journalism School. Graduates will be well-positioned to find employment in risk communications and public health information in the public or private sector.

## **Thesis Option**

The Master's Thesis (P\_HLTH 8090) requires independent research aimed at discovery and/or development of elements or relationships derived from a public health theory. A formal written report using guidelines established by the MU Graduate School is required. P\_HLTH 8980 Masters Thesis Research enables the student to use the research process in a systematic inquiry of elements and relationships within public health theory. MU Graduate School Guidelines for the Thesis Process is available at <http://gradschool.missouri.edu/policies/masters/requirements/thesis-process.php>

The Master's Thesis Project provides students with the opportunity to:

- generate a research question within a theory,
- formulate and implement a research design, and
- make recommendations for replication, revisions, or future investigations.

## **Certificate**

Graduate Certificate in Public Health

## **Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

## **Public Health (MPH) Associated Faculty**

Kristofer Hagglund, Program Director

[Dr. Brenda Beerntsen](#), *Veterinary Pathobiology*

[Dr. Constance Brooks](#), *Nursing*

Dr. Nancy Cheak-Zamora, Department of Health Sciences

Linda Cooperstock, MPH *Public Health*

[Dr. Wade Davis](#), *Biostatistics Group*

[Dr. Jill Nicholson-Crotty](#), *Truman School of Public Affairs*

[Dr. Michael Hosokawa](#), *Family and Community Medicine*

[Dr. Deborah Hume](#), *Public Health*

Dr. Stephanie Potochnick, *Truman School of Public Affairs*

[Dr. Suh Won Lee](#), *Statistics*

[Dr. Kay Libbus](#), *Nursing*

[Dr. Jane McElroy](#), *Family and Community Medicine*

[Dr. Youngju Pak](#), *Statistics*

[Dr. Patrick Pithua](#), *Veterinary Medicine and Surgery*

[Dr. Chada Reddy](#), *Veterinary Medicine*

[Dr. Marjorie Sable](#), *Social Work*

[Dr. Loren Schultz](#), *Veterinary Medicine and Surgery*

[Dr. Paul Speckman](#), *Statistics*

[Dr. George Stewart](#), *Veterinary Pathobiology*

Dr. Michelle Teti, Department of Health Sciences

[Dr. ManSoo Yu](#), *Social Work and Public Health*

## MPH Application and Admission Information

### Admission Contact Information

Enola White ([mumphprogram@missouri.edu](mailto:mumphprogram@missouri.edu))

802 Lewis Hall

Columbia, MO 65211

573-884-6844

### Admission Criteria

Fall deadline: June 30

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
80	550

Minimum Academic IELTS overall score: 6.0

Minimum GRE score: not set

Minimum GPA: 3.0 in last 60 hours

## Required Application Materials

### [To the Graduate School:](#)

All required Graduate School documents

### [To the Master of Public Health Program:](#)

- Personal data sheet
- Official transcripts
- Personal essay
- Resume or CV
- 2 letters of recommendation
- GRE score report (Other qualifying exams for advanced degrees will be considered, including the LSAT, MCAT and GMAT.)

An interview (either on-campus or by telephone) with program faculty may be requested.

Please note also that the committee may waive the GRE requirement, the English competency examination and/or the grade point requirement for applicants who have either completed or are currently enrolled in a graduate or professional degree program such as DVM, MD or Nursing. Applicants should include any waiver request on their application.

## Graduate Certificate in Public Health

### Admission

Students wishing to pursue a Graduate Certificate in Public Health should complete the MU Graduate School's online application (standardized test scores are not required). Certificate candidates must provide the MPH Program's Personal Data Sheet and official transcripts to the MPH Program.

### About the Certificate

This 12-credit-hour program provides students with the core public health education that they need to enhance their professional knowledge. The certificate program includes the following courses:

- Principles of Public Health
- An approved Health Statistics course
- Human Health and the Environment, Social and Behavioral Sciences in Public Health or Epidemiology
- One approved elective

### Applying to the Graduate Certificate Program

Students who complete the Graduate Certificate in Public Health with a minimum grade of B in each of the four courses will be recommended for admission to the Master of Public Health (MPH) program should they wish to continue their studies. The course credits earned for the graduate certificate will be credited toward the MPH degree.

### Courses

See Public Health (P\_HLTH) in the myZou on line system.

## Public Health: Family and Community Medicine (Master of Science)

School of Medicine  
M224 Medical Sciences Building, DCO32.00  
573-884-7060

### About the Program

The Department of Family and Community Medicine has responsibilities for teaching, research and service activities covering the spectrum from primary medical care to community medicine. This graduate degree program is designed to prepare primary care physicians to work in an academic setting as faculty members with responsibilities for patient care, teaching, research, and scholarly endeavors. Applicants must be graduates of an accredited medical school, U.S. citizens or permanent residents and licensed to practice in a primary care specialty.

### Faculty

Jeffery Belden  
associate professor of clinical family and community medicine; MD, Southern Illinois University.

Robert L. Blake Jr.  
William C. Allen professor emeritus of family and community medicine; MD, Washington University-St. Louis.

James D. Campbell  
professor of family and community medicine PhD, University of Missouri.

Jack M. Colwill  
professor emeritus of family and community medicine MD, University of Rochester.

Kevin Craig  
assistant professor of clinical family and community medicine, M.D., University of Texas, MSPH University of Missouri

David Cravens  
associate professor of clinical family and community medicine; MD, MSPH, University of Missouri.

Kevin Everett  
associate professor of family and community medicine; MA, PhD, Louisiana State University.

Anne B. Fitzsimmons  
associate professor of clinical family and community medicine; MD, University of Missouri.

Elizabeth Garrett  
professor of clinical family and community medicine; MD, MSPH, University of Missouri.

Linda A. Headrick  
Professor internal medicine, senior associate dean for education and faculty development; MD, Stanford University.

Kimberly Hoffman  
research associate professor, associate dean of education evaluation; PhD, University of Missouri.

Michael C. Hosokawa  
professor of family and community medicine, ; EdD, University of Oregon.

Debra Howenstine  
assistant professor of clinical family and community medicine; MD, University of Missouri.

Kevin Y. Kane  
associate professor of clinical family and community medicine; MD, Creighton University MSPH University of Missouri.

Julie Kapp  
assistant professor of family and community medicine; PhD, St. Louis University.

Scott Kinkade  
associate professor of family and community medicine, MD, University of Texas, MSPH University of Missouri

Karl Kochendorfer.  
Associate professor of clinical family and community medicine; MD, University of Illinois-Chicago.

Peter Koopman  
assistant professor of clinical family and community medicine; MD, University of Pittsburgh.

Richelle Koopman  
associate professor of family and community medicine; MD, MS, University of Pittsburgh.

Robin L. Kruse  
research associate professor of family and community medicine; PhD, State University of New York. MSPH University of Missouri

Michael LeFevre  
professor of family and community medicine, associate chair; MD, MSPH, University of Missouri.

Erik J. Lindbloom  
associate professor of family and community medicine, fellowship director; MD, MSPH, Northwestern University. MSPH University of Missouri

Jane McElroy  
assistant professor of family and community medicine; PhD, University of Wisconsin-Madison.

David R. Mehr  
professor of family and community medicine; MD, University of California-San Francisco MS University of Michigan

Laura Morris

assistant professor of clinical family and community medicine, M.D. MSPH University of Missouri

David Oliver

research professor, assistant director of MU Interdisciplinary Center on Aging; PhD, University of Missouri.

Debra Parker-Oliver

professor of family and community medicine; PhD, University of Missouri.

Carin Reust

associate professor of clinical family and community medicine; MD, University of Missouri.

Erika Ringdahl

professor of clinical family and community medicine; MD, University of Iowa.

William Steinmann

professor of internal medicine; MD, University of Missouri.

Jim Stevermer

professor of clinical family and community medicine; MD, Washington University-St. Louis. MSPH University of Missouri

Amanda Swenson

assistant professor of clinical family and community medicine, M.D.MSPH University of Missouri

Sarah Swofford

assistant professor of clinical family and community medicine; MD, MSPH University of Missouri.

Paul Tatum III

assistant professor of clinical family and community medicine; MD, University of Texas Health Science Center. MSPH University of Missouri

Daniel C. Vinson

Professor of family and community medicine; MD, University of North Carolina. MSPH University of Missouri

Dennis Wen

associate professor of clinical family and community medicine; MD, East Carolina School of Medicine.

Adam Whaley-Connell

associate professor of internal medicine; DO, Kansas City University of Medicine MSPH University of Missouri.

Harold A. Williamson

professor of family and community medicine and vice chancellor for health sciences, professor; MD, Case Western Reserve University. MSPH University of Missouri

Steven C. Zweig

professor and chair of family and community medicine; MD, MSPH, University of Missouri.

## Admission Contact Information

Ashley Granger  
One Hospital Dr, MA303; Columbia, MO 65212  
573-884-7060

### Admission Criteria

Deadline for Fall entrance: Call for deadline dates

- Board-certified/board-eligible primary care physicians
- 

## Required Application Materials

### [To the Graduate School:](#)

All required Graduate School documents

### [To the Program](#) (call for application):

- 3 letters of recommendation
- Departmental application
- Personal statement
- CV or resume
- Verification from medical school and residency program
- Official transcripts

### Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program Web site or ask the program contact for details.

### Plan of Study

The graduate program leading to the master of science includes a combination of course work, research and field experience. Courses cover areas such as research methods, epidemiology, biostatistics and learning theory. The program requirements include 30 hours of graduate course work and the completion of scholarly project.

## Courses

See Family and Community Medicine Public Health (F\_C\_MD) in the myZou online system.

## Religious Studies Graduate Degree Program

College of Arts and Science  
221 Arts & Science Bldg.  
573-882-4769

<http://religiousstudies.missouri.edu/>

### About Religious Studies

Religious Studies seeks to understand the role of religion in human life and culture. The department's field of study includes religious expression from all cultures and in every period of history. The master's program in religious studies is designed to achieve two goals that reflect the distinct educational aims of two different kinds of students. The first goal is preparation of students for PhD programs. Increasingly, doctoral programs in religious studies expect applicants to have a master's or similar advanced degree. The degree is designed to prepare students for entry into such programs. It therefore emphasizes appropriate language study, the recognized, scholarly approaches to the study of religion, history of the discipline, research methods, and knowledge of the range of religious experience and expression. The second goal is to provide graduate study of religions for those who desire it in order to enrich their educational lives, to prepare for seminary study, or to strengthen work in other allied disciplines, such as journalism, education, history, literature, anthropology, or art history.

### Degree Offered

Master of Arts in Religious Studies

### Financial Aid from the Program

Fellowships are offered through the Graduate School. Teaching assistantships which include a stipend and tuition remission are available, on a competitive basis, to both entering and advanced master's degree candidates.

### George M. Landes Graduate Travel Fund

The George M. Landes Graduate Travel Fund was established to support travel expenses incurred by graduate students as part of their course of study. Typically, funds are allocated to help defray the costs of travel to conferences where students present papers, or of research trips to archives and field locations. Applications can be submitted at any time and should be directed to the Director of Graduate Studies. The size and number of disbursements depend on available funds and the number of pending applications. Decisions about awards from the travel fund are made collectively by the department's faculty. The travel fund is made possible through the generosity of George Miller Landes, Davenport Professor Emeritus of Hebrew and the Cognate Languages, Union Theological Seminary, New York.

### Community Service Scholarship

The department awards one or two \$250 scholarships each year to students who have demonstrated a commitment to public service. Majors, minors, and masters degree students are eligible. Nomination forms are available at the department office (email: [rinfo@missouri.edu](mailto:rinfo@missouri.edu)). A gift from Elizabeth MacKenzie allowed the department to establish this award.

## **Religious Studies Faculty**

Robert Baum  
associate professor; PhD, Yale University.

Richard Callahan  
chair, associate professor; PhD, University of California, Santa Barbara.

Dan Cohen  
assistant teaching professor; PhD, University of Virginia.

Signe Cohen  
director of graduate studies, associate professor; PhD, University of Pennsylvania.

Edward Drott  
assistant professor; PhD, University of Pennsylvania.

Carrie Duncan  
assistant professor; PhD, University of North Carolina, Chapel Hill.

Bob Flanagan  
assistant teaching professor; PhD, University of Iowa.

Rabia Gregory  
assistant professor; PhD, University of North Carolina, Chapel Hill.

Nate Hofer  
assistant professor; PhD, Emory University.

Dennis Kelley  
assistant professor; PhD, University of California, Santa Barbara.

Kate Kelley  
visiting instructor; MA University of Missouri-Columbia, MPhil University of Stirling, Scotland, ABD Lancaster University.

Jill Raitt  
professor emerita; PhD, University of Chicago.

## **Application and Admission Information**

### **Admission Contact Information**

Prof. Signe Cohen  
221 Arts & Science Bldg  
Columbia, MO 65211  
573-882-4760

### **Admission Criteria**

Fall deadline: February 1 (for consideration of financial aid)  
April 1 (for students not seeking financial aid)  
Spring deadline: October 15

Minimum GPA: 3.0  
Minimum GRE score: none set  
Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
79	550

### **Required Application Materials**

[To the Graduate School:](#)

All required Graduate School documents

[To the Religious Studies MA Program:](#)

Departmental application  
3 letters of recommendation (use departmental form)  
GRE score report

### **Degree Requirements**

The MA degree requires at least 30 credit hours of graduate study, of which 24 are to be taken in residence. The program allows considerable latitude for different courses of study and expects that each student will work out an appropriate selection of courses in consultation with a member of the department.

The normal expectation in the Department of Religious Studies is that a full-time graduate student in the MA program will complete the degree in two years. A student's progress, therefore, will be measured according to this standard. The M-1 Program of Study form and the M-2 Request for Thesis Committee form must be filed by the end of the second semester of study. Full-time graduate students who exceed or expect to exceed two years to complete will be asked to file a plan and schedule for the completion of the degree before the end of the second year. This plan requires the approval of the student's adviser, the chair of the department, and the director of graduate studies (DGS). Should the student's adviser also be either the chair or DGS, then this plan requires the signature of one additional faculty member. The department will normally not grant extensions beyond a third year. Within the first year, a part-time student should submit a plan and schedule for completion of the degree for approval by the student's adviser, the chair, and the director of graduate studies. That plan may be adjusted with the consent of the adviser, chair, and DGS.

### **Comprehensive Exams**

Students will normally take their comprehensive exams before enrolling in their third semester in the program.

### **Plan of Study**

A core curriculum explores subjects that are fundamental to the study of religion and is required of all graduate

students. The program requires that graduate students take a course in the methodologies of religious studies or demonstrate competence in this area, normally by demonstrating that they have taken an equivalent course elsewhere. Each fall, the department offers a course on Modern Perspectives in the Study of Religion that partially satisfies this requirement. Competence in theory and method in the study of religion must be demonstrated by successfully completing a comprehensive examination in this area.

In addition, the degree requires a sequence of three courses that examine the major forms of religious expression and religious action and teach students how scholars in the field have approached them. These three courses are in the following areas:

*Religious Texts and Interpretation-Courses 8200-8299*

These courses will be a close examination of a canonical or foundation text and its role in the religious traditions in which it is authoritative. The course will consider both the traditional interpretations and appropriations of the text and contemporary methods of interpretation. The goal of the course is to understand and to use the fundamental tools of textual interpretation. The specific course topic will vary each semester.

*Religious History-Courses 8400-8499*

These courses will study the life of a religious community in its geographical and historical specificity. The goal of the course is to learn how to examine a particular religious community within its cultural, social and historical contexts. The special course topic will vary each semester.

*Comparative Religion-Courses 8600-8699*

These courses will study points of contact or comparison within or among Asian, Western and Indigenous traditions. Topics may include religious issues common to various religions, problems of understanding and inequities of power in the encounter of religious traditions, and phenomenological categories of religion, such as sacred time or space. The goal of the course is to understand the methods and issues in the comparative study of religion. The special course topic will vary each semester.

In addition to these core requirements, students will take course work or be able to show competence in one or more of the religious traditions of Asia, of the West and of Indigenous peoples. Core courses may be used to demonstrate competence.

**Appropriate Language Study to Area of Emphasis**

The department requires students to acquire a working knowledge of one language in addition to English during the master's program. The language should help the student work with primary sources or with scholarship in a field of special interest. Working knowledge may be demonstrated in three ways: (1) 3 credits of intensive language study, (2) 6 credits of undergraduate language study, and (3) a reading exam administered by the department faculty. Students who are considering going on to doctoral studies are encouraged to work on a second language as well.

If an exception to the language requirement is appropriate due to the background of a student, the student may request that the requirement be waived. The request must be submitted to the Director of Graduate Studies by the end of the second semester of graduate study. The Director of Graduate Studies will present the request to the department faculty for a decision.

## **Area of Emphasis**

When they apply to the program, master's students will designate an area of emphasis and, when they enter it, much of their course work will reflect the area they choose. The areas in which the department offers work are the following:

- American Religious History
- Biblical Studies
- History of Christianity
- Religion and Society
- Religions of East Asia
- Religions of Indigenous Peoples
- Religions of South Asia
- Women and Religion

Although the department is committed to providing faculty resources in each of these areas, prospective students should contact the department concerning their specific interests. Once an area of emphasis has been determined, the student will work with the faculty adviser to determine what other courses both within and outside the department might be required. By the end of the student's second semester s/he will complete and submit a Program of Study (M-1 Form) [in pdf] and will assemble a thesis or portfolio committee (M-2 Form) [in pdf], which is normally composed of two faculty members from the department and one member from outside.

## **Master's Thesis or Portfolio**

The culminating requirement in the master's program is a master's thesis or portfolio. Each student will write a substantial thesis or collect a portfolio of papers that demonstrates the ability to do independent research, the capacity to advance the bounds of knowledge in religious studies, proficiency in the appropriate linguistic and analytic skills necessary to the student's area of emphasis, and specialized knowledge of the area of emphasis. Should the student choose to submit a portfolio, the papers should reflect a common theme or common area of study. Students may take up to six credit hours of guided research in their preparation of a master's thesis or portfolio.

## **Courses**

See Religious Studies (REL ST) in the myZou online system.

# Romance Languages & Literatures Graduate Programs

College of Arts and Science  
143 Arts and Science Building  
573-882-4874

<http://romancelanguages.missouri.edu/grad.shtml>

## About the Department of Romance Languages and Literatures

The Department of Romance Languages and Literatures offers graduate degree programs in Spanish, and French, as well as an MA emphasis area in foreign language teaching. The department's faculty and graduate student seminars are an interdisciplinary, interdepartmental series seeking to provide a collegial atmosphere in which scholars can present their recent work. The department strongly encourages study abroad as a way to reinforce language skills, broaden one's horizons, and add an unforgettable experience to a meaningful university education.

The Department of Romance Languages and Literatures at the University of Missouri has the country's only focus area in the field of Afro-Romance Studies. In order to facilitate research collaboration between our faculty members working in this field and scholars outside our institution, we have established the Institute for Languages and Literatures of the African Diaspora. The Institute serves first and foremost to expose black writers of French, Portuguese and Spanish expression to a wider audience.

## Degrees Offered

MA in Spanish  
MA in French  
MA in Foreign Language Teaching (French or Spanish)  
PhD in Romance Languages and Literatures (French or Spanish)

## Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

## Romance Languages Faculty

Flore Zéphir  
chair, professor of French; PhD, Indiana University-Bloomington. Applied linguistics, foreign language education, sociolinguistics, African diaspora studies.

Charles D. Presberg  
Associate chair and director of graduate studies; associate professor of Spanish; PhD, Harvard University. Spanish literature of the Golden Age, Cervantes, poetics, cultural studies, critical theory.

Juanamaria Cordones-Cook  
professor of Spanish; PhD, University of Kansas. Contemporary Spanish-American literature, critical theory, Luisa Valenzuela, Nancy Morejón, Afro-Hispanic theater.

Carol Lazzaro-Weis

Middlebush Professor of Romance Languages, professor of French and Italian; PhD, University of Pennsylvania. Eighteenth century French literature, contemporary Italian literature, women's narratives, literary history.

Mary Jo Muratore

Middlebush Professor of the Humanities, professor of French; PhD, University of California-Davis. Seventeenth century French literature, dramatic theory, Corneille, Racine, metadrama.

Michael Ugarte

professor of Spanish; PhD, Cornell University. Eighteenth, nineteenth and twentieth century Spanish literature, cultural studies, literary theory.

John Zemke

professor of Spanish; PhD, University of California-Davis. Medieval Spanish literature, Judeo-Spanish literature, Hispanic oral traditions.

Mamadou Badiane

associate professor of Spanish; PhD, University of Iowa. Afro-Hispanic literature, Afro-Caribbean literature and culture, Négritude and Negrismo.

Erick Blandón

associate professor of Spanish; PhD, University of Pittsburgh. Hispanic American literature and Central American cultural studies.

Rita Cavigioli

associate professor of Italian; PhD, University of California-Los Angeles. Twentieth century Italian literature.

Jack Draper

associate professor of Portuguese; PhD, Duke University. Brazilian literature, music, and popular culture, Latin American cultural studies.

Rangira (Béa) Gallimore

associate professor of French; PhD, University of Cincinnati. Francophone literature, theoretical linguistics, twentieth century French literature.

Valerie Kaussen

associate professor of French; PhD, University of California-Santa Cruz. Caribbean and Haitian literature and French/Francophone cinema.

Asier Alcázar

assistant Professor of Spanish; PhD, University of Southern California. Spanish linguistics.

Megan Moore

assistant professor of French; PhD, University of Michigan. French medieval literature.

Guadalupe Pérez-Anzaldo

assistant Professor of Spanish; PhD, University of California-Irvine. Mexican literature, Latin American literature and culture.

Iván Reyna

assistant professor of Spanish; PhD, University of California-Berkeley. Latin American literature, culture, and historiography.

Daniel Sipe

assistant professor of French; PhD, University of Minnesota-Twin Cities. Nineteenth century French literature, critical theory, and French film.

Mar Soria Lopéz

assistant professor of Spanish; PhD, University of Illinois at Urbana-Champaign; Nineteenth and Twentieth century Spanish literature and cultural studies, and visual studies.

Roberta Tabanelli

assistant professor of Italian; PhD, University of Wisconsin-Madison. Twentieth century Italian literature, contemporary Italian cinema, society and culture.

Demetrio Anzaldo-González

associate teaching professor of Spanish; PhD, University of California-Irvine. Latin American literature and cultural studies.

Alicia Aviles-Quiñones

assistant teaching professor of Spanish; PhD, Tulane University. Latin American literature and culture.

Kenneth Fleak

assistant teaching professor of Spanish; PhD, University of Missouri.

Stephen Hessel

assistant teaching professor of Spanish; PhD, SUNY-Buffalo.

Dawn Heston

assistant teaching professor of Spanish; coordinator of Spanish 1200; MALT, University of Missouri.

Linda Keown

assistant teaching professor of Spanish; coordinator of Elementary Spanish 1100, MA, Emory University.

Monica Marcos-Llinas

associate teaching professor of Spanish; PhD, Universitat de les Illes Balears, Spain.

Joseph Otabela

assistant teaching professor of Spanish; PhD, National University for Distance Education, Spain.

Lornaida McCune

instructor of Spanish; coordinator of Intermediate Spanish 2100, MA, University of Missouri.

M. Annice Wetzel

instructor of French; coordinator of Elementary French 1100, 1200 and 2100, MA, Middlebury College.

## Application and Admission Information

### Admission Contact Information

Mary Harris  
143 Arts and Science  
Columbia, MO 65211  
573-882-5039

<http://romancelanguages.missouri.edu/grad.shtml>

### Department Admission Criteria

Fall deadline: February 15  
Spring deadline: October 15

Minimum GPA: 3.0 in field of major  
Masters applicants must have a bachelor's degree  
Doctoral applicants must have a master's degree.  
Minimum TOEFL scores (international applicants):

Internet-based test (iBT)	
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Applicants must also demonstrate adequate preparation in advanced language and literature courses. This will require their having completed at least four courses equivalent to a 4000-level course for masters applicants or a 7000 level course for doctoral applicants at the University of Missouri. At a minimum, three of these courses must be in literature. If the faculty determines a deficiency, they will require that the student complete remedial course work in literature during the first year of enrollment. The director of graduate studies will inform students of these additional requirements at the time of their admission.

Internal doctoral applicants should refer to the application instructions on the doctoral page.

### Required Application Materials

[To the Graduate School](#) (Please use the online application system [Apply Yourself](#))

- All required Graduate School documents
- Official Transcript (send to Graduate School at 210 Jesse Hall, University of Missouri, Columbia, MO 65211-1160)
- 10-15 page writing sample in language of desired degree program, must be uploaded to the online application
- 500-word Personal Statement, uploaded to the online application
- 3 letters of recommendation (submitted through Apply Yourself or mailed to the Romance Languages Department, 143 Arts & Science, University of Missouri, Columbia, MO 65211)
- Résumé or CV

*Note:* All application forms are on the Graduate School web site [gradschool.missouri.edu/admission](http://gradschool.missouri.edu/admission)

## **Master of Arts in Spanish or French**

### **Choosing an Adviser**

All graduate students in the department may choose, or the director of graduate studies will assign them, an academic adviser at the start of their first semester of graduate study. Students must choose an academic adviser by the end of their first semester of graduate study.

### **Plan of Study**

The department offers MA degrees in both French and Spanish (Peninsular or Spanish-American literature).

### **Minors**

Students may also elect a minor field of study, which requires a minimum of 9 hours of course work completed in another department or other departments. Students interested in such minors should consult the section titled Plan of Study in the Graduate Catalog. These minor fields appear on students' plan of study, but not on their transcript. Students electing minors must complete the standard MA examination in their major field (French or Spanish).

### **MA Degree Requirements**

Students must complete a total of 30 credit hours at the graduate-level to earn their MA degree. At least 15 hours must be in courses at the 8000 level or above. The plan of study for the MA in Spanish must include a minimum of nine hours of course work in Spanish peninsular literature and a minimum of nine hours of course work in Spanish-American literature. The plan of study for an MA in Spanish must also include three credit hours in the history of the Spanish language (completion of Spanish 7711 or the equivalent).

For the MA in either French or Spanish, the total number of credit hours in special readings (7960), problems (8085) or any combination of both may not exceed twelve. The number of credit hours in special readings (7960) within the student's major field may not exceed three per semester. Graduate Instructors with no pedagogical experience or those who have completed no graduate course in foreign language teaching methodology will be required to take French/Spanish 7120, Foreign Language Teaching Methodology.

Non-native speakers will be required to complete an online proficiency assessment with the appropriate course coordinator before a decision on their admission status is finalized by the department.

### **Submitting Your Plan of Study to the Graduate School Office**

MA candidates must submit a completed M-1 Plan of Study form to the Graduate School at least one semester before taking their MA examinations.

### **Funding Through Graduate Instructorships**

MA candidates normally receive 4 semesters of financial support from the University while completing their degree. This support will customarily take the form of a graduate instructorship, though it may take the form of either a research or teaching assistantship.

### **Possible Fifth Semester of Support**

In exceptional cases, students in good standing — with no grades of Incomplete and unproblematic teaching — may receive a fifth semester of support, at the discretion of the faculty. Faculty will award a fifth semester of support according to the department's need for instructors. Students must submit all requests for a fifth semester of support in writing to the director of graduate studies. No student will receive more than five semesters of support.

### **Normal Teaching Load vs. Course Load**

The minimum teaching assignment for MA candidates holding instructorships is 1 course per semester, although there may be an opportunity for two. International students may never teach more than 2 courses per semester owing to visa restrictions. All MA candidates must be registered in a minimum of 6 hours of course work for each semester in which they hold an instructorship. Students may enroll in up to 6 hours per semester of 8080 (Readings) if they have completed all their course work and are preparing for their MA exams.

### **Annual Review**

The faculty and course directors in both major languages meet during the fall and spring semesters to evaluate the teaching and academic performance of all graduate students. The director of graduate studies informs all students in writing of their status at the end of each semester. Students who fail to remove a grade of Incomplete will be limited to teaching one course per semester for as long that grade of Incomplete remains on their academic record.

### **Master's Thesis**

The writing of a thesis is optional. A minimum of 4 hours and a maximum of 6 hours of 8090 Research will be allowed for the thesis. Students are urged to obtain the Graduate School's guidelines for thesis/dissertation writing as the thesis must conform to the Graduate School's formatting and style specifications.

### **Thesis Committee**

Students choosing to write a thesis must name a thesis committee consisting of no fewer than three members of the doctoral faculty at the University of Missouri, one of whom should be from a department other than the Department of Romance Languages and Literatures.

### **Comprehensive Examination for the MA degree**

All candidates for the Master of Arts degree must pass a 6-hour written examination based on the MA reading list. The examination is given twice a year, generally in late October and late March.

The French Master's examination consists of six 1-hour parts covering literature of the Middle Ages/Renaissance, 17th, 18th, and 19th centuries, and two of the following three periods in the contemporary period: twentieth century French Literature, twentieth century Francophone Literature, contemporary literary theory.

The Spanish examination consists of two 3-hour examinations. The first component covers Peninsular Spanish literature from the Middle Ages to the present and the second component covers Spanish American literature from the Colonial period to the present.

At least half the examination must be written in the candidate's language of specialization.

### **Grading of the Comprehensive Exam**

The MA examination is graded as follows: High Pass, Pass, and Fail. In order to receive a passing grade on any section of the examination, a student must receive passing grades from two thirds of the examining committee. To pass the entire examination, students must receive passing grades on all sections. With permission from the examining committee, students who fail part of the examination may retake only the failed section or sections of the examination. Two failures of the examination, in whole or in part, will terminate candidacy for the degree and result in dismissal from the program.

## **Master of Arts, Language Teaching emphasis, in Spanish or French**

### **Admission**

Students desiring to work for the degree of Master of Arts (Emphasis on Language Teaching) should apply directly online to the Graduate School. On the Graduate School's web site (<http://gradschool.missouri.edu>), applicants can find links for information, instructions for applying and the online application form. This form is submitted electronically to the Graduate School, along with the application fee. In addition, the following materials should be sent directly to the Graduate School at 210 Jesse Hall, University of Missouri-Columbia, Columbia, MO 65211. In addition, the following materials should be sent directly to the Graduate School at 210 Jesse Hall, University of Missouri-Columbia, Columbia, MO 65211:

- \* Official transcripts from the institution(s) previously attended
- \* TOEFL scores (international applicants only)
- \* Photocopies of diplomas earned at colleges/universities outside the US (international applicants only)

In addition, our department requires the following materials from all applicants:

- \* Departmental Graduate Studies Application
- \* Three Letters of Reference
- \* A 10-15 page-writing sample
- \* 500-word personal statement detailing the applicant's reasons for selecting the University of Missouri for graduate studies and academic/career goals. Applicants may also send other supporting materials, such as a résumé, if desired.

**Please submit all materials online. See <http://gradschool.missouri.edu/admission/>**

The application form and the form for reference letters are available on the Department's web page (<http://romancelanguages.missouri.edu/>). Candidates for the MA must hold a Bachelor's degree (or equivalent) with a grade point average of 3.0 or better in their major field of study. They must also demonstrate adequate preparation in advanced language and literature courses for admission. This will normally be four courses equivalent to a 4000-level course at the University of Missouri. At least three of these courses must be in literature or linguistics. If the Admissions Committee believes that a deficiency exists, it will prescribe additional course work (during the first year of enrollment) beyond the 30 credit hours necessary for the MALT degree. The Director of Graduate Studies will inform students of these additional requirements at the time of admission.

All non-native speakers of French/Spanish will be required to complete an online proficiency assessment prior to admission. Applicants will be contacted by the appropriate course coordinators to schedule this assessment.

Students who are judged deficient in any of these areas are required to do remedial work. New graduate students who are required to do remedial work because of the departmental language proficiency examination will be retested within one year. Students must receive a passing score, or their candidacy will be terminated.

All graduate students will be assigned an advisor by the Director of Graduate Studies at the start of their first semester of graduate study.

### **MALT Program of Study**

A total of 30 hours selected from courses receiving graduate credit must be completed for the MALT (Master of Arts in Language Teaching). A minimum of 21 of the 30 hours must be taken in either French or Spanish. At least 15 hours must be in courses at the 8000 level or above. Of these 8000-level courses, six hours must be in the Department of Romance Languages. The remaining 9 hours may be taken from course work outside the department with the approval of the student's academic adviser.

Note: The College of Education no longer offers a certification program in the field of foreign language education. However, students who do not have a teaching certificate and who are interested in completing relevant courses in the field of education while working on their MALT will need to contact the professional advisors in the School of Education. These students, with advisor's consent, could use their 9 hours allowed outside the department-provided that they are graduate-level courses-toward courses in education. At the completion of their MA, students can work directly with the Missouri Department of Elementary and Secondary Education to see how they can be certified in the State of Missouri.

Please note also that the number of hours of credit allowed for Special Readings (7960) and Problems (8085) may not exceed twelve. MA candidates may not take more than one of these two independent readings course per semester.

Students wishing to transfer MA credits from another university may transfer up to six hours, provided these courses were taken within the last eight years.

MALT candidates must submit a completed M-1 Program of Study to the Graduate School at least one semester before completing their comprehensive examinations.

### **Teaching Assistants**

MALT students normally have 4 semesters of support in which to complete their degree. This support will customarily take the form of a Graduate Instructorship. MA students may not teach more than ten hours per semester. A fifth and final semester may be granted in exceptional circumstances to students in good standing (i.e., no incompletes, history of good teaching, etc.). This extra semester will be awarded on the basis of departmental need and will be granted only if a request is made formally and in writing to the Graduate Studies Committee, which will make its recommendation to the entire faculty. No student will receive support beyond the fifth semester.

The normal course load for MALT candidates holding teaching assistantships is 9 hours. All MALT candidates must register for a minimum of 6 hours of graded courses included in the Master's program in every semester in which they hold a teaching assistantship. Exceptions to this regulation must have the approval of the Graduate Studies Committee prior to registration. International students must not fall below six hours or they will lose their student status. Students who have completed all coursework may enroll in up to 6 hours per semester of 8080 (Readings) in order to prepare for the MALT exam.

The faculty and the course directors in each of the major languages will meet during the fall and winter semesters to evaluate the performance of all graduate students as students and as teaching assistants. The Director of Graduate Studies will inform all students in writing of their status following this formal performance review.

Any student who fails to have an incomplete removed within one year of its issuance will be limited to teaching one class per semester until the incomplete grade is removed. This excludes Dissertation/Thesis (9090) courses.

## **Course Distribution**

The course distribution for the MALT program is as follows:

### **WITHIN THE DEPARTMENT**

#### \* Language/Linguistics: 6 hours

For French, courses may be taken from:

F 7710: History of the French Language (3)

F7130: Stylistics (3)

F770: Structure of Modern French (3)

or any French language/linguistics course approved by the student's adviser

For Spanish, courses may be taken from:

S7130: Stylistics (3)

S7711: History of the Spanish Language (3)

S7721: Structure of Modern Spanish (3)

or any Spanish language/linguistics course approved by the student's adviser

#### \* Civilization/Culture: 3-6 hours

For French:

F7510: African Francophone Literature (3)

F7980: Special themes (when theme is on Cultural Studies) (3)

F8087: Francophone civilization and culture (3)

For Spanish:

S7442: Advanced Contemporary Culture of Spain (3)

S7460: Advanced Contemporary Culture of Spanish America (3)

S7980: Special themes (when theme is on Cultural Studies) (3)

#### \*Literature: 3-6 hours

French: any one or two courses in French or Francophone literature at the 7000 level or above

Spanish: any two courses in Spanish or Latin American literature at the 7000 level or above  
(See Graduate Catalog for wide range of offerings)

\*Methodology/Second Language Acquisition: 9 hours

F/S7120: Foreign Language Teaching Methodology/Second Language Acquisition (3)  
F/S 8087: Research in Foreign Language Learning (3)  
F/S 8120: Bilingualism and Language Contact (3)

### **OUTSIDE THE DEPARTMENT (UP TO 9 HRS)**

\*\*For students interested in education, suggested courses from the College of Education can include:

Teacher Development Program 7000: Foundations of Teacher Preparation I (4)  
Teacher Development Program 7020: Foundations of Teacher  
Preparation II (4)

\*\*For students interested in ESL, courses can include:

Structure of American English (3)  
History of the English Language (3)  
Regional and Social Dialects of English (3)

**Please Note:** Courses taken outside the department must be approved by the student's academic advisor.

### **Comprehensive Examination for the MALT degree**

All graduate students in Language Teaching are required to pass a series of examinations in order to fulfill degree requirements.

#### **\* Written Examination**

All students take a six-hour written examination, which consists of three two-hour components. Two of the components include: a) Foreign Language Methodology and Second Language Acquisition; b) Applied Linguistics. In addition, each candidate will be examined in a third field of their choice, either civilization/culture or literature. The two-hour written questions will reflect the coursework completed by each candidate and appropriate texts suggested by faculty represented on the examination committee. These examinations are generally given in November and March.

The MALT examination is graded as follows: High Pass, Pass, and Fail. In order to receive a passing grade, the candidate must attain a Pass in all fields of the written examination. Should a candidate fail any part of the exam and wish second consideration for the degree (s)he must retake the failed section(s). Two failures eliminate the candidate from consideration for the MA in language teaching.

## **Doctorate in Romance Languages & Literatures**

### **Admission Information for Internal Doctoral Applicants**

Students who wish to advance to the doctoral program after completing their MA degree in the Department of Romance Languages and Literatures may do so only after receiving written approval from the MA examining

committee. Alternatively, candidates may not advance to the doctoral program if the examining committee determines, after the MA examination, that their degree is terminal.

Students advancing directly from the MA to the PhD program need to complete only a Change of Degree Program form, which the department submits to the Graduate School.

Students who apply to the doctoral program one semester or more after completing their MA examinations must complete a Request to Re-enroll form and reapply to the doctoral program. They must submit a new departmental application and reference letters. They need not submit a new application to the Graduate School.

### **Specialization**

The Department of Romance Languages and Literatures offers four fields of specialization at the doctoral level: French Literature, Francophone Literature, Spanish Literature or Spanish American Literature. Candidates may elect a secondary field, which entails a minimum of 9 hours of course work within another department, in consultation with their doctoral program committee. This secondary field appears on students' plan of study, but not on their transcript. Students electing a secondary field must complete a PhD examination that will include at least one question devoted to their secondary field.

### **Choosing an Adviser**

All graduate students in the department may choose, or the director of graduate studies will assign them, an academic adviser at the start of their first semester of graduate study. Students must choose an academic adviser by the end of their first semester of graduate study.

### **Qualifying Examination**

All PhD candidates must complete a qualifying examination during their first year in the program to determine their fitness for doctoral study.

### **Exemptions**

The faculty may excuse students from this requirement if those students received their MA degree from this department, earned a grade of High Pass on all sections of their MA examination, and enrolled in the PhD program the semester after fulfilling all requirements for the MA degree.

### **Purpose and Questions**

The qualifying examination provides an opportunity for the faculty to evaluate candidates and advise their future course of study in the program. The examination consists of two questions related to the candidate's course work during the previous and current semester: one question requires analysis of a text; the other, discussion of a general topic (e.g., a literary genre, a particular author, a critical or artistic movement, and so on). The candidate's academic adviser delivers both questions to the candidate three days before a meeting with the examining committee.

### **Exam Meeting with the Committee**

At this meeting, the candidate offers two oral presentations of 20-25 minutes each, based on the two questions. Following these presentations, the candidate responds to comments and questions from the examining committee. At the close of this meeting, the examining committee determines whether the candidate's

performance warrants a grade of Pass or Fail. The examining committee communicates these results to the Graduate School in writing, on a D-1 form bearing the signatures of the candidate and all members of the committee. Students who receive a failing grade must retake this examination before the end of the following semester. A second failure on this examination terminates eligibility for the PhD degree and will result in dismissal from the graduate program.

### **Arranging the Committee**

All arrangements for the qualifying examination are the joint responsibility of the candidate and the candidate's academic adviser. Any tenured or tenure-track member of the faculty may act as academic adviser to students during their first year of doctoral study. The academic adviser need not act as the director of that student's PhD examination or dissertation committee.

### **Submitting Results**

Students who earn a passing grade on their qualifying examination submit the D-1 form to the Graduate School, communicating the results of the examination and formally naming their doctoral committee.

### **Plan of Study & Degree Requirements**

After the qualifying exam, students and their doctoral committee meet to devise a plan of study. The doctoral committee signs and submits this plan of study with the D-2 form to the Graduate School. Students in the PhD program must complete a minimum of 72 hours of course work, which includes a maximum of 30 credit hours earned as part of their MA degree. These credit hours must include course work in language teaching methodology (French/Spanish 7120 or the equivalent) and, if applicable, the candidate's secondary field. Spanish doctoral candidates must also complete course work in Old Spanish.

### **Language Reading Requirements**

A. Before being admitted to the Comprehensive Examination, a candidate must demonstrate reading proficiency in at least two other foreign languages beyond the major language. Students whose secondary field is a foreign literature and who take at least three 7000-level courses in that foreign literature will be considered to have fulfilled the requirement for one of the two foreign languages.

Students may also demonstrate proficiency through successful performance on a test administered by the language department in question. This test, one and one half hours in length, consists of two parts: a) a passage from a critical work to be translated into English, and b) a passage from a literary work accompanied by a series of questions in the target language to be answered in English. Use of a dictionary will be permitted. Students who fail the examination will retake it no sooner than one month after the failed examination.

B. Departmental Requirement in Latin for students studying Medieval and Renaissance Literatures

A student beginning doctoral work in Medieval or Renaissance literatures will satisfy the departmental requirement for one of the two foreign languages mentioned above by reading Latin. The requirement may be fulfilled in one of two ways: (1) by passing a written examination administered by the department; (2) by completing Latin 1100 GH with a grade of B or better. The Latin requirement should be fulfilled by the end of the first year of graduate study.

Candidates should bear in mind that no basic language courses, including Latin, carry graduate credit.

### **Financial Support: Graduate Instructorships**

PhD candidates normally receive 6 semesters of financial support from the university while completing their plan of study and 4 additional semesters of support after completing their PhD examination. This support will customarily take the form of a Graduate Instructorship, though it may take the form of either a Research or Teaching Assistantship.

The minimum teaching assignment for PhD candidates holding instructorships is one course during their first semester of study. Depending on staffing needs, there may be an opportunity to teach two courses per semester. Students writing their dissertation may teach an additional course. International students may never teach more than 2 courses per semester owing to visa restrictions. All PhD candidates must be registered in a minimum of 6 hours of course work for each semester in which they hold an instructorship.

Students may enroll in a maximum of 6 hours per semester of 9080 (Readings) if they have completed all their course work and are preparing for their PhD exams. Students may enroll in a maximum of 12 hours of 9080 (Readings) over the course of their doctoral studies, provided this occurs within their first six semesters of financial support. After passing their PhD examination, students may retain their Instructorships if they enroll in Research (9090) for a minimum of 5 credit hours per year (2 in fall; 2 in spring; 1 in summer).

### **Annual Review**

The faculty and course directors in both major languages meet during the fall and spring semesters to evaluate the teaching and academic performance of all graduate students. The director of graduate studies informs all students in writing of their status at the end of each semester. Students who fail to remove a grade of Incomplete will be limited to teaching one course per semester as long that grade of Incomplete remains on their academic record. This restriction applies to courses other than Research (9090).

### **The PhD Comprehensive Examination**

The comprehensive examination consists of a written and oral section. Before the exam, each student, in consultation with his or her doctoral committee, compiles a reading list based in part on the department's MA reading list and additional titles suggested by the committee members, in light of the student's specialized field. Students and their committee must decide beforehand the areas to be encompassed in the examination. The examination consists of four 3-hour components, three in literature and a fourth in genre, theory or, if applicable, a secondary field. Students must write at least one component of the examination in the language of their major field (Spanish or French). A student must complete the comprehensive exam within a period of 5 years, beginning with the first semester of enrollment as a PhD student.

The committee will assign the examination a grade of High Pass, Pass, Fail or Abstain. Students who pass the written portion of the exam will thereafter take the oral examination as soon as possible. The oral examination will last 1-2 hours, part of which must be in the language of the candidate's specialized field. The oral exam allows candidates to clarify, strengthen or amplify their answers on the written exam. Part of the oral examination also includes a discussion of the student's proposed dissertation — its topic, organization and critical method.

Students must submit a 5-10 page prospectus of their proposed dissertation topic as part of this discussion. After students complete both portions of the exam with a passing grade, the examining committee submits a D-3 form to the Graduate School. Two failures of the examination, in whole or in part, terminate candidacy for the degree and will result in dismissal from the graduate program.

## **Research and Dissertation**

Doctoral students register in 9090 (Research) once they have passed their PhD examinations. They will need to enroll for a minimum of 2 credit hours of 9090 during the fall and spring semesters and 1 hour during the summer semester in order to complete the 12 hours of dissertation credits required for graduation. In addition, the program for the doctoral degree must be completed within five years of passing the comprehensive examination. Individual departments or area programs may stipulate a shorter time period. Doctoral students should complete all requirements for the degree, including the dissertation, within five years of passing the comprehensive examination. The Graduate School extends this deadline in extenuating circumstances. Nonetheless, students must request additional time in writing from the director of graduate studies. Failure to show sufficient progress on the dissertation may result in dismissal from the graduate program. Students should obtain the Graduate School's guidelines for thesis/dissertation writing since the dissertation must conform to the formatting and style specifications established by the Graduate School.

## **Defense**

Candidates and their directors schedule a formal defense of a dissertation after its acceptance by all members of the doctoral committee. This oral defense, conducted by members of the doctoral committee, is open to the public.

## **Courses**

See Romance Language and Literatures in the myZou online system:

Romance Language (RM LAN)  
French (FRENCH)  
Spanish (SPAN)

## Rural Sociology Graduate Programs

College of Agriculture, Food and Natural Resources  
121 Gentry Hall  
573-882-7451  
<http://www.ssu.missouri.edu/ruralsoc/>

The Department of Rural Sociology offers the MS and PhD degrees. The program consists of broad training in sociological theory and methodology with attention to application and policy issues.

### Specializations

Areas of specialization in the department are: sustainable development, community facilitation, and analytical processes

### Financial Aid from the Program

Request for financial support is made by the student at the time of application. Most of the financial support is for research assistantships. Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

### Rural Sociology Faculty

Johanna Reed Adams  
extension assistant professor, PhD, University of Missouri

Rex R. Campbell  
professor emeritus, PhD, University of Missouri.

Chris Fulcher  
research assistant professor, PhD, University of Missouri

Jere L. Gilles,  
associate professor, PhD, Cornell University.

Mary E. Grigsby  
associate professor and chair, PhD, University of Missouri.

Mary Hendrickson  
extension associate professor, PhD, University of Missouri.

Stephen Jeanetta  
extension assistant professor, PhD, University of Missouri – St. Louis.

Mary Simon Leuci  
extension assistant professor, Ed D, University of Missouri.

David O'Brien  
professor, PhD, Indiana University.

Kenneth E. Pigg  
associate professor emeritus, PhD, Cornell University.

J. Sanford Rikoon  
professor, PhD, Indiana University.

Judith I. Stallman  
professor, PhD, Michigan State University.

### **Admission Contact Information**

Carol Swaim  
121 Gentry Hall; Columbia, MO 65211  
573-882-7451

### **Admission Criteria**

Fall deadline: N/A

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
84	570

Minimum GRE score: none set

Minimum GPA: 3.0 for domestic applicants

An undergraduate and/or graduate degree in a social science or equivalent is desirable

Basic understanding of statistics

Students entering with a bachelor's degree normally are admitted into the master's program even if they are going on to a PhD, exceptional students may be admitted to the Masters/PhD program. Up to 12 hours of makeup work may be required for students who have less than adequate undergraduate preparation in the social sciences.

### **Required Application Materials**

[To Graduate School:](#)

All required Graduate School documents

[To the Rural Sociology Program:](#)

Departmental application

GRE score report

3 letters of recommendation

## Master of Science in Rural Sociology

### *Two Master's Degree Options*

#### Professional Master's Degree

The degree is designed for persons who wish to have the training needed to carry out applied research, policy analysis and program evaluation in a government or business. The 39-credit program includes a six- to eight-credit-hour internship.

Specializations there are two options for this degree — community facilitation and analytical processes for community.

#### Course Requirements

Two courses required for both options is Rural Sociology 7325 American Community Studies; and Rural Soc 8510 Research Methodology however students wishing to go on for a PhD must complete Rural Sociology 7130 and Sociology 8100. Students for both options must also take 3 courses out of the Rural Sociology core. The core includes Rural Sociology 7120, 7130, 7370, 7310, 7335, 7446, 8287, 8435, 8444, 8447, 8610 and 9187. Required courses for the community facilitation option are Rural Sociology 7341 and Public Affairs 8610 and 8630. Current required courses for analytical processes option are Rural Sociology 7130 and Agricultural Economics 9310. More details can be found by referring to the on line graduate student handbook at <http://dass.missouri.edu/ruralsoc/grad/>.

#### Practical experience

Each student will have a practical experience through an internship doing applied social science work with a private or a public agency. The type of internship will vary according to student needs and interests, but it should be the equivalent of at least three months of full-time employment. Students will receive six to eight credits for this experience and will prepare a written report of their experience. Previous experience may be substituted for part of this requirement.

#### Master's Degree

A traditional 30-hour master's degree with thesis also is offered. Students choosing the 30-hour MS degree may expect to continue toward a PhD. Required courses for this degree are Rural Sociology 7130 and 8510 and Sociology 8100. These students must produce a research product or thesis.

## Doctorate in Rural Sociology

#### Admission and Recommended Prerequisites

Admission to the PhD program is determined by the admissions and awards committee using the documentation as indicated on About Rural Sociology. Although it is desirable that entering students have a strong background in sociology, students of high merit who do not have such a background are encouraged to apply. Such applicants may be required to take such graduate-level work as is necessary to remedy deficiencies in their background. .

### **Doctoral Degree Requirements**

The focus of the doctoral program in Rural Sociology is sustainable development. Besides the three core of courses for listed for the traditional masters degree above all graduate students, students in the PhD program take a core consisting of nine courses listed in the Rural Sociology Graduate Handbook -- <http://dass.missouri.edu/ruralsoc/grad/> and complete an area of area of professional concentration of a minimum of 12 credit hours that is normally an MU graduate certificate or graduate minor.

### **Courses**

See Rural Sociology (RU SOC) in the myZou online system.

## Russian & Slavonic Studies Master of Arts

College of Arts and Science  
451 Strickland Hall  
573-882-4328

<http://grs.missouri.edu/degprogs/russiangradstudies.html>

The Master of Arts program in Russian and Slavonic Studies offers advanced study in the literature and culture of Russia. Course offerings are primarily in literature, but reflect a variety of interrelated fields, including religion, philology, intellectual history, and philosophy. In two years of coursework students receive training in the theory and history of Russian literature and culture in general, as well as an introduction to the history of the language.

### Careers

Students may go on to careers in a number of fields, including government work and international business; they will also be prepared to continue their studies at the doctoral level.

### Facilities and Resources

The library of the University of Missouri is particularly strong in Russian history and literature. We are also part of a consortium that provides quick access to the holdings of many other major academic and public libraries.

### Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

In this program, qualified graduate students may have the opportunity to work as teaching assistants in language, literature or civilization courses.

## Russian Faculty

Gennady Barabtarlo  
professor of Russian; PhD, University of Illinois.

Timothy Langen  
associate professor of Russian; PhD, Northwestern University.

Martha Kelly  
assistant professor of Russian; PhD, Stanford University.

Nicole Monnier  
associate teaching professor of Russian; PhD, Princeton University.

## Admission Contact Information

Professor Gene Barabtarlo  
451 Strickland Hall  
Columbia, MO 65211  
573-882-4328

Send email to Dr. Barabtarlo: [barabtarlog@missouri.edu](mailto:barabtarlog@missouri.edu)

## Admission Information

Before applying, please send an informal letter of intent or inquiry to Dr. Barabtarlo at either the physical address or e-mail address above.

## Admission Criteria

Fall deadline: March 1 (domestic); February 1 (international)  
Spring deadline: September 1 (domestic); May 1 (international)

Minimum GPA: 3.0 in last 60 hours  
Undergraduate major or minor in Russian or equivalent  
Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

Note: No language other than English and Russian is required for admission.

## Required Application Materials

### [To the Graduate School:](#)

All required Graduate School documents

### [To the Program:](#)

2 letters of recommendation

## Degree Requirements

Students must complete a minimum of 30 hours of graduate-level courses with a GPA of B or higher. In accordance with Graduate School policy, no fewer than 24 of these must be Russian and Slavonic Studies courses at the 7000 or 8000 level, with at least 12 at the 8000 level. In addition, students must demonstrate adequate language skills in English and Russian.

A master's thesis is optional.

## Courses

See Russian (RUSS) in the myZou online system.

## Social Work Graduate Programs

College of Human Environmental Sciences  
724 Clark Hall  
573-882-6206  
<http://ssw.missouri.edu/index.shtml>

### About the School of Social Work

For over ninety years, social work education has been offered to students at Missouri's premier public institution. The school is proud of its grass roots history: an early pioneer of social work education in 1906, a founding member of the original accrediting body for social work education in 1919, an institution advancing research and scholarship throughout the 20th century, and finally, to its role as an innovator in doctoral education, with a nationally distinctive PhD program emphasizing state social policy.

The mission of the MU School of Social Work is to promote leadership for social and economic justice by preparing students for professional excellence and leadership in practice, research, and policy. Within the context of a land grant institution, the mission of the School of Social Work reflects the University of Missouri's tightly interlocked missions of teaching, research, outreach, and economic development.

### Degrees Offered

- Master of Social Work (MSW)
- Doctorate of Philosophy in Social Work Program (PhD)

### Careers

The nation faces a critical shortage of qualified personnel who possess the rigorous research skills needed to develop, plan, and evaluate social work interventions and the structure of social services. The Master of Social Work (MSW) Program prepares graduates for leadership in professional social work practice within the areas of Advanced Clinical Social Work Practice or Policy, Planning and Administration in Human Services. Doctoral programs in social work are the major resource for social work researchers and scholars. The rapid growth and development in new social work undergraduate and graduate programs throughout the country has also increased the demand for doctoral social work faculty. In recent years, there have been 400-500 doctoral faculty vacancies advertised annually in schools of social work, while the number of graduates has remained at 250-300 per year, with one hundred of those graduates seeking non-academic positions.

### Social Work Faculty

David L. Albright  
assistant professor; M.S., MSW, PhD, Florida State University

Kim Anderson  
associate professor; PhD, University of Kansas.

Kalea Benner  
assistant teaching professor; PhD, director of undergraduate studies, University of Missouri.

Kelli E. Canada  
assistant professor; MSW, PhD, University of Chicago

Suzanne Cary  
assistant clinical professor; MSW, University of Missouri.

Angela Curl  
assistant professor; PhD, Case Western Reserve University.

Dale Fitch  
assistant professor; PhD, University of Texas at Arlington.

Tammy L.W. Freelin  
clinical instructor, student services coordinator; MSW, University of Missouri.

Rebekah Freese  
clinical instructor; MSW, University of Missouri

Colleen Galambos  
professor; PhD, Catholic University of America.

Linda Hillemann  
clinical instructor, southeast program coordinator; MSW, University of Missouri.

Candace Iveson  
clinical instructor; MSW, Washington University.

Michael J. Kelly  
professor, director of the doctoral program, PhD, University of Texas-Austin.

Martha Markward  
associate professor; PhD, University of Illinois at Urbana-Champaign.

Dianne J. Orton  
clinical assistant professor; DPhil, Stellenbosch University

Clark Peters  
assistant professor; PhD, University of Chicago.

Marjorie R. Sable  
director, professor; DrPH, University of North Carolina-Chapel Hill.

Carol A. Snively  
assistant teaching professor, director of MSW program & off campus program; PhD, The Ohio State University.

Aaron M. Thompson  
assistant professor; MSW, PhD, University of North Carolina

J. Wilson Watt  
associate professor; PhD, University of Illinois-Chicago.

Karen Woodbury  
clinical instructor; MSW, northern program coordinator, University of Missouri.

Dong Pil Yoon  
associate professor; PhD, University of Illinois at Urbana-Champaign.

Mansoo Yu  
assistant professor; PhD, Washington University.

## **Master of Social Work**

### **Admission Contact Information**

Crystal Null ([nullc@missouri.edu](mailto:nullc@missouri.edu))  
724 Clark Hall; Columbia, MO 65211  
573-884-9385  
<http://ssw.missouri.edu/msw.shtml>

### **About the MSW Program**

#### **MSW Program Mission Statement**

The University of Missouri's Master of Social Work (MSW) Program prepares competent, effective and ethical social work professional leaders for social change. The MSW Program emphasizes a commitment to enhancing human well-being by alleviating social problems, embracing diversity and promoting social and economic justice with systems of all sizes through advanced clinical social work practice and policy planning and administration in human services

The MSW program prepares students to promote social and economic justice that responds to the broad economic, social, and cultural needs of the public and private sectors. Advanced social work clinical practice skills and/or advanced social administrative and policy advocacy practice skills prepare students to practice in both urban and rural settings throughout Missouri, as well as other states across the nation. The MSW Program also provides opportunities for students to apply their learning to international settings.

The School educates MSW social work practitioners to recognize the need for and facilitate social change through the empowerment of individuals, families, groups, organizations and communities. The rapidly changing state landscape compels Missouri based MSWs to expand and improve their practice skills related to serving emerging and growing populations.

The MSW Program is fully accredited by the Council on Social Work Education, of which the School of Social Work is a charter member.

Preparation for professional leadership encompasses two major components:

## Foundation

Develops knowledge and skills related to social interaction, human development, community dynamics, social policy and societal values applicable to generalist social work practice.

### Foundation Courses

7710 Social Policy and Service Delivery in Social Work	3 credits
7720 Foundations of Human Behavior	3 credits
7730 Direct Practice	3 credits
7740 Community & Organization Dynamics	3 credits
7760 Foundations of Social Justice	3 credits
7952 Research Methods and Design in Social Work	3 credits
7971 Graduate Field Practicum I	6 credits

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Total = 24 credits

### Concentrations

The MSW program offers two concentrations: Advanced Clinical Practice and Policy, Planning and Administration (PP&A). Within these concentrations, students have the opportunity to create a plan of study based on their individual interests and professional goals. Decisions regarding their chosen concentration are made by students in consultation with faculty advisors. A brief description of the two concentrations is as follows:

*Advanced Clinical Social Work Practice:* includes strategies of clinical intervention with socially and economically disadvantaged individuals, families, and small groups in a variety of health, mental health, family and children services, and senior citizen agencies.

#### Concentration Courses: Clinical

----- Advanced Clinical Selective ( <i>choose 1 from those offered</i> ) *	3 credits
----- Advanced Policy Elective ( <i>choose 1 from those offered</i> ) *	3 credits
----- Advanced Diversity Elective ( <i>choose 1 from those offered</i> ) *	3 credits
----- Elective ( <i>must be graduate level; could be an additional Diversity Elective or Policy Elective course</i> ) *	3 credits
7770 Strategies of Clinical Social Work Intervention	3 credits
7820 DSM IV & Psychopathology: A Social Work Perspective	3 credits
8952 Evaluative Research in Clinical Social Work Practice	3 credits
8970 Integrative Professional Practice Seminar	3 credits
8971 Graduate Field Practicum II	12 credits

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Total = 36 credits

*Policy, Planning and Administration in Human Services:* includes intervention strategies that effect change at the organizational, interagency, community, and societal levels to advance social and economic justice for consumers of social and human services and to empower practitioners within those agencies.

#### Concentration Courses: Policy, Planning & Administration

----- Advanced Policy Elective ( <i>choose 1 from those offered</i> ) *	3 credits
----- Advanced Diversity Elective ( <i>choose 1 from those offered</i> ) *	3 credits
----- Elective ( <i>must be graduate level; could be an additional Diversity Elective or Policy Elective course</i> ) *	3 credits
7780 Fundamentals of Social Work Administration	3 credits
7920 Advanced Foundations of Human Behavior for Admin.	3 credits
8350 Management of a Social Agency	3 credits

8953 Evaluative Research in Clinical Social Work Practice	3 credits
8970 Integrative Professional Practice Seminar	3 credits
8971 Graduate Field Practicum II	12 credits

Total = 36 credits

*\*Please note:* Clinical electives, policy electives, diversity electives, and other elective courses offered will vary from year to year.

## Application and Admission Information

Fall deadline: January 15  
 Spring deadline: September 15  
 Summer deadline: January 15

### Admission Criteria

Minimum GPA: 3.0  
 Minimum TOEFL scores:

Skill	Internet-based test (iBT)	IELTS
Reading	21	6.5
Listening	22	6.5
Speaking	26	8
Writing	23	6

Bachelor's degree from an accredited college or university with the applicant's undergraduate transcript reflecting a sound liberal arts foundation, including courses in the humanities, as well as in the social and behavioral sciences.

**Prerequisites:** All MSW applicants must complete an approved college level statistics course with a grade of C- or higher before they will be accepted to enroll in the MSW program. SW 4310 is the recommended course for University of Missouri students. The following University of Missouri courses are also approved and may be taken in lieu of SW4310 Statistics 1200, Statistics 1300 and ECP4170. Statistics courses completed at other academic institutions may substitute for University of Missouri statistic courses, pending submission of official transcript and approval by the MSW Program Director. Completion of the statistics course prior to application submission is preferred and strongly recommended. If an applicant is enrolled in a statistics course at the time of application and accepted into the MSW Program, the acceptance will be "pending successful completion of the approved statistics class.

Priority admission deadline for Regular Standing Applicants: January 15. A student qualifies for Regular Standing Admission if s/he has an undergraduate degree in any field other than Social Work. Any applicant who applies after the priority deadline will be considered on the rolling admission cycle until April 15.

Priority admission deadline for Advanced Standing applicants: January 15 (for summer admission), September 15 (for spring admission). An applicant qualifies for Advanced Standing admission if they have a bachelor's degree in Social Work earned within the last seven (7) years. Any Advanced Standing applicant who applies after the priority deadline of January 15 for summer admission will be considered on a rolling admission cycle until April 15.

Any Advanced Standing applicant that applies after the priority deadline of September 15 for spring admission will be considered on a rolling admission cycle until November 15.

Read more about Regular vs. Advanced Standing below.

### **Required Application Materials**

#### [To the Graduate School:](#)

All required Graduate School documents

#### [To the MSW Program:](#)

Departmental application

Personal statement (see department instruction)

*Three letters of reference* from persons who can address the applicant's intellectual ability and interpersonal skills, potential for graduate education, and potential for professional social work practice through observation in an educational or work (paid or volunteer) setting. Letters of reference should not be submitted from friends or family

### **Financial Aid from the Program**

Scholarship opportunities are available for full-time and part-time program applicants who meet the early application deadline. A separate Scholarship Application is available on the department website. Submission of the Scholarship Application is due by early application deadline.

### **Course Format**

On Campus MSW Program courses are primarily offered in-person. A few foundation, concentration & elective courses are offered online through Blackboard, learning management system licensed to the University of Missouri for online courses. An occasional elective course is offered in a combined format (ITV and in-person), with the on-campus MSW student attending in-person while the course is broadcast to the Off Campus MSW Program students through Interactive Television (ITV).

Traditional in-person courses offered to the Off Campus MSW Program are held on the campuses of collaborating regional universities for these programs: Southeast Missouri State University (SEMO), Missouri Western State College and Northwest Missouri State University in northwest Missouri and Truman State University in northcentral Missouri.

The Off Campus program also collaborates with a number of offices throughout the state to provide courses through Interactive Television (ITV). Other courses are offered online through Blackboard, a learning management system licensed to the University of Missouri for online courses. Elective courses offered online or ITV elective courses may have both on and off campus students enrolled in a common section. When this occurs with courses offered through ITV, on campus students attend the ITV classroom where the class is originated.

Practice classes that focus on the development of relationship building skills and/or teach a specific clinical social work technique are offered only through an in-person format. Courses that focus on theory, policy &/or research may be offered online.

### **Regular Standing: Non-Social-Work Bachelor's**

The regular 60-credit hour degree is appropriate for students who have undergraduate degrees other than accredited social work degrees. The school admits full-time students to the regular 60-credit hour program at the beginning of the fall semester only. Part-time students are admitted at the beginning of fall and spring semester.

### **Advanced Standing: Bachelor's in Social Work (BSW)**

Students who have graduated within the past seven years from a baccalaureate social work program accredited by the Council on Social Work Education may be eligible for the Advanced Standing Program, which is an accelerated 39-credit hour degree.

### **Starting Dates**

Students admitted to the Regular Standing Program are admitted either in fall semester (full-time or part-time study) or spring semester (part-time study only). Students admitted to the Advanced Standing Program are admitted either in the spring or summer session. Advanced standing students in the policy, planning and administration concentration must enter in the spring semester.

### **Length of Study & Satisfactory Progress**

Full-time Regular Standing students take 15 credits each semester and graduate in two years (4 semesters of study). Full-time Advanced Standing students take 3-5 classes each semester (9-15 credits) and graduate in 12-17 months (3 semesters of study). Part-time Regular Standing students take 2-3 classes (6-9 credits) every semester, including summer, and graduate in three years (9 semesters of study). Part-time Advanced Standing students take 2-3 classes (6-9 credits) every semester, including summer, and graduate in two years (6 semesters of study). All students are full-time during their last semester while completing block placement. All students must complete at least eight hours per academic year to maintain a satisfactory rate of progress.

### **Graduate Certificate in Military Social Work**

The School of Social Work offers graduate certificates in Military Social Work and in Gerontological Social Work.

The Graduate Certificate in Military Social Work is designed to expand the pool of professionals who are qualified to work in settings with military personnel, veterans, and their families. The Certificate focuses on clinical practice strategies of social work intervention with military personnel and their families to improve the mental health and health of this population.

This certificate is available both to students enrolled in the MU School of Social Work Masters of Social Work (MSW) Program as part of their graduate training as well as a stand-alone entity to civilian graduate level clinical social work practitioners who wish to augment their knowledge and skills in this area. Only Clinical MSWs and MSW Clinical students will be accepted to the Military SW Graduate Certificate Program. Approval of the MSW Program Director is required for admission into the graduate certificate program.

Because all of the Military Social Work Graduate Certificate courses fulfill other requirements of our MSW program, a student can conveniently earn the Military SW Graduate Certificate while completing their MSW. No additional coursework is required.

The Military SW Grad Certificate consists of 12 credit hours, including three required courses and one elective. The required courses include: 1) "Military Culture: Issues for Helping Professionals" (*counts as a diversity*

*elective*); 2) "Military Social Work" (*counts as a free elective*); and 3) "Trauma Practice and Crisis Intervention" (*counts as a clinical selective*). For the fourth class, students will choose either "Disability Rights Advocacy" or "Organizational Issues in Child Welfare" (*counts as a policy elective*). The assignments in all classes will be focused on Military SW issues.

During the final semester of the MSW Program, the full-time block practicum experience 40 hours/week (680 total hours) is arranged at a setting where students will gain skills practicing with military personnel, veterans or their families. The Director of Field in conjunction with the Director of the Graduate Certificate in Military Social Work works with students to choose a practicum setting that fits SSW requirements and student interests. Practicing MSWs only complete 12 hours of coursework and are not required to complete an additional practicum experience.

For additional information about the Graduate Certificate in Military Social Work, please contact Dr. David L. Albright at [albrightd@missouri.edu](mailto:albrightd@missouri.edu).

### **Graduate Certificate in Gerontological Social Work**

The Graduate Certificate in Gerontological Social Work at the University of Missouri is designed to expand the pool of professionals who are qualified to work in settings with older adults and their families. The certificate focuses on practice strategies of social work intervention from micro, mezzo, and macro perspectives.

This certificate will be available to students enrolled in the MU School of Social Work master's program as part of their graduate training as well as a stand-alone certificate to graduate level clinical social work practitioners and graduate level policy and administration social work practitioners who wish to augment their knowledge and skills in this area. Approval of the MSW Program Director and Committee, and Director of the Graduate certificate in Gerontological Social Work is required for admission to the certificate program.

Participants in the Gerontological Social Work Certificate program build awareness and expertise for work in settings that serve older adults and their families. Participants are trained in micro, mezzo, macro and clinical strategies known to be effective in work with older adults and their families. An interdisciplinary, multi-level emphasis will be provided in the program since a large component of elder care is the coordination and management of services provided by various disciplines. Course work will utilize a bio-psycho-social-cultural perspective emphasizing the ecological perspective, Lawton's theory of environmental press, resiliency, and the functional age model of family work. In addition, students will build awareness of aging policies and services, and policies that impact persons with disabilities and women.

As a result of earning the Gerontological Social Work Graduate Certificate, practicing MSW's or Post-MSW degree practitioners can expect enhanced employability due to the development of new skills that respond to growing societal need. Current MSW students benefit from the graduate certificate by completing a concentrated course of study on a population group and obtaining specialty training with population/services needing graduate level social workers.

Because all of the Gerontological Social Work Graduate Certificate courses fulfill other requirements of our MSW program, a current MSW student can conveniently earn the Gerontological SW Graduate Certificate while completing their MSW. No additional coursework is required.

The Gerontological SW Grad Certificate consists of 12 credit hours, including two required courses, one elective and one interdisciplinary course. The required courses include: 1) "Helping Strategies with

Older Adults " (*counts as a diversity elective*); and 2) " Policies and Services for Older Adults " (*counts as a policy elective*).

For the third course, clinical MSWs choose between "Family Treatment", "Resiliency and Solution Focused Practice", "Client Case Management, Networking, and Advocacy", and " Narrative Approaches to Social Work Practice " (*all count as a clinical selective*). Policy, Planning and Administrative MSWs choose between "Women, Poverty and Mental Health" and " Disability Rights Advocacy". For the fourth class, students will choose from a variety of acceptable interdisciplinary courses.

During the final semester of the MSW Program, the full-time block practicum experience 40 hours/week (680 total hours) is arranged at a setting where students will gain skills practicing with older adults. The Director of Field in conjunction with the Director of the Graduate Certificate in Gerontological Social Work works with students to choose a practicum setting that fits SSW requirements and student interests. Practicing MSWs only complete 12 hours of coursework and are not required to complete an additional practicum experience.

For additional information about the Graduate Certificate in Military Social Work, please contact Dr. Colleen Galambos at [galambosc@missouri.edu](mailto:galambosc@missouri.edu).

## **Doctorate in Social Work**

### **Admission Contact Information**

Shannon Mezzanotte ([mezzanottes@missouri.edu](mailto:mezzanottes@missouri.edu))  
724 Clark Hall; Columbia, MO 65211  
573-884-1438

### **About the Program**

The Doctor of Philosophy (PhD) program in social work focuses on research that informs social welfare policy and practice. It is designed to prepare scholars for research, teaching and program development positions in academic and professional social work practice and policy settings.

### **Plan of Study**

The PhD program is available to both persons with a Masters of Social Work (MSW) degree and those with other master's degrees. The curriculum consists of a minimum of 51 post MSW semester credit hours or, for applicants without an MSW, 63 hours as explained below. The curriculum is divided among three distinct but highly interrelated elements designed to complement one another in assisting students to achieve the competencies expected of a graduate of this program. A core of social work courses provides the foundation in the traditions and knowledge in the profession and exposure to state-of-the-art research and techniques for the 21st century. Electives from the broad spectrum of social and behavioral sciences offering available through MU departments provide students with the opportunity to design an individualized plan of study that capitalizes on their unique interests and talents. A strong regimen of research methodology, theory, and policy analysis are designed to prepare students for use of both current and emerging methods of scientific inquiry.

### **Financial Aid from the Program**

Scholarship opportunities are available for full-time program applicants who meet the application deadline. Graduate teaching and research assistantships are also often available. Some forms of support require additional

forms from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program Web site or ask the program contact for details.

**Admission Criteria**

Fall deadline: January 15

Minimum GPA: 3.0; 3.5 in graduate study

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
80	550

An MSW or related master’s is required. Applicants without the MSW must take a minimum of 12 credit hours of MSW course work. This requirement may be waived for applicants with additional graduate work. Minimum of two years post-master’s practice experience encouraged

These criteria are used flexibly to assess the applicant’s potential for study and research in this program.

**Required Application Materials**

[To the Graduate School:](#)

All required Graduate School documents

[To the PhD in Social Work Program \(either via the grad schools online application system or mailed in hard copy\):](#)

- 3 letters of recommendation
- Resume
- Writing proficiency sample
- Personal statement
- A personal interview is required, and if possible, will be arranged at MU. A Skype interview may be utilized in some cases.

**Courses**

See Social Work (SOC WK) in the myZou online system.

# Sociology Doctoral Graduate Program

College of Arts and Science  
312 Middlebush Hall  
573-882-8331

<http://sociology.missouri.edu/graduate/requirements.shtml>

## About the Program

The Department of Sociology engages students in research, utilizing qualitative and quantitative research methodologies, in order to analyze issues and problems affecting societies. In our PhD program, the core of graduate training is in classical and contemporary theory, and research methods including quantitative, historical, and feminist methodologies, and interviews and field work.

## Specializations

Students may focus their studies on any *two* of the following graduate program areas:

- Culture and Identity
- Deviance and Social Control
- Health, Aging, and Environment
- Political Economy, Power, and Movements
- Social Inequalities

Within these program areas, students conduct research on such topics as gender, health-care policy, popular culture, hunger, race, criminology, sexualities, and elites and protest movements in the global economy.

## Financial Aid from the Program

Financial support for students includes teaching and research assistantships, both of which include remission of educational fees. International students cannot be awarded teaching assistantships until they have completed one semester of residence at MU and pass a test of spoken English.

## Sociology Faculty

Jaber F. Gubrium  
chair, professor, PhD, Wayne State University. Aging, narrative, qualitative methods, theory.

Edward E. Brent  
associate chair, professor, PhD, University of Minnesota. Methodology, statistics, computer applications.

John F. Galliher  
professor, PhD, Indiana University. Criminology, law, professional ethics.

Ibitola O. Pearce  
professor, PhD, Brown University. Medical sociology, race/class/gender, development.

Wayne Brekhus  
associate professor, PhD, Rutgers University. Theory, culture, sexuality.

Scott Brooks

associate professor, PhD, University of Pennsylvania. Race and ethnicity, sports and gender, urban sociology

Joan Hermsen

associate professor, PhD, University of Maryland-College Park. Sex and gender, stratification/mobility, family.

Victoria Johnson

associate professor, PhD, University of California-Davis. Historical comparative methods, social movements, labor.

Clarence Y.H. Lo

director of graduate studies, associate professor, PhD, University of California-Berkeley. Political, social movements, urban, qualitative/historical methods.

Amit Prasad

associate professor, PhD, University of Illinois at Urbana-Champaign. Sociology of science and medicine.

Eric Brown

assistant professor, PhD, University of California-Berkeley. Race and ethnicity, urban sociology, and social stratification.

Eileen E.S. Bjornstrom

assistant professor, PhD, The Ohio State University. Medical sociology, urban sociology, statistics, quantitative methodology.

Erica Morales

assistant professor, PhD, UCLA. Race, gender, and class; sociology of education; Latina/os; qualitative methods

Srirupa Prasad

assistant professor, PhD, University of Illinois at Urbana-Champaign. Gender studies, medical sociology, transnational studies.

Jason Rodriguez

assistant professor, PhD, University of Massachusetts, Amherst. Health and aging, occupations and professions, sociology of emotions

Rebecca R. Scott

assistant professor, PhD, University of California-Santa Cruz. Gender, race and class, environmental inequality, feminist ethnography.

## **Doctorate in Sociology**

### **Admission Contact Information**

Graduate Admissions Coordinator (oakesm@missouri.edu)

312 Middlebush Hall

Columbia, MO 65211

573-882-8331

## Admission Criteria

Fall deadline: January 15

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
61	500

Minimum GRE score: case-by-case

15 hours of undergraduate sociology with a grade of B or better, including one course in sociological theory and a basic statistics course

## Required Application Materials

### To the Graduate School:

- All required Graduate School documents

To the Sociology Program: <http://sociology.missouri.edu/graduate/admission.shtml>

- GRE score report
- Departmental application
- 3 letters of recommendation
- Statement of research interests
- Copy of Graduate School application (needs to be printed out when done online)
- Copies of transcripts (it is helpful to have unofficial copies sent to the department)
- One page Application for Financial Support
- Research paper, master's thesis, senior thesis, or term paper

## PhD Plan of Study

The PhD program requires a minimum of 30 hours of course work, including 8100 and two additional seminars in sociological theory (9187 and 9487) and 8120, 7120 (or its equivalent), 8130, and two seminars in sociological research methods (7110, 8187, 9287, 9288, 9687, or 9837), plus six courses targeted to the student's specialty interests.

## Exams and Research

All students are required to submit a research paper no later than their fourth semester of residence. Students with a Master's Thesis in sociology can fulfill this requirement as early as their first semester. At least eight months before the date on which they expect to complete the degree, candidates must pass a comprehensive examination centered on two of the five graduate program areas. Students must prepare and successfully defend a dissertation that makes an original contribution to the discipline.

## Courses

See Sociology (SOCIOL) in the myZou online system.

<https://myzou.missouri.edu/psp/prd/?cmd=login&languageCd=ENG&>

## Soil, Environmental & Atmospheric Sciences Graduate Programs

School of Natural Resources  
302 Anheuser-Busch Natural Resources Building  
573-882-6301  
<http://www.snr.missouri.edu/seas/academics/graduate-program.php>

Soil, environmental, and atmospheric science graduate programs are designed to prepare students for professional careers in research, teaching or practical application of the principles of soil, environmental and atmospheric sciences.

### Recommended Preparation

Appropriate undergraduate majors in preparation for graduate studies in soil, environmental and atmospheric sciences include: agronomy, atmospheric science, biochemistry, biology, biogeochemistry, botany, chemistry, earth science, civil and environmental engineering, environmental science, forestry, geosciences, hydrology, mathematics, microbiology, physics, soil science, and watershed management.

### Degrees Offered

- Master of Science in Soil, Environmental & Atmospheric Sciences
- Doctor of Philosophy in Soil, Environmental & Atmospheric Sciences

### Degree Specializations

#### *Atmospheric Science*

Atmospheric science students participate in an area of research such as dynamic and physical meteorology, general circulation, global climate change, severe storms, remote sensing and applied climatology with emphasis on environmental and socioeconomic impacts.

The program has a specialized computer data library that includes extensive long-term global and local observational records to support thesis and dissertation research. There are opportunities for joint research programs with the National Center for Atmospheric Research.

#### *Environmental Science*

Environmental science students may participate in environmental quality, hydrology, watershed management, and water quality emphasis areas. State-of-the-art equipment for chemical, biological and physical analysis of water and earth materials is available for use in laboratories maintained by the SEAS Department in the School of Natural Resources.

The program has a working scale-nested watershed study spanning native lands as well as agricultural, and urban environments, thus supplying an excellent outdoor teaching and research laboratory.

### *Soil Science*

Soil science students may participate in one of the following emphasis areas: environmental quality, pedology, soil chemistry and biochemistry, soil microbiology, soil physics and conservation, soil management, or soil fertility and plant nutrition.

State-of-the-art equipment for chemical, biological and physical analysis of soils is available for use in laboratories maintained by the SEAS Department in the School of Natural Resources. Access to additional chemical analysis equipment, computing facilities, digital imaging equipment, field facilities, greenhouse space, radiochemistry and scanning electron microscopes is available within the University of Missouri.

### **Financial Aid from the Program**

Check the program website (<http://www.snr.missouri.edu/seas/academics/graduate-program.php>) or contact the program for details on scholarships or graduate assistantships that may be available.

## **Soil, Environmental and Atmospheric Sciences Faculty**

Anthony R. Lupo  
chair, professor, PhD, Purdue University. Atmospheric dynamics.

Peter P. Motavalli  
director of graduate studies, professor, PhD, Cornell University. Soil fertility and plant nutrition.

Stephen H. Anderson  
professor, PhD, North Carolina State University. Environmental soil physics.

Clark J. Gantzer  
professor, PhD, University of Minnesota. Soil conservation.

Neil I. Fox  
associate professor, PhD, University of Salford-United Kingdom. Remote sensing and hydrology.

Patrick S. Market  
associate professor, PhD, Saint Louis University. Synoptic and mesoscale meteorology.

Randall J. Miles  
associate professor, PhD, Texas A&M University. Soil genesis and mineralogy.

Keith W. Goyne  
associate professor, PhD, The Pennsylvania State University. Environmental soil chemistry.

Jason A. Hubbart  
assistant professor, PhD, University of Idaho. Hydrologic science and water quality.

Patrick E. Guinan  
extension assistant professor, PhD University of Missouri. Climatology

Ranjith P. Udawatta  
research associate professor, PhD, University of Missouri. Water quality and watershed management.

Robert J. Kremer  
adjunct professor, PhD, Mississippi State University. Soil microbiology.

E. John Sadler  
adjunct professor, PhD, Texas A&M University. Soil and water management.

Peter C. Scharf  
adjunct professor, PhD, Virginia Polytechnic Inst. & Univ. Soil fertility.

W. Gene Stevens  
adjunct professor, PhD, Mississippi State University. Soil fertility.

Christopher K. Wikle  
adjunct professor, PhD, Iowa State University. Statistical meteorology.

Frieda Eivazi  
adjunct associate professor, PhD, Iowa State University. Soil biochemistry and fertility.

Newell R. Kitchen  
adjunct associate professor, PhD, Colorado State University. Soil fertility.

John Yang  
adjunct associate professor, PhD, University of Missouri. Soil chemistry.

James O. Adegoke  
adjunct assistant professor, PhD, Pennsylvania State University. Satellite climatology.

Claire Baffaut  
adjunct assistant professor, PhD, Purdue University. Hydrology and soil conservation.

Robert N. Lerch  
adjunct assistant professor, PhD, Colorado State University. Soil biochemistry.

Fred J. Young  
adjunct assistant professor, PhD, University of Missouri. Soil pedology

## **Master of Science in Soil, Environmental & Atmospheric Sciences**

### **Admission Contact Information**

Dr. Peter Motavalli, director of graduate studies (<mailto:motavallip@missouri.edu>)  
302 Anheuser-Busch Natural Resources Building  
Columbia, MO 65211  
573-884-3212

### **Admission Criteria**

Deadline: two months prior to the start of the academic semester for which the applicant is applying

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
71	530

Minimum Academic IELTS overall score: 5.5

Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative	Analytical
Prior to August 1, 2011	1100	3.5
On or After August 1, 2011	302	3.5

Completion of a BS degree

Undergraduate GPA of 3.0 for the last 60 hours of coursework

- *Atmospheric science applicants:* undergraduate program should include integral calculus and one year of college physics.
- *Environmental science applicants:* undergraduate program should include general and organic chemistry, introductory biology, calculus, geology, physics, and ecology.
- *Soil science applicants:* completed courses in general and organic chemistry, calculus, geology and physics. Inadequacies in courses must be remedied through additional course work immediately after admission.

Starting in 2010, all applications and supporting application materials for graduate admission into the SEAS Department must be submitted to the [Graduate School](#) using the [Apply Yourself online application system](#).

**Required Application Materials:**

- Letter of self-evaluation
- GRE score report
- Three letters of recommendation
- Official transcripts
- Official scores from TOEFL or another approved test of English proficiency is required from international applicants.

Send all required documents in electronic format to the [Graduate School](#) using the [Apply Yourself online application system](#).

**MS Degree Requirements**

The degree program must include 30 hours of graduate credit, with at least 15 hours of these being in 8000- or 9000-level courses. Not more than 12 hours of the minimum 30 hours are permitted for research, problems, special investigations and special readings. A minimum of one credit hour of graduate seminar must be included in each student's graduate program.

All students enrolled in graduate programs are required to participate in a supervised teaching activity.

All students are required to attend a workshop on ethics and professionalism.

Students must maintain a GPA of 3.0 (A=4.0) in all course work presented for the degree.

For an atmospheric science emphasis, appropriate atmospheric science courses must be selected and approved in consultation with the student's advisor and graduate thesis committee.

For a soil science emphasis, at least 12 credit hours of soil science courses at the 7000, 8000, and 9000 levels, exclusive of problems and thesis research, must be included in the student's graduate program.

For an environmental science emphasis, at least six credit hours of environmental science courses at the 7000, 8000, and 9000 levels, exclusive of problems and thesis research, must be included in the student's graduate program. To meet the six credit hour requirement, courses must be selected from the following list of approved environmental science courses:

- Atmospheric Science 7520 – Environmental Biophysics
- Environmental Science 7305 – Environmental Soil Physics
- Environmental Science 7306 – Environmental Soil Physics Laboratory
- Environmental Science 7312 – Environmental Soil Microbiology
- Environmental Science 7318 – Environmental Soil Chemistry
- Environmental Science 7320 – Hydrologic and Water Quality Modeling
- Environmental Science 8400 – Solute Transport in the Vadose Zone
- Environmental Science 8500 – Chemistry of the Vadose Zone
- Forestry 7390 – Watershed Management and Water Quality
- Forestry 8390 – Physical Hydrology
- Soil Science 7308 – Soil Conservation
- Soil Science 7313 – Soil Fertility and Plant Nutrition
- Soil Science 7314 – Soil Fertility and Plant Nutrition Laboratory
- Soil Science 7320 – Genesis of Soil Landscapes
- Soil Science 9414 – Advanced Soil Fertility
- Soil Science 9422 – Pedology

To complete the environmental science emphasis, an additional six credit hours must be selected from courses listed above or from the following departments: biochemistry, biological engineering, biological sciences, chemical engineering, chemistry, civil and environmental engineering, fisheries and wildlife sciences, forestry, geography, geological sciences, and natural resources. Selection of these courses will be determined in consultation with faculty members serving on a student's thesis committee.

### **Thesis**

A thesis, which is a research report of original research on a specialized soil, environmental or atmospheric science problem conducted by the student, must be presented to the student's graduate committee and successfully defended.

### **Integrated B.S./M.S. Program**

Undergraduate students enrolled in the Department of Soil, Environmental and Atmospheric Sciences (SEAS) are eligible to apply for the integrated degree program in soil, environmental and atmospheric sciences that will enable outstanding undergraduates to obtain a B.S. and a M.S. (thesis required) after the successful completion of both degree requirements in five years. The program provides a challenging curriculum that will include opportunities and training in undergraduate and graduate-level research and prepare the student for a successful professional career. Increasingly, employers in competitive technical fields are looking for highly-motivated

students with graduate training to meet the demands for their work force and this program will provide talented students with a unique and expedited pathway to develop their educational background and professional skills.

### **Overview**

Undergraduate students in SEAS interested in the program will be encouraged to participate in an undergraduate research program during the summer of their sophomore year. They will apply and then be selected to enter this program during the second semester of their junior year. Selected students will need to meet admission requirements for the Graduate School. Once selected the students will initiate work on their research during the summer of their junior year. During their senior year they will complete their undergraduate credits and can take up to 12 graduate-level credits (courses with numbering 7000 or higher) under MU's dual enrollment program. After completing the B.S. degree, students will continue their research and take the remaining coursework on their M.S. plan of study necessary to meet the 30 credit hour minimum required by the Graduate School for the M.S. degree. Several scholarships are currently available at the University of Missouri to assist outstanding students for the costs of their undergraduate and graduate education and for conducting undergraduate research, including the Honors College Discovery Fellowships Program and CAFNR and Life Sciences Undergraduate Research Fellowships.

### **Admission Procedures**

Students seeking admission into the program should submit an application to the Director of Graduate Studies of the Department of Soil, Environmental and Atmospheric Sciences at the beginning (i.e., January 30th) of the Spring semester of their junior year. A faculty committee will consider several criteria for admission into the Integrated B.S./M.S. Program including:

1. the student's undergraduate GPA (60 or more credits; minimum GPA of 3.5 at the time of enrollment)
2. a formal statement of interest indicating the intended emphasis area (i.e., soil science, environmental science or atmospheric science)
3. three letters of recommendation with one letter being a formal nomination letter from a SEAS Department faculty member

A student who meets the eligibility requirements will be extended an offer of admission by the middle of the Spring semester. All students must select a faculty mentor/advisor after admission to the program. A faculty advisory committee will be selected for each student and they will meet during the semester to approve a course of study and assist the student in designing and conducting their research program. Students will prepare a research proposal to be reviewed and accepted by their advisory committee. After approval of the research proposal, students will initiate their research during the summer of their junior year. Formal application of the student into the Graduate School will take place during the final semester of the student's senior year and is contingent on the student's successful completion of B.S. degree requirements and meeting eligibility requirements for the graduate program. Students will be required to maintain a cumulative 3.0 GPA during the program, write an M.S. thesis and meet other M.S. degree requirements.

*For more information about the program, contact either of the following people:*

Dr. Neil Fox, Undergraduate Advisor Chair  
Department of Soil, Environmental and Atmospheric Sciences  
University of Missouri  
302 ABNR Bldg  
Columbia, MO 65211  
Tel. No. (573) 882-2144

Fax No. (573) 884-5070  
 Email: [foxn@missouri.edu](mailto:foxn@missouri.edu)

or

Dr. Peter Motavalli, Director of Graduate Studies  
 Department of Soil, Environmental and Atmospheric Sciences  
 University of Missouri  
 302 ABNR Bldg  
 Columbia, MO 65211  
 Tel. No. (573) 884-3212  
 Fax No. (573) 884-5070  
 Email: [motavallip@missouri.edu](mailto:motavallip@missouri.edu)

## Doctor of Philosophy in Soil, Environmental & Atmospheric Sciences

### Admission Contact Information

Dr. Peter Motavalli, director of graduate studies (<mailto:motavallip@missouri.edu>)  
 302 Anheuser-Busch Natural Resources Building  
 Columbia, MO 65211  
 573-884-3212

### Admission Criteria

Deadline: two months prior to the start of the academic semester for which the applicant is applying

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
71	530

Minimum Academic IELTS overall score: 5.5

Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative	Analytical
Prior to August 1, 2011	1100	3.5
On or After August 1, 2011	302	3.5

Completion of an MS degree or equivalent. A waiver of the MS degree requirement may be made by the candidate's doctoral program committee.

Note: All applications and supporting application materials for graduate admission into the SEAS Department must be submitted to the [Graduate School](#) using the [Apply Yourself online application system](#).

### Required Application Materials

- Letter of self-evaluation
- GRE score report

- Three letters of recommendation
- Official transcripts
- Official scores from TOEFL or another approved test of English proficiency is required from international applicants.

Send all required documents in electronic format to the Graduate School.

### **PhD Degree Requirements**

The curriculum is developed by a doctoral program committee and requires a minimum of 72 semester hours beyond the baccalaureate degree. At least 15 hours of course work in the degree program must be at the 8000 and 9000 levels, exclusive of research, problems and independent study experiences. A minimum of two credit hours of graduate seminar must be included in each student's graduate program.

At least 12 credit hours of soil science courses at the 7000, 8000, and 9000 levels, exclusive of problems and thesis research, must be included in the student's graduate program in soil science.

All students are required to attend a workshop on ethics and professionalism.

### **Qualifying Exam**

The student should take the qualifying examination soon after admission into the PhD program and submit an approved plan of study to the Graduate School.

### **Teaching**

All students enrolled in graduate programs are required to participate in a supervised teaching activity.

### **Comprehensive Exam**

After successfully completing the required course work with a GPA of 3.0 (A=4.0) or better, students must pass a written and oral comprehensive examination administered by their doctoral program committee.

### **Dissertation**

A dissertation, which is a comprehensive report of original research on a specialized soil or atmospheric science problem conducted by the student, must be presented to the student's graduate committee and successfully defended.

### **Courses**

See the following Soil, Environmental & Atmospheric Sciences (SEAS) areas in the online myZou system:

- Atmospheric Science (ATM SC)
- Environmental Science (ENV SC)
- Soil Science (SOIL)

## Special Education Graduate Programs

College of Education  
303 Townsend Hall  
573-882-3742  
573-884-0520 (fax)  
<http://education.missouri.edu/SPED/>

### About Special Education Graduate Programs

We strive to prepare educators to assist children, youth and adults with disabilities to be academically and socially successful life-long learners. Our faculty are consistently recognized — internationally and across the U.S. — for their individual and collaborative teaching and research excellence. The department's unique mix of faculty expertise areas creates a wide range of opportunities for students and researchers. Special Education hosts or co-hosts several state and federally supported training, demonstration and research projects, including the following three centers that focus on facilitating positive developmental outcomes for children and youth with disabilities:

- Center for School-Wide Positive Behavioral Supports
- Center for Adolescent Research in Schools
- Thompson Center for Autism and Neurodevelopmental Disorders

### Degrees Offered

MA or M Ed in special education, with emphasis areas in:

- autism
- behavior disorders
- early-childhood special education
- general special education (cross categorical)
- gifted education
- learning disabilities
- learning and instruction

EdD or PhD in special education, with emphasis areas in:

- administration and supervision of special education
- behavior disorders
- early-childhood special education
- general special education (cross categorical)
- learning disabilities
- developmental disabilities (cognitive impairments)

### Careers

Undergraduate and graduate programs prepare teachers and leadership personnel in the field of special education. Program graduates assume roles as teachers in a variety of educational settings, as consulting teachers, college professors, researchers, school administrators and leaders in state and federal governmental agencies. Programs meet students' needs and interests within the framework of the requirements of each specific degree and state certification guidelines.

## Special Education Faculty

Tim Lewis

professor; PhD, University of Oregon. Behavior disorders and Positive Behavior Supports.

Sharon Huntze

assistant professor emeritus; EdD, University of Missouri.

James E. Leigh

professor emeritus; PhD, University of Southern California.

Erica Lembke

associate professor; PhD, University of Minnesota. Learning disabilities, Response to Intervention.

Rebecca McCathren

associate professor; PhD, Vanderbilt University. Early childhood special education.

Michael Pullis

chair, associate professor; PhD, University of California-Los Angeles. Behavior disorders.

Janine Stichter

professor; PhD, University of Iowa. Autism and behavior disorders.

Melissa Stormont

professor; PhD, Purdue University. Mild disabilities, ADHD, students at-risk.

Delinda van Garderen

associate professor; PhD, University of Miami, learning disabilities and math difficulties.

Cathy Thomas

assistant professor; PhD, University of Texas, technology in teacher education, special education, an adolescent literacy.

## Master's Degree in Special Education

Special Education Contact ([sped@missouri.edu](mailto:sped@missouri.edu))

303 Townsend Hall; Columbia, MO 65211

573-882-3742

### Admission Criteria

Fall deadline: July 1

Spring deadline: November 1

Summer deadline: April 1

Minimum GPA: 3.0/4.0

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
80	600

Minimum preferred GRE scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative
Prior to August 1, 2011	900-1000
On or After August 1, 2011	291

Faculty selection committees review applications for admission into the various graduate programs. Factors considered in the graduate student review process include previous academic course work and performance, GRE scores, letters of recommendation from professors or professional supervisors and relevant professional work experiences. The letter of intent is evaluated for advising purposes and is an indication of the applicant's motivation, professionalism and writing competencies. Interviews with faculty are often arranged as part of the admissions review process.

## Required Application Materials

### [To the Graduate School:](#)

All required Graduate School documents

### [To the Special Education Program:](#)

Departmental application

Letter of intent and professional goals

2 letters of recommendation (form provided by department)

GRE score report

## Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program Web site or ask the program contact for details.

## Emphasis Areas

For the degree specializations, see *Degrees Offered*

## Master 's Degrees

### Master of Arts

The MA program emphasizes research and requires 33 hours. MA candidates must follow graduate school guidelines with respect to timeliness and committee formations and complete a thesis.

### Master of Education

The M Ed program requires 33 hours. The M Ed degree requires a comprehensive examination or project.

## Retention

To remain in good standing in the master's program and earn a master's degree, each student must earn and maintain an overall grade point of 3.0 or higher in all required and elective course work each semester. If

student's GPA falls below 3.0 for any semester, they will be dropped from the degree program. If students receive a grade of "C" in any core or required course, remedial activities will be required. Students must also complete course work assigned a grade of "I" prior to the end of the following semester.

**Satisfactory Progress**

For information on general progress guidelines and the dismissal policy, see *About Special Education*.

**Doctorate in Special Education**

Admission Contact Information  
 Special Education Contact ([sped@missouri.edu](mailto:sped@missouri.edu))  
 303 Townsend Hall; Columbia, MO 65211  
 573-882-3742

**Admission Criteria**

Fall deadline: January 15  
 Spring deadline: August 15

Minimum GPA: 3.5/4.0  
 Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
80	600

Minimum preferred GRE scores:

<i>When did you take the GRE?</i>	Verbal + Quantitative
Prior to August 1, 2011	900-1000
On or After August 1, 2011	297

Faculty selection committees review applications for admission into the various graduate programs. Factors considered in the graduate student review process include previous academic course work and performance, GRE scores, letters of recommendation from professors or professional supervisors and relevant professional work experiences. The letter of intent is evaluated for advising purposes and is an indication of the applicant's motivation, professionalism and writing competencies. Interviews with faculty are often arranged as part of the admissions review process.

**Required Application Materials**

[To the Graduate School:](#)

All required Graduate School documents

[To the Special Education Program:](#)

- Departmental application
- Letter of intent and professional goals
- 3 letters of recommendation (form provided by department)
- GRE score report

### **Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program Web site or ask the program contact for details.

### **Emphasis Areas**

For the doctorate's specializations, see [Degrees Offered](#).

### **Plan of Study**

The PhD program requires 72 hours beyond the requirements of the master's degree.

### **Qualifying Exam**

Doctoral students must successfully pass a qualifying exam. This is given to assess the student's current knowledge of the field, their ability to synthesize professional literature, engage in professional writing practices, and orally present/discuss key issues within the field. This process is conducted by three faculty members and may be used to help define the student's plan of study.

### **Comprehensive Exam and Dissertation**

Doctoral students must complete comprehensive exams, which have a written and oral component, which is constructed and evaluated by the student's doctoral committee in order to advance to "candidacy" status. A minimum of six hours of 9090 Research is required for the doctoral program in completion of the dissertation.

### **Satisfactory Progress**

For information on general progress guidelines and the dismissal policy, see [About Special Education](#).

### **Courses**

See Special Education (SPEC ED) graduate courses in the myZou online system.

## Statistics Graduate Programs

Kathleen Maurer, Coordinator of Graduate Studies  
146 Middlebush  
Columbia, MO 65211  
573-882-6376  
<http://www.stat.missouri.edu/>

### About Statistics

The statistics department faculty is known for both cutting edge methodological and collaborative research and for outstanding teaching. Faculty members are currently investigating statistical problems in the fields of ecology, genetics, economics, meteorology, wildlife management, epidemiology, AIDS research, geophysics, and climatology. The program's faculty members have ongoing collaborative programs across disciplines such as biostatistics, bioinformatics, economics, atmospheric science, psychology and with the Missouri Department of Conservation.

The graduate program provides opportunities for graduate study and thesis direction in various areas of probability and statistics, both theoretical and applied. A variety of consulting and collaborative opportunities allow both faculty and graduate students to conduct cooperative and interdisciplinary research. Regular statistics colloquia provide opportunities for faculty and outside speakers to present the results of their research. Faculty and graduate students also participate in weekly seminar series in Bayesian statistics, bioinformatics, and biostatistics.

### Degrees Available

- MA and PhD in statistics
- MA in statistics with emphasis in biostatistics
- Dual MA in statistics and economics

### Career Opportunities

Statisticians are in demand in education, medicine, government, business and industry as well as in the biological, social and physical sciences.

### Facilities & Resources

The Department of Statistics maintains a state-of-the-art computer network with Linux workstations and servers for research and personal productivity software on PCs. Students have access to the network through PCs in student offices and through the statistics department computer laboratory. An extensive library of software including R, SAS, and common programming languages is maintained. Students also have access to the campus computing network. The statistics department is located in newly renovated space in Middlebush, with easy access to the main library's outstanding collection of books and journals in statistics.

## **Financial Aid from the Program**

Fellowships and teaching and research assistantships are available to qualified graduate students. Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

## **Statistics Faculty**

Dongchu Sun  
chair, professor; PhD, Purdue University

Paul L. Speckman  
director of graduate studies, professor, PhD, University of California-Los Angeles.

Nancy Flournoy  
professor; PhD, University of Washington.

Chong Zhuoqiong He  
director of graduate admissions, professor; PhD, Purdue University.

Jianguo Sun  
professor; PhD, University of Waterloo, Canada.

Christopher K. Wikle  
director of undergraduate studies, professor; PhD, Iowa State University.

Sounak Chakraborty  
associate professor; PhD, University of Florida.

Marco Ferreira  
associate professor; PhD, Duke University.

Scott Holan  
associate professor; PhD, Texas A&M University.

Athanasios Micheas  
associate professor; PhD, University of Connecticut.

Jing Qiu  
associate professor; PhD, Cornell University.

Lori Thombs  
director of the Social Science Statistics Center, associate professor; PhD, Southern Methodist University.

Min Yang  
associate professor; PhD, University of Illinois-Chicago.

Subharup Guha  
assistant professor; PhD, The Ohio State University.

Tieming Ji  
assistant professor, PhD, Iowa State University

Michael Robbins  
assistant professor; PhD, Clemson University

Lawrence Ries  
associate chair, associate teaching professor; PhD, University of Missouri.

## Application and Admission Information

### Admission Criteria

Fall deadline: January 15  
Spring deadline: October 15

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
74	535

Minimum GPA: 3.0 in math and statistics courses to enter master's program; 3.5 in math and statistics to enter PhD program

Bachelor's degree from accredited college or university in related area

Undergraduate courses in statistics are recommended but not required. Consideration also is given to rank in graduating class, trends in grade records, maturity and experience, and other criteria bearing on qualifications.

Before entering the graduate program, a student should have a background that includes three semesters of calculus (or equivalent), one semester of matrix theory, and at least one post-calculus course in probability and statistics. Some required courses at the 7000 level not taken as an undergraduate may be taken for graduate credit as part of the graduate program.

### Required Application Materials

[To the Graduate School:](#)

All required Graduate School documents

[To the Program:](#)

Departmental application  
3 letters of recommendation (use departmental form)  
Letter of intent  
GRE score report

## Master of Arts in Statistics

### Degree Requirements

The general requirements for receiving a master's degree are at least 30 semester hours of course work at the 7000 level or higher, of which at least 18 hours must be from the Department of Statistics at MU. The 30 hours may not include credit hours of 7050, 7510, 7530 or 7710 or more than a total of six hours of 8090.

At least 15 semester hours of course work at the 8000 level or above must be taken from the Department of Statistics at MU. The 15 semester hours cannot include more than a total of three hours of 8090.

Additional courses recommended but not required are Statistics 7110, 7310, 7410, 7420, 7430, 7450, 7610, 7810, 7830, 7850, 7870, 8310, 8320, 8370, 8410, 8640, 9250, 9310, 9320, and 9410; Mathematics 7700 and 7900; Computer Science 1050 or 2050.

### Remedial Courses

The following courses are required if equivalent courses were not taken as an undergraduate: Mathematics 7140, Statistics 7750 and 7760. These courses may not be used for more than six of the required 30 hours.

### Applied Track Masters of Arts Degree

#### *Required core courses*

Students must complete the following six courses or equivalent.

Stat 7110	Statistical software and data analysis
Stat 7540	Experimental design
Stat 7750	Introduction to probability theory
Stat 7760	Statistical inference
Stat 8310	Data Analysis I
Stat 8320	Data Analysis II

In addition, students must take four elective courses, at least three of which must be selected from the department of statistics course offerings numbered 8000 or above.

#### *Examination*

Students in the applied track must pass written and oral master's exams administered by a departmental committee.

### Regular Track Masters of Arts Degree

#### *Original Written Work*

All candidates must submit a written report on an independent effort toward producing original work. This report may, with the adviser's consent, take the form of a thesis, a written review on a set of papers in statistics, or a written report on an independent study project, which may include an original application of statistics. For this work, a student must register for at least three semester hours of 8090.

### *Presenting the Work*

All candidates are required to present an open seminar on the results of the written report. The report should be made available for public review, through the Department of Statistics office, for at least one week before the examination.

### *Examination*

The MA examination covers material presented in the written report and the seminar and may also cover course work.

### **Satisfactory Progress**

#### *Length of Study*

A master's candidate is expected to complete the master's degree within three calendar years beginning with the first semester of enrollment unless approval is obtained from the graduate faculty of the Department of Statistics.

#### *Grade Requirements*

Any student, while a graduate student in this program, who receives a grade of C or lower in six or more hours of courses offered by the Department of Statistics or a grade of C or lower in nine or more hours of all courses taken will be dismissed from the graduate program unless contrary action is taken by the graduate faculty of the department.

For each credit hour over three hours with a grade of C or lower in courses offered by the Department of Statistics at the 7000 level and above, the student must receive a credit hour with a grade of A in courses offered by the department at the 7000 level and above.

## **MA in Statistics with Emphasis in Biostatistics**

Students who wish to specialize in biostatistics may obtain a degree with special emphasis. The general requirements are the same as those for the MA degree in statistics. In addition, students must satisfy the following.

- (i) Take statistics 7410 and (ii) either 7420, 8410 or 9410 or the equivalent;
- (ii) Submit a project or thesis related to biostatistics.

## **Dual Master's Degree in Economics and Statistics**

The department offers a cooperative MA degree with the Economics Department. Students may obtain MA degrees in economics and statistics with 48 hours of course work numbered 7000 or higher from the University of Missouri instead of the 52 or more required for separate degrees. (These 48 hours may not include any of the following: Economics 7351, 7353, or Statistics 7510, 7530, 7710.) Eighteen or more hours are required from the Department of Economics. At least 15 hours must be numbered 8000 or higher with no more than four hours of 8090. Students must take the core economics courses 8451 and 8453 and research workshop 8413 (2 credit hours). Eighteen or more hours are required from the Department of Statistics. At least 15 hours must be

numbered 8000 or higher with no more than three hours of 8090. Statistics 7750 and 7760 and Mathematics 7140 are required if equivalent courses were not taken as an undergraduate.

All candidates must submit a thesis or written project demonstrating an independent effort towards producing original work satisfactory for each degree. The candidate may complete separate theses/projects for both economics and statistics or a single joint thesis/project satisfying both requirements.

## **Master's Minor**

To receive a designated minor in statistics for a master's degree, at least 12 credit hours of course work at the 7000 level or higher must be completed from the Department of Statistics at MU. The courses should be unified in theme and must be approved by the director of graduate studies in the Department of Statistics.

The courses must be completed with an average grade of B (3.0) or higher; shall not include Statistics 7002, 7070, 7085, 8085 or 9085; and shall not include more than one course from Statistics 7710 and 7750.

## **Doctorate in Statistics**

### **Qualifying Examination**

The Qualifying exam will be offered to students in the statistics department doctoral program or to master's students in statistics who are approved by the Admissions Committee. All graduate students who expect to be in the PhD program must take the qualifying exam at the earliest possible time after completing the courses required for the exam. Any exceptions to these time limits must be obtained in writing from the Director of Graduate Studies with approval from the voting faculty. The qualifying exam will be offered two times per year, once at the beginning of the Fall semester (August) and once at the beginning of the Spring semester (January). The exam will consist of two parts, to be given on separate days. Each part will be designed to be completed within a four-hour period. Part I will cover Stat 7750 (Introduction to Probability Theory) and 7760 (Statistical Inference). Part II will cover Stat 8310 (Data Analysis I) and 8320 (Data Analysis II). Students who fail a part of the qualifying exam on the first try must take that part of the exam again the next time the exam is offered if they choose to continue in the PhD program. On the second attempt, students are expected to take only the parts of the exam that they failed on the first attempt. In general, a student may attempt all or part of the exam at most two times. In rare and special situations, a student may appeal to the Director of Graduate Studies for a third attempt and be given the opportunity with approval from the voting faculty.

### **Doctoral Committee**

Within one semester of passing the qualifying examination, a student must choose a doctoral program committee in consultation with his or her adviser. This committee consists of at least five members, at least three of whom are members of the doctoral faculty in statistics and at least one from another MU doctoral program.

### **Preliminary Examination**

Before taking the preliminary exam, the student is required to have passed the qualifying exams and chosen his/her major professor. Students must take the preliminary exam at the earliest possible time after the student has passed the qualifying exam and completed the courses required for the preliminary exam. Any exceptions to these time limits must be obtained in writing from the Director of Graduate Studies with approval from the voting faculty. The preliminary exam will be offered two times per year, once at the beginning of the Fall semester (August) and once at the beginning of the Spring semester (January). The exam will consist of two parts, to be

given on separate days. Part I will cover Stat 9710 (Mathematical Statistics I) and Stat 9720 (Mathematical Statistics II), and part II will cover Stat 9310 (Theory of Linear Models). Part I will be designed to be completed in four hours and Part II will be designed to be completed in three hours. Students who fail a part of the preliminary exam on the first try must take that part of the exam again the next time the exam is offered if they choose to continue in the PhD program. On the second attempt, students are expected to take only the parts of the exam that they failed on the first attempt. In general, a student may attempt all or part of the exam at most two times. However, if it is the student's second attempt and the student fails one or both parts of the exam, the voting faculty may, upon consideration of the exam performance and other information deemed relevant, vote that the student be allowed to take the failed portion(s) of the exam a third (and final) time.

### **Grading and Evaluating of the Qualifying and Preliminary Examinations**

A "blinded" approach will be used when grading and evaluating the qualifying and preliminary examinations. Specifically, each student taking the exam will be given a unique ID that will be used throughout the entire grading and evaluating process. Each blinded part of the exam will be evaluated individually as pass or fail. The blinded method of evaluation will be strictly adhered to. That is, no conditional passes/fails will be given and no information other than the performance on the exam will be used to determine a pass or fail on each part of the examination.

### **Required Course Work**

Before taking the comprehensive examination, students should complete six courses from the following: Statistics 9100, 9250, 9320, 9370, 9210, 9410, 9510, 9530, 9640, 9810 and 9820 taken at MU or at comparable institutions. (Different 9100s can be counted more than once.) Other courses may be substituted at the discretion of the student's doctoral program committee.

### **Comprehensive Examination**

After successfully completing the preliminary exam and the required coursework, the student is eligible to take the comprehensive examination. This examination consists of a written and oral section as specified in the Graduate School catalog. This examination must be completed at least seven months prior to the final defense of the dissertation.

### **Dissertation**

A dissertation, prepared under the direction of a dissertation supervisor, is required. The dissertation should be presented in an open seminar as part of the final examination, which is conducted by the final examination committee. The dissertation should be made available for public review, through the Department of Statistics office, for at least one week before the examination.

### **Additional Requirements**

Additional requirements for the PhD in statistics are determined by the student's program committee and the director of graduate studies.

### **PhD Minor**

To receive a designated minor in statistics for a PhD degree, at least 15 credit hours of course work at the 7000 level or higher must be completed from the Department of Statistics at MU. The courses must include Statistics

8310 and 8320, but may not include Statistics 7002, 7020, 7050, 7070, 7085, 7510, 7530, 8085, 8090, or 9085. Students must have taken a calculus based mathematical statistics course at the level of Stat 7710 or 7760 or above, but no more than 6 hours of Stat 7710, 7750, and 7760 can be counted towards the 15 hours. The plan of study must be approved by the Director of Graduate Studies of the Statistics Department and be completed with an average grade of B (3.0) or higher. Each student is encouraged to seek approval of his/her plan of study as soon as possible.

## **Courses**

See Statistics (STAT) in the myZou online system.

## Textile & Apparel Management Graduate Programs

137 Stanley Hall  
Columbia, MO 65211  
573-882-7317  
<http://tam.missouri.edu/>

Graduate program in textile and apparel management offer the following areas of study: apparel marketing and merchandising; apparel product development; design theory and analysis; apparel manufacturing management; supply chain management; historical and cultural aspects of textiles and dress; e-commerce and digital marketing; and consumer marketplace concerns.

### Degrees Offered

MS in textile and apparel management; and PhD in human environmental sciences with an emphasis area in textile and apparel management.

### Careers

Career opportunities for graduates exist in many areas, such as higher education, industry analysis, museums, product development, and production management.

### Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program Web site or ask the program contact for details.

## Textile and Apparel Management Faculty

Jana Hawley  
department chair, professor; PhD, University of Missouri. Sustainability; textile recycling; cultural studies.

Jung Ha-Brookshire  
assistant professor; PhD, University of North Carolina-Greensboro. Global supply chain and sourcing; sustainable production and consumption; firm/industry identity.

Pamela S. Norum  
associate professor; PhD, Cornell University. Consumer consumption behavior; sustainability; household spending patterns; retailing.

Jean L. Parsons  
associate professor; PhD University of Maryland. Design theory, digital apparel design, history of apparel industry

Myunghee Sohn  
assistant professor; PhD, University of Minnesota. Apparel product development; technical design; body scanning; human dimensioning.

## Admission Contact Information

Leona Nichols (nicholslm@missouri.edu)  
 137 Stanley Hall; Columbia, MO 65211  
 573-882-7317

[Program admission page: http://tam.missouri.edu/academics\\_grad.html](http://tam.missouri.edu/academics_grad.html)

## Admission Criteria

Fall deadline: February 1 (January 15 for early financial support considerations)

Spring deadline: June 1

Summer deadline: October 1

- Minimum GPA: 3.0 in last 60 hours
- Bachelor's degree from an accredited college or university in textile and apparel management or related field. Those with unrelated majors will need to do make-up work
- Minimum **TOEFL** scores:

Internet-based test (iBT)	Paper-based test (PBT)
79	550

- Minimum **GRE** scores:

<i>When did you take the GRE?</i>	Verbal	Quantitative	Analytical
Prior to August 1, 2011	500	500	
On or After August 1, 2011	153	144	variable

## Required Application Materials

### [To the Graduate School:](#)

All required Graduate School documents

Statement of professional objectives (upload to application)

Departmental [application](#) (upload through the Graduate School application or send directly to department)

Three letters of recommendation (upload preferred, or send directly to department)

GRE Scores

TOEFL scores if international student

## Courses

See Textile and Apparel Management (T A M) in the myZou online system

## Theatre Graduate Programs

College of Arts and Science  
129 Fine Arts Center  
573-882-2021  
<http://theatre.missouri.edu/>

### About the Department of Theatre

The MU Department of Theatre has a distinguished history that began shortly after 1900 when a small group of aspiring thespians resolved to enhance the cultural life of the campus by producing plays in an abandoned dining room in Lathrop Hall. In 1925, Professor Donovan Rhynsbarger joined the MU faculty and established the Missouri Workshop Theatre. For over 85 years, the department has sustained a national and international reputation as a major center for theatre and performance scholarship and dramatic art production. In 2007 “Academic Analytics” ranked MU Department of Theatre #4 nationally for scholarly productivity in Theatre Literature, History, and Criticism (reported in Chronicle of Higher Education, November 11, 2007). MU Theatre offers graduate and undergraduate programs.

A professional faculty comprises internationally recognized scholars and artists who develop the talents, skills and knowledge of students by teaching them to combine scholarship with artistry. MU has consistently produced fine theatre and notable alumni, including Tennessee Williams, George C. Scott, Tom Berenger, Chris Cooper, Jon Hamm, Ethel Pitts Walker, and Barbara Molette. MU students have won the prestigious David Library Award seven times, several nationally coveted awards like the Mark Twain Comedy Prize, and departmental productions have been cited for national awards by the Kennedy Center American College Theater Festival, the National Communication Association, and the Association of Theatre in Higher Education. Graduate students in the department have won numerous campus, professional and national awards, fellowships and research grants for their scholarship and artistry. The department is proud of its legacy of artistic excellence and the enrichment it brings to the cultural life of the campus and community.

### Facilities

*Rhynsbarger Theatre.* Named after Donovan Rhynsbarger, MU's principal theatre for dramatic productions is in the Fine Arts Building, which also houses the music and art departments. The 278-seat proscenium theatre has a large stage and fly system with well-equipped costume and scenic shops located adjacent to the stage. The theatre houses faculty offices, classrooms, shops, dressing rooms and other production support spaces. Students interested in lighting and sound production will find a variety of equipment and modern control systems on which to learn their craft. We're also thrilled to announce the addition of a new, state-of-the-art professional computer graphics lab in 2012.

*Corner Playhouse.* The Corner Playhouse provides an opportunity for students and faculty to present smaller, often more experimental productions in a flexible space. Seating up to 125, the theatre is designed to accommodate any stage configuration. Across the street from the Rhynsbarger Theatre, the Corner Playhouse also houses dressing rooms, graduate student offices and classrooms.

### Degrees Offered

- Master of Arts in Theatre
- Doctoral Degree (PhD)

## **Theatre Faculty**

Clyde Ruffin  
department chair and professor; MFA, University of Iowa.

Cheryl Black  
associate professor; PhD, University of Maryland-College Park.

Kevin Brown  
assistant professor; PhD, University of Colorado.

Suzanne Burgoyne  
professor; PhD, University of Michigan.

Brad Carlson  
assistant professor; MFA, Southern Illinois University

M. Heather Carver  
director of graduate studies, associate professor; PhD, University of Texas-Austin.

David Crespy  
director of undergraduate studies and associate professor; PhD, City University of New York.

Jon Drtina  
associate Teaching Professor, MFA, University of Southern Mississippi

Catherine Gleason  
assistant Teaching Professor, MFA Southern Illinois University, Ph.D. University of Wisconsin

James Miller  
professor; MFA, University of Southern Mississippi.

Dean Packard  
technical director/adjunct associate professor; MFA, University of Iowa.

Kerri Packard  
costume director/adjunct associate professor; MFA, University of Iowa.

## **Satisfactory Progress: General Guidelines for MA and PhD in Theatre**

### **Probationary Status**

The following constitute grounds for placing a student on departmental probation:  
Earning a grade of C or below in any departmental course taken for graduate credit will result in probationary status. A grade of incomplete in any course will result in probationary status for the subsequent semester. Incomplete grades must be changed to a grade of A or B by the end of the probationary semester (dissertation research incompletes are evaluated as S/U until the dissertation is defended). Failure to comply in a satisfactory manner with all responsibilities related to graduate assistantships. Graduate students in our department are

expected to conduct themselves in a manner reflecting the university's commitment to professional integrity, collegiality, and good citizenship. Students who consistently fail to conduct themselves in this manner may be subject to probation or dismissal. In the case of each student on departmental probation, the director of graduate studies will confer with the adviser (in the case of an MA student), or the members of the program committee (in the case of a PhD student) to determine the grounds for removal of probation, and will communicate this decision to the student.

**Annual Review**

Each Fall semester the director of graduate studies convenes the Graduate Studies Committee to review the progress and performance of all graduate students. Each graduate student in residence should meet with his or her adviser within the first two weeks of each semester to determine whether satisfactory progress has been maintained, and the adviser shall report the results of this meeting to the director of graduate studies.

**Losing & Regaining Financial Support**

Termination of departmental financial support will result if the student is considered to be making unsatisfactory progress and the student's program may be terminated. Departmental financial support may be restored when the student has made satisfactory progress toward a graduate degree for one semester, has made an A or a B in all incomplete courses, and is judged to be off probation by the director of graduate studies.

**Master of Arts in Theatre**

**Application and Admission Information**

**Admission Contacts:**

Graduate Contact/Administrative Assistance Tina Edholm (edholmc@missouri.edu) 129 Fine Arts Building; Columbia, MO 65211 573-882-2021 <a href="http://theatre.missouri.edu/graduateprogram.htm">http://theatre.missouri.edu/graduateprogram.htm</a>	Director of Graduate Studies Dr. Heather Carver 129 Fine Arts Building; Columbia, MO 65211 573-882-2021 <a href="mailto:carverh@missouri.edu">carverh@missouri.edu</a>
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**Admission Criteria**

<http://theatre.missouri.edu/graduateprogram.htm>

Deadline: January 15 for the following fall semester admission. We only admit once a year, barring extraordinary circumstances.

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
112	650

Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal	Quantitative	Analytical
Prior to August 1, 2011	600	550	4.0
On or After August 1, 2011	160	146	4.0

Minimum GPA: 3.0 in the last 60 hours

Probationary admission is possible. The director of graduate studies will advise the student in writing of what must be done to change the probationary admission to regular admission.

### **Required Application Materials**

#### To the Graduate School:

All required Graduate School documents

#### To the Theater Program:

3 letters of recommendation

GRE score report

Statement of purpose

Scholarly writing sample

### **Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program Web site or ask the program contact for details.

### **Curriculum Requirements**

The degree of Master of Arts in Theatre will be awarded upon completion of the curriculum outlined below with a GPA of 3.0 or better.

### **Completed Undergraduate Curriculum**

Most students have completed this course of study before seeking admission to MU. However, applicants holding undergraduate degrees in disciplines other than theatre will be asked to complete those courses, which were not part of their undergraduate curriculum. In some cases professional theatre experience may substitute for certain courses. Twelve courses in the undergraduate curriculum should be distributed as follows:

Basic skills: at least one course in each of the following: voice and articulation, movement for the stage, script analysis, technical theatre; At least one upper-division course in each of the following: acting, directing, dramatic literature, theatre history; at least two upper-division courses in technical theatre; and two upper-division theatre electives.

### **Graduate Curriculum**

The student must complete at least 24 graduate hours while in residence as a graduate student at MU. The academic program should be established in consultation with an adviser not later than the end of the first full semester of residence. No more than six semester hours of graduate work may be transferred from another university. The student submits Form M-1, Application for Degree of Master of Arts to the Graduate School listing the courses to be taken to complete the graduate curriculum.

## **Independent Project**

Each candidate for the MA must complete an independent project, which should be specified on the M-1 form as part of the plan of study.

*There are three options:*

1. This may be a thesis, for which up to six semester hours of credit in Theatre Research may be earned.
2. Another option is to write an original performance/play, translate a play/performance, or complete a project in acting, design, adaptation/devising, dramaturgy, solo performance or directing. Credit of up to three semester hours may be earned in a graduate problems course.
3. A student may create and successfully execute a research project to earn three semester hours in a graduate course in independent research.

## **Master's Final Examination**

Master's degree students who have been maintaining satisfactory progress toward a degree for a period of 24 months are expected, barring unusual and extenuating circumstances, to be prepared to write the master's final examination.

Each candidate for the MA is required to pass a final examination to demonstrate mastery of the fundamental principles of the work included in the course of study. An examining board consisting of at least three members of the faculty shall administer the examination.

In consultation with his or her adviser the student selects four areas for examination from among those listed below:

*At least two but no more than three areas may be selected from among:*

Theatre History and Historiography  
Dramatic Literature and Criticism  
Dramatic and Performance Theory  
Performance Studies and Writing for Performance

*At least one but no more than two areas must be selected from among:*

History, Theory or Pedagogy of Acting or Directing  
History, Theory or Pedagogy of Dramaturgy  
History, Theory or Pedagogy of Theatrical Design  
History, Theory or Pedagogy of Performance Studies  
History, Theory or Pedagogy of Playwriting/Writing for Performance

## **Length of Exam**

Two hours are allotted for answering the question(s) for each area, making a total of eight hours for the examination.

## Notifying the Graduate School of Results

As soon as the performance on the Master's Final Examination has been evaluated, the student's adviser informs the Graduate School, using the appropriate M-form. If one area examination is unsatisfactory, the examining board will give the student an oral examination on that area, with special emphasis on the questions or questions missed. If two area examinations are unsatisfactory, the student is failed.

## Doctorate in Theatre

### Admission Contact Information:

Graduate Contact/Administrative Assistance Tina Edholm (edholmc@missouri.edu) 129 Fine Arts Building; Columbia, MO 65211 573-882-2021 <a href="http://theatre.missouri.edu/graduateprogram.htm">http://theatre.missouri.edu/graduateprogram.htm</a>	Director of Graduate Studies Dr. Heather Carver 129 Fine Arts Building; Columbia, MO 65211 573-882-2021 <a href="mailto:carverh@missouri.edu">carverh@missouri.edu</a>
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### Admission Criteria

Deadline: January 15. We only admit once a year, barring extraordinary circumstances.

Minimum TOEFL scores:

Internet-based test (iBT)	Paper-based test (PBT)
650	650

Minimum GRE scores:

<i>When did you take the GRE?</i>	Verbal	Quantitative	Analytical
Prior to August 1, 2011	600	550	5.0
On or After August 1, 2011	160	146	4.0

Minimum GPA: 3.0 in the last 60 hours

GPA of 3.5 or better in master's program

### Required Application Materials

#### To the Graduate School:

All required Graduate School documents

#### To the Program:

- 3 letters of recommendation
- GRE score report
- Statement of purpose
- Scholarly writing sample
- Professional resume or portfolio
- Creative (dramatic) writing samples

### **Financial Aid from the Program**

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program website or ask the program contact for details.

### **Careers**

The doctorate in theatre at MU aims to provide knowledge and research skills necessary to launch the successful student on a career of scholarly and artistic investigation of theatre history, performance theory and criticism, performance studies, playwriting and other modes of writing for performance (such as adaptation and translation), dramaturgy, performance and theatre pedagogy.

### **Qualifying Examination**

During the first semester of residence, the student completes a qualifying examination. The Graduate Affairs Committee of the Department of Theatre meets with the student to discuss the student's academic background, career goals and research interests for an oral review and discussion of their proposed course of study. The adviser submits the D-1 form, Qualifying Process/Confirmation of Adviser, reporting on the departmental qualifying process.

### **Advisory Committee: Form D-1**

Doctoral Program Committee asks the graduate dean to approve a committee of four graduate faculty members to help the student plan and carry out a program. One member of the Doctoral Program Committee must come from outside the Department of Theatre.

### **Program Planning**

As early as is practical, usually in the student's second semester on campus, the student should meet with the Doctoral Program Committee to plan a doctoral program. The student should prepare a trial plan in consultation with the faculty adviser who serves as chair of the Doctoral Program Committee and reports the approved plan of study to the graduate dean on Form D-2: Doctoral Plan of Study.

### **Theatre Department Course Work**

Although the Graduate School requires no specific number of hours of class work, the Department of Theatre typically requires students entering the program with a master's degree to complete about 40 semester hours of graduate level course work in the theatre department, including three semester hours of Dissertation Research, devoted to writing a dissertation prospectus. For more specific information regarding required coursework, see <http://theatre.missouri.edu/graduateprogram.htm>.

### **Doctoral Minor**

The department also requires the student to complete a doctoral minor, a nine-semester-hour unified area of study outside the Department of Theatre.

## **Research Tool Options**

The PhD in Theatre also includes a research tool requirement that may be satisfied in several ways:

1. *Option One:* Present evidence of translation ability in each of two foreign languages in one of the following ways: by receiving an acceptable score on a GFSLT Humanities examination if the language is French, German or Spanish (Acceptable scores at this time are: French 570, German 560 and Spanish 540) by receiving certification of competence from a qualified examiner if other languages are presented by showing on one's transcript a grade of B or better on a literature course at MU. (This course must require reading of works in the foreign language. The course may be taken during the doctoral program or within the five years prior to beginning the program.)
2. *Option Two:* Demonstrate a high degree of fluency in one foreign language by individual examination conducted by the appropriate language department at MU.
3. *Option Three:* Choose one language and one block of courses. Demonstrate translation ability for one language as in Option One. Complete with grades of B or better six semester hours in graduate courses taken outside of the department that represent a coherent unit of study, providing a research tool applicable to the candidate's dissertation research.
4. *Option Four:* Choose two blocks of courses. Complete with grades of B or better two blocks of course work of six hours each in graduate level courses taken outside of the department that must represent to the candidate's advisory committee a coherent unit of study. One or both blocks should provide a research tool for the candidate's dissertation.

## **Participation in Productions**

The doctoral student is encouraged to participate in University Theatre and studio theatre productions and may, in some cases, be required to do so. Academic credit is available.

## **Dissertation Proposal/Prospectus**

Before comprehensive exams may be scheduled, students will be required to complete a 5-page Dissertation Proposal, concisely but clearly expressing the purpose, justification, method and general organizational plan for the dissertation. A bibliography is also required (bibliography is not included in 5 pp. minimum). The theatre department faculty members on student's doctoral committee must approve this proposal. After successful completion of comprehensive exams, the student will expand the dissertation proposal into a Dissertation Prospectus — a more detailed and thorough description of the dissertation project. The prospectus should provide a clear statement of the purpose of the dissertation, describe the need for the knowledge the dissertation report will supply, outline the research questions and demonstrate the procedures by which the scholar will answer these questions. The candidate will present the prospectus to the Doctoral Program Committee and will be prepared to defend it.

## **Satisfactory Progress Before the Comprehensive Exam**

Each semester prior to the semester in which comprehensive examinations are taken, satisfactory progress is maintained when a student completes nine semester hours of graduate level work with a grade of B or above. Incomplete grades are given only under extraordinary circumstances and with the approval of the graduate faculty. Doctoral students who have been maintaining satisfactory progress toward a degree for a period of 36

months are expected, barring unusual and extenuating circumstances, to be prepared to write comprehensive examinations.

### **Comprehensive Examination**

After completing the research tool option, a substantial amount of the course work and after obtaining the approval of the 5-page proposal from the Doctoral Program Committee, the student takes the comprehensive examination. The comprehensive examination provides an opportunity for the student to demonstrate a thorough grasp of the history and principles of theatre. The examination provides the Doctoral Program Committee with a window looking back upon the student's training as well as a chance to estimate the student's potential as a problem solving scholar of theatre. Readers of the examination look for more than a reiteration of the content of standard sources of information about dramatic art. The examinee should demonstrate an ability to analyze problems and data, to formulate theses or points of view, and to locate, evaluate and organize evidence to support a contention—the essential skills of scholarship. The comprehensive examination in theatre allows candidates not only to tell what they know but also to demonstrate what they can do with information. Comprehensive exams are scheduled once each semester, during the first third of the current semester.

### **Stages of the Comprehensive Exam**

The examination is given in two stages.

*Stage One* consists of a written examination, over the history of theatre, dramatic theory, criticism, writing for performance, performance studies, and theatre pedagogy, and an additional (written) examination consisting of one or two questions posed by the outside member of the Doctoral Program Committee. The examination is evaluated by the student's Doctoral Program Committee, which decides whether or not the student should be advanced to the oral examination.

*Stage Two* is the oral examination administered by the Doctoral Program Committee. This examination provides an opportunity for the student to correct, amend, or defend assertions made in the written examination, although the oral examination is not bound by any limits established by the written examination. Ordinarily of two hours duration, the oral is also an opportunity for the student to demonstrate skill in oral explanation and argument.

### **Criteria for Passage of the Comprehensive Exam**

The result of the comprehensive examination shall be marked pass if all of the Doctoral Program Committee members recommend a pass on the entire examination, both written and oral sections. Should the examination be marked fail, the committee may recommend that the candidate retake the examination after a minimum period of 12 weeks. A report of the committee's decision (Form D-3), carrying the signatures of all members of the committee, is sent to the Graduate School and to the student no later than two weeks after the comprehensive examination is terminated.

If a failure is reported, the committee also must include in the report an outline of the general weaknesses or deficiencies of the student's work. The student and the committee members are encouraged to work together to identify steps the student might take to become fully prepared for the next examination. If at any time the student believes that the advice given by the committee is inadequate, the student may send a written request for clarification to the committee. A copy of this request should be sent to the Graduate School. The committee must respond to this request in writing within two weeks with a copy to the Graduate School. Failure to pass two comprehensive examinations automatically prevents candidacy for the doctorate in theatre at MU.

## **Satisfactory Progress During and After Comps**

For the semester in which comprehensive examinations are taken and in semesters after comprehensive exams and orals are passed, satisfactory progress is maintained when, in the judgment of the student's dissertation adviser, the student is making satisfactory progress toward completion of the dissertation.

Students who leave MU having completed all but the dissertation must maintain continuous enrollment by registering for two semester hours of Dissertation Research each fall and spring term and one hour in the summer term. Failure to register negates a student's candidacy.

## **Graduate School Regulations on Satisfactory Progress**

The Graduate School regulations regarding a reasonable rate of progress for doctoral students are as follows:

### *Enrolled During or After Fall 2000*

Effective for students beginning their doctoral studies during or after Fall Semester 2000, a PhD student must successfully complete the comprehensive exam within a period of five years beginning with the first semester of enrollment as a PhD student. For an extension of this time limit, the student must petition the Graduate School by submitting a request to the adviser, who, in turns, submits, via the departmental director of graduate studies, a written recommendation to the Graduate School. The Theatre Department recommends taking comprehensive exams no later than the third year of consecutive full enrollment. Only students who have taken and passed their exams by May of their third year of assistantship will be considered for a fourth year of assistantship with the department.

All requests for extensions should be endorsed by the departmental director of graduate studies and should be accompanied by a description of the process whereby currency in the discipline is certified, if required by the department.

## **Completing the Dissertation**

The final step is completion and approval of the doctoral dissertation. The director of graduate studies can provide the student a copy of Guidelines for Preparing Theses and Dissertations.

## **Formatting**

Dissertations in the Department of Theatre should be formatted according to the latest edition of A Manual for Writers of Term Papers, Theses, and Dissertations, ed. Kate L. Turabian or the MLA Handbook; the chosen format must meet with the dissertation advisor's approval.

## **Graduate School Paperwork**

Form D-4, Report of the Doctoral Dissertation Defense, indicates that the student has defended the dissertation at an oral examination.

## **Advisory and Committee Approval of the Dissertation**

No draft of the dissertation can be considered a final draft until the adviser (First Reader) has approved it. All dissertation committee members must have at least 10 days to read the dissertation before the last date for oral

examination as published by the Graduate School. Unanimous approval of the dissertation by four committee members constitutes satisfactory completion of this examination.

## **Courses**

See Theater (THEATR) in the myZou on-line course catalogue.

# Gainful Employment Disclosures For “Stand Alone” Graduate Certificates

## Federal Disclosure Requirements for Stand Alone Graduate Certificates

“Final regulations published in the Federal Register on October 29, 2010, require institutions to report certain information about students who enrolled in Title IV eligible educational programs that lead to gainful employment in a recognized occupation (GE programs). **Those regulations also provide that institutions must disclose to prospective students certain information about the institution’s GE Programs.** Finally, the new regulations require institutions to notify the Department if they wish to add an additional GE Program to its list of Title IV eligible programs. All of these requirements are effective July 1, 2011.

The Secretary published additional regulations related to the program eligibility metrics that will be calculated for gainful employment programs in the Federal Register on June 13, 2011.”

Source: Federal Student Aid, see <http://www.ifap.ed.gov/GainfulEmploymentInfo/index.html>

## About Graduate Certificates @ Mizzou

To accommodate a variety of learners’ needs, Mizzou offers **stand-alone graduate certificates** and **degree-dependent graduate certificates**. Go to our [main certificate web page](#) to read about the distinction between the two certificate types, academic requirements, and how to apply.

Graduate students do not have to be enrolled in a degree program to earn a **stand alone** certificate. Thus, stand alone certificates are subject to the federal disclosure regulations.

These catalog pages provide federal disclosure information only. For additional academic information about each certificate, see our [main certificate page](#)

Full URL: <http://gradschool.missouri.edu/programs/graduate-certificates/certificate-programs.php>

## **Graduate Certificate: Analysis of Institutions and Organizations** [interdisciplinary]

**Officially approved as:**    **Stand Alone:** Yes    **Degree Dependent:** Yes

**Total Credit Hours:** 12

**Certificate description:** The Certificate Program focuses on the structures and processes of Institutions and Organizations in changing environments. Institutions are the “rules of the game” that shape human interaction and consist of both formal rules (e.g., legal-contractual) and informal structures (norms, values, and beliefs). Organizations are the concrete, humanly devised entities in which people interact and pursue goals, ranging from families to private and nonprofit firms and public agencies. This certificate emphasizes the common foundations of institutional analysis across academic disciplines including economics, sociology, political science, psychology, anthropology, geography, and law, as well as the ways that multidisciplinary perspectives can inform each other.

**Certificate web site:** <http://dass.missouri.edu/agecon/grad/dass-certificate-in-institutions-and-organizations.pdf>

**For information about certificate, contact:** Rural Sociology – Dr. David O'Brien – [obriendj@missouri.edu](mailto:obriendj@missouri.edu) (certificate director) and Dr. Jere Gille (Director of Graduate Studies); Agricultural and Applied Economics – Dr. Harvey James (Director of Graduate Studies)

**email:** Dr. O'Brien [obriendj@missouri.edu](mailto:obriendj@missouri.edu)

**Phone:** (573) 882-7451

**Address:** 109 Gentry Hall                      University of Missouri                      Columbia, MO                      65211

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### **Federal Disclosure**

**OPEID Code:** 002516

**CIP Code:** 45.1101

**Credential Level:** 04

**Months needed to complete certificate:** 12

**Students' on time graduation rate:** N/A (new)

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$3867; non resident tuition, \$9,190; Fees=\$1004 ( 2 semesters x \$502 per semester)

**Typical costs for books and supplies:** \$1350.00

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ N/A (new)

**Job placement rate for students who complete this certificate:** N/A (new)

**Related occupational codes begin on the next page >>**



## **Graduate Certificate: Autism and Neurodevelopmental Disorders [Interdisciplinary]**

**Officially approved as:**    **Stand Alone:** Yes    **Degree Dependent:** Yes

**Total Credit Hours:** 12

**Certificate description:** The certificate is designed to allow students from multiple disciplines to gain knowledge of the specialized needs of persons with autism and other developmental disorders. Professionals currently working with children with ASD and other Neurodevelopmental Disorders will enhance their skills, and those who wish to work with this population will enhance their future employability. Additionally, students might use the Certificate to learn about the field, perhaps leading to further graduate study and an advanced academic degree.

**Certificate web site:** <http://thompsoncenter.missouri.edu/training/interdisciplinary%20cert.php>

**For information about certificate, contact:** Thompson Center Autism and Neurodevelopmental Disorders

**email:**        [thompsoncenter@missouri.edu](mailto:thompsoncenter@missouri.edu)

**Phone:** (573) 882-0595

**Address:** 205 Portland Street    University of Missouri    Columbia, MO    65211

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### **Federal Disclosure**

**OPEID Code:** 002516

**CIP Code:** 51.1201

**Credential Level:** 04

**Months needed to complete certificate:** 24

**Students' on time graduation rate:** 100% (1 of 1)

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$3867; non resident tuition, \$9,190; Fees=\$2008 (4 semesters x \$502 per semester)

**Typical costs for books and supplies:** texts approx \$700.00

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ 0

**Job placement rate for students who complete this certificate:** 100%

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Interdisciplinary Certificate in Autism and Neurodevelopmental Disorders

**Occupational information:** Holders of this certificate generally enter into occupations related to education and training; health science, or human services. Related job profiles:

Name of Occupation	SOC Code	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Education Administrators, Elementary and Secondary School	11-9032.00	<a href="http://www.onetonline.org/link/summary/11-9032.00">http://www.onetonline.org/link/summary/11-9032.00</a>
Biomedical Engineers	17-2031.00	<a href="http://www.onetonline.org/link/summary/17-2031.00">http://www.onetonline.org/link/summary/17-2031.00</a>
Clinical Psychologists	19-3031.02	<a href="http://www.onetonline.org/link/summary/19-3031.02">http://www.onetonline.org/link/summary/19-3031.02</a>
Sociologists	19-3041.00	<a href="http://www.onetonline.org/link/summary/19-3041.00">http://www.onetonline.org/link/summary/19-3041.00</a>
Neuropsychologists and Clinical Neuropsychologists	19-3039.01	<a href="http://www.onetonline.org/link/summary/19-3039.01">http://www.onetonline.org/link/summary/19-3039.01</a>
Mental Health Counselors	21-1014.00	<a href="http://www.onetonline.org/link/summary/21-1014.00">http://www.onetonline.org/link/summary/21-1014.00</a>
Rehabilitation Counselors	21-1015.00	<a href="http://www.onetonline.org/link/summary/21-1015.00">http://www.onetonline.org/link/summary/21-1015.00</a>
Child, Family, and School Social Workers	21-1021.00	<a href="http://www.onetonline.org/link/summary/21-1021.00">http://www.onetonline.org/link/summary/21-1021.00</a>
Medical and Public health Social Workers	21-1022.00	<a href="http://www.onetonline.org/link/summary/21-1022.00">http://www.onetonline.org/link/summary/21-1022.00</a>
Social and Human Service Assistants	21-1093.00	<a href="http://www.onetonline.org/link/summary/21-1093.00">http://www.onetonline.org/link/summary/21-1093.00</a>
Elementary School Teachers, except Special Ed	25-2021.00	<a href="http://www.onetonline.org/link/summary/25-2021.00">http://www.onetonline.org/link/summary/25-2021.00</a>
Middle School Teachers, except Special & Voc Ed	25-2022.00	<a href="http://www.onetonline.org/link/summary/25-2022.00">http://www.onetonline.org/link/summary/25-2022.00</a>
Secondary School Teachers, except Special & Voc Ed	25-2022.00	<a href="http://www.onetonline.org/link/summary/25-2022.00">http://www.onetonline.org/link/summary/25-2022.00</a>

Special Education Teachers, Middle School	25-2042.00	<a href="http://www.onetonline.org/link/summary/25-2042.00">http://www.onetonline.org/link/summary/25-2042.00</a>
Licensed Practical and Licensed Vocational Nurses	29-2061.00	<a href="http://www.onetonline.org/link/summary/29-2061.00">http://www.onetonline.org/link/summary/29-2061.00</a>
Registered Nurses	29-1111.00	<a href="http://www.onetonline.org/link/summary/29-1111.00">http://www.onetonline.org/link/summary/29-1111.00</a>
Speech-Language Pathologists	29-1127.00	<a href="http://www.onetonline.org/link/summary/29-1127.00">http://www.onetonline.org/link/summary/29-1127.00</a>
Occupational Therapists	29-1122.00	<a href="http://www.onetonline.org/link/summary/29-1122.00">http://www.onetonline.org/link/summary/29-1122.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## **Graduate Certificate: Center for the Digital Globe (Interdisciplinary)**

**Officially approved as:**    **Stand Alone:** Yes    **Degree Dependent:** Yes

**Total Credit Hours:** 12

**Certificate description:** The Center for the Digital Globe, established by the College of Business, School of Journalism, School of Law and Department of Textile and Apparel Management in the College of Human Environmental Sciences, offers an interdepartmental certificate to non-degree graduate students and professional students of the University of Missouri-Columbia. The prerequisite for the stand-alone certificate is a baccalaureate degree. The certificate program supplements the students' studies within the various colleges and schools that make up the University. This certificate attests to the students' successful completion of a required course of study with emphasis on the managerial, theoretical and policy-related issues associated with digital media, electronic commerce and globalization.

**Certificate web site:** <http://cdig.missouri.edu/certificates.html#cert1>

**For information about certificate, contact:** Center for the Digital Globe

**email:** [cdig@missouri.edu](mailto:cdig@missouri.edu)

**Phone:** (573) 882-4991

**Address:** 310 Reynolds Journalism Institute University of Missouri Columbia, MO 65211

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### **Federal Disclosure**

**OPEID Code:** 002516

**CIP Code:** 52.0208

**Credential Level:** 04

**Months needed to complete certificate:** 12

**Students' on time graduation rate:** N/A [no completers 2010-2011]

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$3867; non resident tuition, \$9,190; Fees=\$1004 (2 semesters x \$502 per semester)

**Typical costs for books and supplies:** books approx \$700.00

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ N/A [no completers 2010-2011]

**Job placement rate for students who complete this certificate:** N/A [no completers 2010-2011]

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Center for the Digital Globe (Interdisciplinary)

**Occupational information:** Holders of this certificate generally enter into occupations related to communications; law; technology; business; and government. Ten related job profiles:

Name of Occupation	SOC Code	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Public Relations Managers	11-2031.00	<a href="http://www.onetonline.org/link/summary/11-2031.00">http://www.onetonline.org/link/summary/11-2031.00</a>
Human Resources Managers	11-3040.00	<a href="http://www.onetonline.org/link/summary/11-3040.00">http://www.onetonline.org/link/summary/11-3040.00</a>
Emergency Management Specialists	13-1061.00	<a href="http://www.onetonline.org/link/summary/13-1061.00">http://www.onetonline.org/link/summary/13-1061.00</a>
Security Management Specialists	13-1199.02	<a href="http://www.onetonline.org/link/summary/13-1199.02">http://www.onetonline.org/link/summary/13-1199.02</a>
Information Technology Project Managers	15-1099.11	<a href="http://www.onetonline.org/link/summary/15-1099.11">http://www.onetonline.org/link/summary/15-1099.11</a>
Electronic Commerce Specialists	15-1099.12	<a href="http://www.onetonline.org/link/summary/15-1099.12">http://www.onetonline.org/link/summary/15-1099.12</a>
Geospatial Information Scientists & Technologists	15-1099.06	<a href="http://www.onetonline.org/link/summary/15-1099.06">http://www.onetonline.org/link/summary/15-1099.06</a>
Computer Hardware Engineers	17-2061.00	<a href="http://www.onetonline.org/link/summary/17-2061.00">http://www.onetonline.org/link/summary/17-2061.00</a>
Urban and Regional Planners	19-3051.00	<a href="http://www.onetonline.org/link/summary/19-3051.00">http://www.onetonline.org/link/summary/19-3051.00</a>
Lawyers	23-1011.00	<a href="http://www.onetonline.org/link/summary/23-1011.00">http://www.onetonline.org/link/summary/23-1011.00</a>
Secondary School Teachers, Except Special and Vocational Education	25-2031.00	<a href="http://www.onetonline.org/link/summary/25-2031.00">http://www.onetonline.org/link/summary/25-2031.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Community Processes

**Officially approved as:** Stand Alone: Yes Degree Dependent: No

**Total Credit Hours:** 12

**Certificate description:** The Graduate Certificate in Community Processes offers graduate students and professionals a unique opportunity to develop expertise in how spatial and relational communities function in today’s society: their processes for forming, for maintaining the community and for achieving community objectives. A vital part of the certificate is acquiring applied skills in community facilitation processes or community analytical processes.

**Certificate web site:** <http://gradschool.missouri.edu/programs/catalog/community-processes/>

**For information about certificate, contact:** Offered jointly by the Departments of Agricultural Economics, Rural Sociology and the Truman School of Public Affairs

**email:**

**Phone:** 573-882-6455

**Address:** 231 Gentry Hall University of Missouri Columbia, MO 65211

### Federal Disclosure

**OPEID Code:** 002516

**CIP Code:** 44.0201

**Credential Level:** 04

**Months needed to complete certificate:** 24

**Students’ on time graduation rate:** 100% (1 of 1)

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$3867; non resident tuition, \$9,190; Fees=\$2008 (4 semesters x \$502 per semester)

**Typical costs for books and supplies:** \$700.00

**Cost of room and board, if applicable:** \$ Courses RS 7341, 7342 9734 are offered off campus; students incur an additional \$250 to \$625 for room and board for each course.

**University of Missouri Cashier’s Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ 0

**Job placement rate for students who complete this certificate:** 100% (1 of 1)

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Community Processes

**Occupational information:** Holders of this certificate generally enter into occupations related to economics; regional planning; community managers; social science research; or education. Ten related job profiles:

Name of Occupation	SOC Code	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Training and Development Managers	11-3042.00	<a href="http://www.onetonline.org/link/summary/11-3042.00">http://www.onetonline.org/link/summary/11-3042.00</a>
Social and Community Service Managers	11-9151.00	<a href="http://www.onetonline.org/link/summary/11-9151.00">http://www.onetonline.org/link/summary/11-9151.00</a>
Training and Development Specialists	13-1073.00	<a href="http://www.onetonline.org/link/summary/13-1073.00">http://www.onetonline.org/link/summary/13-1073.00</a>
Sociologists	19-3041.00	<a href="http://www.onetonline.org/link/summary/19-3041.00">http://www.onetonline.org/link/summary/19-3041.00</a>
Social Science Research Assistants	19-4061.00	<a href="http://www.onetonline.org/link/summary/19-4061.00">http://www.onetonline.org/link/summary/19-4061.00</a>
City and Regional Planning Aides	19-4061.01	<a href="http://www.onetonline.org/link/summary/19-4061.01">http://www.onetonline.org/link/summary/19-4061.01</a>
Health Educators	21-1091.00	<a href="http://www.onetonline.org/link/summary/21-1091.00">http://www.onetonline.org/link/summary/21-1091.00</a>
Religious workers, all other	21-2099.00	<a href="http://www.onetonline.org/link/summary/21-2099.00">http://www.onetonline.org/link/summary/21-2099.00</a>
Community and Social Service Specialists, All Other	21-1099.00	<a href="http://www.onetonline.org/link/summary/21-1099.00">http://www.onetonline.org/link/summary/21-1099.00</a>
Statistical Assistants	43-9111.00	<a href="http://www.onetonline.org/link/summary/43-9111.00">http://www.onetonline.org/link/summary/43-9111.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Education Policy

Officially approved as: **Stand Alone:** Yes **Degree Dependent:** Yes

**Total Credit Hours:** 12

**Certificate description:** The objectives of the Education Policy Graduate Certificate Program will be to provide students with (a) knowledge they can apply to the study of education policy within their major discipline or to their work in policy settings; (b) skills in analyzing education policy issues, i.e., understanding differing values, political and economic arguments, costs/benefits, and policy processes and (c) conceptual tools to use in understanding and resolving policy implementation problems.

**Certificate web site:**

[http://education.missouri.edu/ELPA/program\\_areas/degree\\_pages/policy\\_studies\\_certificate.php](http://education.missouri.edu/ELPA/program_areas/degree_pages/policy_studies_certificate.php)

**For information about certificate, contact:** Department of Educational Leadership & Policy Analysis

**email:** [elpagrad@missouri.edu](mailto:elpagrad@missouri.edu)

**Phone:** 573-882-8221

**Address:** 202 Hill Hall University of Missouri Columbia, MO 65211

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### Federal Disclosure

**OPEID Code:** 002516

**CIP Code:** 13.0401

**Credential Level:** 04

**Months needed to complete certificate:** 21

**Students' on time graduation rate:** N/A [no completers 2010-2011]

**Tuition & fees for completing this program within normal time** Tuition, resident = \$3867; non resident tuition, \$9,190; Fees=\$2,008 (4 semesters x \$502 per semester)

**Typical costs for books and supplies:** books approx \$700.00

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ N/A [no completers 2010-2011]

**Job placement rate for students who complete this certificate:** N/A [no completers 2010-2011]

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Education Policy

**Occupational information:** Holders of this certificate generally enter into occupations related to education and training; health science, or human services. Related job profiles:

Name of Occupation	SOC Code	View Occupational Profile on <a href="#">O*Net</a>
Legislators	11-1031.00	<a href="http://www.onetonline.org/link/summary/11-1031.00">http://www.onetonline.org/link/summary/11-1031.00</a>
Education Administrators, Elementary and Secondary School	11-9032.00	<a href="http://www.onetonline.org/link/summary/11-9032.00">http://www.onetonline.org/link/summary/11-9032.00</a>
Education Administrators, Postsecondary	11-9033.00	<a href="http://www.onetonline.org/link/summary/11-9033.00">http://www.onetonline.org/link/summary/11-9033.00</a>
Education Administrators, Preschool and Child Care Center/Program	11-9031.00	<a href="http://www.onetonline.org/link/summary/11-9031.00">http://www.onetonline.org/link/summary/11-9031.00</a>
Distance Learning Coordinators	11-9039.01	<a href="http://www.onetonline.org/link/summary/11-9039.01">http://www.onetonline.org/link/summary/11-9039.01</a>
Political Scientists	19-3094.00	<a href="http://www.onetonline.org/link/summary/19-3094.00">http://www.onetonline.org/link/summary/19-3094.00</a>
Education Teachers, Postsecondary	25-1081.00	<a href="http://www.onetonline.org/link/summary/25-1081.00">http://www.onetonline.org/link/summary/25-1081.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Food Safety and Defense

Officially approved as:    **Stand Alone:** Yes    **Degree Dependent:** No

**Total Credit Hours:** 12

**Certificate description:** In an era of global food systems and heightened, effective control of foodborne hazards requires strategic knowledge. There is an urgent need for food industry personnel who, while working fulltime, would like to pursue more in-depth specialized training in food safety and security that is pertinent to their job. This certificate will help serve the needs of industry and agencies that must protect the human food supply from accidental or deliberate contamination with pathogenic microbes and/or toxicants.

**Certificate web site:** <http://foodscience.missouri.edu/graduate/foodsafetycert.php>

**For information about certificate, contact:** This is an inter-institutional certificate offered in cooperation with Kansas State University Food Science Institute, University of Nebraska-Lincoln Food Science and Iowa State University Food Science programs. Primary contact is Dr. Azlin Mustapha, Director of Certificate Studies and Associate Professor Food Science Program at the University of Missouri.

**email:** [MustaphaA@missouri.edu](mailto:MustaphaA@missouri.edu)

**Phone:** 573-882-2649

**Address:** 256 William Stringer Wing    University of Missouri    Columbia, MO    65211

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### Federal Disclosure

**OPEID Code:** 002516

**CIP Code:** 19.0501

**Credential Level:** 04

**Months needed to complete certificate:** 36

**Students' on time graduation rate:** N/A [no MU completers 2010-2011]

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$3867; non resident tuition, \$9,190; Fees=\$3012 (6 semesters x \$502 per semester)

**Typical costs for books and supplies:** books (usually not required) approx \$700.00

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ N/A [no MU completers 2010-2011]

**Job placement rate for students who complete this certificate:** N/A [no MU completers 2010-2011]

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Food Safety and Defense

**Occupational information:** Holders of this certificate generally enter into occupations related to agriculture and food; government; education and training; public safety, and science. Ten related job profiles:

Name of Occupation	SOC Code	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Crop and Livestock Managers	11-9011.02	<a href="http://www.onetonline.org/link/summary/11-9011.02">http://www.onetonline.org/link/summary/11-9011.02</a>
Environmental Compliance Inspectors	13-1041.01	<a href="http://www.onetonline.org/link/summary/13-1041.01">http://www.onetonline.org/link/summary/13-1041.01</a>
Emergency Management Specialists	13-1061.00	<a href="http://www.onetonline.org/link/summary/13-1061.00">http://www.onetonline.org/link/summary/13-1061.00</a>
Biochemical Engineers	17-2199.01	<a href="http://www.onetonline.org/link/summary/17-2199.01">http://www.onetonline.org/link/summary/17-2199.01</a>
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	17-2111.00	<a href="http://www.onetonline.org/link/summary/17-2111.00">http://www.onetonline.org/link/summary/17-2111.00</a>
Food Scientists and Technologists	19-1012.00	<a href="http://www.onetonline.org/link/summary/19-1012.00">http://www.onetonline.org/link/summary/19-1012.00</a>
Food Science Technicians	19-4011.02	<a href="http://www.onetonline.org/link/summary/19-4011.02">http://www.onetonline.org/link/summary/19-4011.02</a>
Quality Control Analysts	19-4099.01	<a href="http://www.onetonline.org/link/summary/19-4099.01">http://www.onetonline.org/link/summary/19-4099.01</a>
Occupational Health and Safety Specialists	29-9011.00	<a href="http://www.onetonline.org/link/summary/29-9011.00">http://www.onetonline.org/link/summary/29-9011.00</a>
Agricultural Inspectors	45-2011.00	<a href="http://www.onetonline.org/link/summary/45-2011.00">http://www.onetonline.org/link/summary/45-2011.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## **Graduate Certificate: Geographical Information Science (Interdisciplinary)**

**Officially approved as:** Stand Alone: Yes      **Degree Dependent:** No

**Total Credit Hours:** 16

**Certificate description:** Students from a wide range of disciplines will benefit from students with the theoretical, practical and technical skills that are essential for the analysis of spatial data. Learners become proficient in the use and application of GIS technologies through a flexible set of courses and hands-on experiences. The program offers the training and experience necessary to prepare for the rapidly expanding professional opportunities available in the diverse set of fields that depend on geographic information.

**Certificate web site:** <http://www.geog.missouri.edu/giscert/grad.html>

**For information about certificate, contact:** Dr. Mark Palmer (Department of Geography) or Dr. Hong He (School of Natural Resources).

**Dr. Palmer’s email:** [palmerMh@missouri.edu](mailto:palmerMh@missouri.edu)      **Phone:** 573.884.7940  
**Address:** 10b Stewart Hall University of Missouri      Columbia, MO 65211

**Dr. He’s email:** [heh@missouri.edu](mailto:heh@missouri.edu)      **Phone:** 573.882.7717  
**Address:** 203 ABNR University of Missouri      Columbia, MO 65211

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### **Federal Disclosure**

**OPEID Code:** 002516      **CIP Code:** 45.0701      **Credential Level:** 04

**Months needed to complete certificate:** 12

**Students’ on time graduation rate:** 70% (14 of 20)

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$5,264; non resident tuition, \$12,716; Fees=\$1106 (2 semesters x \$553 per semester)

**Typical costs for books and supplies:** Poster printing fee \$20; books approx \$700.00

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier’s Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ 0 (\$2,067 average)

**Job placement rate for students who complete this certificate:** not known; most students were enrolled in graduate degree programs that track them.

**Related occupational codes begins on the next page >>**

**Graduate Certificate:** Geographical Information Science (Interdisciplinary)

**Occupational information:** Holders of this certificate generally enter into occupations related to education and training; health science, or human services. Ten related job profiles: geography forestry natural resource pu affairs landscaping

Name of Occupation	SOC Code	View Occupational Profile on <a href="#">O*Net</a>
Geospatial Information Scientists and Technologists	15-1099.06	<a href="http://www.onetonline.org/link/summary/15-1099.06">http://www.onetonline.org/link/summary/15-1099.06</a>
Geographic Information Systems Technicians	15-1099.07	<a href="http://www.onetonline.org/link/summary/15-1099.07">http://www.onetonline.org/link/summary/15-1099.07</a>
Landscape Architects	17-1012.00	<a href="http://www.onetonline.org/link/summary/17-1012.00">http://www.onetonline.org/link/summary/17-1012.00</a>
Cartographers and Photogrammetrists	17-1021.00	<a href="http://www.onetonline.org/link/summary/17-1021.00">http://www.onetonline.org/link/summary/17-1021.00</a>
Remote Sensing Scientists and Technologists	19-2099.01	<a href="http://www.onetonline.org/link/summary/19-2099.01">http://www.onetonline.org/link/summary/19-2099.01</a>
Environmental Restoration Planners	19-2041.02	<a href="http://www.onetonline.org/link/summary/19-2041.02">http://www.onetonline.org/link/summary/19-2041.02</a>
Geographers	19-3092.00	<a href="http://www.onetonline.org/link/summary/19-3092.00">http://www.onetonline.org/link/summary/19-3092.00</a>
City and Regional Planning Aides	19-4061.01	<a href="http://www.onetonline.org/link/summary/19-4061.01">http://www.onetonline.org/link/summary/19-4061.01</a>
Precision Agriculture Technicians	19-4099.02	<a href="http://www.onetonline.org/link/summary/19-4099.02">http://www.onetonline.org/link/summary/19-4099.02</a>
Intelligence Analysts	33-3021.06	<a href="http://www.onetonline.org/link/summary/33-3021.06">http://www.onetonline.org/link/summary/33-3021.06</a>
Forest and Conservation Workers	45-4011.00	<a href="http://www.onetonline.org/link/summary/45-4011.00">http://www.onetonline.org/link/summary/45-4011.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Geriatric Care Management

**Officially approved as:**    **Stand Alone:** Yes    **Degree Dependent:** No

**Total Credit Hours:** 12

**Certificate description:** The Geriatric Care Management certificate is a web-based, four course certificate designed for those who provide independent case management services to elder Americans or who wish to do so in the future. The certificate provides an educational credential in addition to preparing students to sit for certification examinations given by national credentialing organizations.

**Certificate web site:** *under development*

**For information about certificate, contact:** Cynthia S. Reeser, Ph.D.

**Phone:** 573-882-5617

**Email:** reeserc@missouri.edu

**Address:** Department of Human Development and Family Studies, College of Human Environmental Sciences  
314 Gentry Hall, Columbia, MO 65211

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### Federal Disclosure

**OPEID Code:** 002516

**CIP Code:** 60.0222

**Credential Level:** 04

**Months needed to complete certificate:** 12

**Students' on time graduation rate:** N/A [new certificate 8.26.2011]

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$3867; non resident tuition, \$9,190; Fees=\$1004 (2 semesters x \$502 per semester)

**Typical costs for books and supplies:** [new certificate, to be determined by program].

**Cost of room and board, if applicable:** \$ N/A [new certificate]

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ N/A [new certificate]

**Job placement rate for students who complete this certificate:** N/A [new certificate]

**Related occupational codes begin on the next page >>**

## Graduate Certificate: Geriatric Care Management

**Occupational information:** Holders of this certificate generally have prior professional experience or education in occupations related to nursing, health care, social assistance professions, health science, or human services. Related job profiles:

<b>Name of Occupation</b>	<b>SOC Code</b>	<b>View Occupational Profile on <a href="#">O*Net</a></b>
Social and Community Service Managers	11-9151.00	<a href="http://www.onetonline.org/link/summary/11-9151.00">http://www.onetonline.org/link/summary/11-9151.00</a>
Mental Health Counselors	21-1014.00	<a href="http://www.onetonline.org/link/summary/21-1014.00">http://www.onetonline.org/link/summary/21-1014.00</a>
Social Workers – All Others	21.1029.00	<a href="http://www.onetonline.org/link/summary/21.1029.00">http://www.onetonline.org/link/summary/21.1029.00</a>
Community and Social Service Specialists- All Others	21-1099.00	<a href="http://www.onetonline.org/link/summary/21-1099.00">http://www.onetonline.org/link/summary/21-1099.00</a>
Rehabilitation Counselors	21-1015.00	<a href="http://www.onetonline.org/link/summary/21-1015.00">http://www.onetonline.org/link/summary/21-1015.00</a>
Protective Service Workers – All Others	33-9099.00	<a href="http://www.onetonline.org/link/summary/33-9099.00">http://www.onetonline.org/link/summary/33-9099.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Gerontology

Officially approved as:    **Stand Alone:** Yes    **Degree Dependent:** No

**Total Credit Hours:** 21

**Certificate description:** A certificate in gerontology is ideal for professionals in a variety of aging-related fields. Areas include senior-services organizations like centers on aging; senior centers; nursing homes; assisted, independent, and aging-in-place living facilities; non-profit organizations; faith-based groups; and extension educators.

**Certificate web site:** [http://hdfs.missouri.edu/prospective\\_graduate.html#onlineprograms](http://hdfs.missouri.edu/prospective_graduate.html#onlineprograms)

**For information about certificate, contact:** Department of Human Development and Family Studies  
**email:** [colemanma@missouri.edu](mailto:colemanma@missouri.edu)

**Phone:** 573-882-4035

**Address:** 314 Gentry, University of Missouri      Columbia, MO      65211

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### Federal Disclosure

**OPEID Code:** 002516

**CIP Code:** 30.1101

**Credential Level:** 04

**Months needed to complete certificate:** 30

**Students' on time graduation rate:** N/A [new certificate]

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$7,009; non resident tuition, \$17,123; Fees=\$3,696 (6 semesters x \$616 per semester)

**Typical costs for books and supplies:** books approx \$700.00

**Cost of room and board, if applicable:** \$ N/A [new certificate]

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ N/A [new certificate]

**Job placement rate for students who complete this certificate:** N/A [new certificate]

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Gerontology

**Occupational information:** Holders of this certificate generally enter into occupations related to nursing, health care, social assistance, professions, health science, or human services. Ten related job profiles:

Name of Occupation	SOC Code	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Clinical Nurse Specialists	11-9111.01	<a href="http://www.onetonline.org/link/summary/11-9111.01">http://www.onetonline.org/link/summary/11-9111.01</a>
Medical Scientists, Except Epidemiologists	19-1042.00	<a href="http://www.onetonline.org/link/summary/19-1042.00">http://www.onetonline.org/link/summary/19-1042.00</a>
Marriage and Family Therapists	21-1013.00	<a href="http://www.onetonline.org/link/summary/21-1013.00">http://www.onetonline.org/link/summary/21-1013.00</a>
Health Educators	21-1091.00	<a href="http://www.onetonline.org/link/summary/21-1091.00">http://www.onetonline.org/link/summary/21-1091.00</a>
Social and Human Service Assistants	21-1093.00	<a href="http://www.onetonline.org/link/summary/21-1093.00">http://www.onetonline.org/link/summary/21-1093.00</a>
Registered Nurses	29-1111.00	<a href="http://www.onetonline.org/link/summary/29-1111.00">http://www.onetonline.org/link/summary/29-1111.00</a>
Nurse Practitioners	29-1199.03	<a href="http://www.onetonline.org/link/summary/29-1199.03">http://www.onetonline.org/link/summary/29-1199.03</a>
Physical Therapists	29-1123.00	<a href="http://www.onetonline.org/link/summary/29-1123.00">http://www.onetonline.org/link/summary/29-1123.00</a>
Respiratory Therapists	29-1126.00	<a href="http://www.onetonline.org/link/summary/29-1126.00">http://www.onetonline.org/link/summary/29-1126.00</a>
Psychiatric Technicians	29-2053.00	<a href="http://www.onetonline.org/link/summary/29-2053.00">http://www.onetonline.org/link/summary/29-2053.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Gerontological Social Work

Officially approved as:    **Stand Alone:** Yes    **Degree Dependent:** No

**Total Credit Hours:** 12

**Certificate description:** Participants in the Gerontological Social Work Certificate program will build awareness and expertise for work in settings that serve older adults and their families. Participants will be trained in micro, mezzo, macro and clinical strategies known to be effective in work with older adults and their families. An interdisciplinary, multi-level emphasis will be provided in the program since a large component of elder care is the coordination and management of services provided by various disciplines. Course work will utilize a bio-psycho-social-cultural perspective emphasizing the ecological perspective, Lawton’s theory of environmental press, resiliency, and the functional age model of family work. In addition, students will build awareness of aging policies and services, and policies that impact persons with disabilities and women.

**Certificate web site:** [http://ssw.missouri.edu/msw\\_certificates.shtml](http://ssw.missouri.edu/msw_certificates.shtml)

**For information about certificate, contact:** Colleen Galambos, [galambosc@missouri.edu](mailto:galambosc@missouri.edu) 882-3701 or Crystal Null, [nullc@missouri.edu](mailto:nullc@missouri.edu) 884-9385

**Address:** University of Missouri School of Social Work, 7<sup>th</sup> Floor Clark Hall, Columbia, MO 65211

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### Federal Disclosure

**OPEID Code:** 002516

**CIP Code:** 44.0701

**Credential Level:** 04

**Months needed to complete certificate:** 12

**Students’ on time graduation rate:** N/A [new certificate 8.26.2011]

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$3867; non resident tuition, \$9,190; Fees=\$1004 (2 semesters x \$502 per semester)

**Tuition & fees for *Social Work graduate students also enrolled in the degree program:*** tuition and fees may be higher for both resident and non-resident students. However, MSW degree students may use their elective and selective options to obtain the certificate.

**Typical costs for books and supplies:** books approx \$1,000.

**Cost of room and board, if applicable:** \$ N/A [new certificate]

**University of Missouri Cashier’s Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ N/A [new certificate]

**Job placement rate for students who complete this certificate:** N/A [new certificate]

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Gerontological Social Work

**Occupational information:** Holders of this certificate generally enter into occupations related to nursing, health care, social assistance, professions, health science, or human services. Ten related job profiles:

Name of Occupation	SOC Code	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Social Scientists and Related Workers – All Others	19-3099.00	<a href="http://www.onetonline.org/link/summary/19-3099.00">http://www.onetonline.org/link/summary/19-3099.00</a>
Social and Community Service Managers	11-9151.00	<a href="http://www.onetonline.org/link/summary/11-9151.00">http://www.onetonline.org/link/summary/11-9151.00</a>
Mental Health Counselors	21-1014.00	<a href="http://www.onetonline.org/link/summary/21-1014.00">http://www.onetonline.org/link/summary/21-1014.00</a>
Medical & Public Health Social Workers	21-1022.00	<a href="http://www.onetonline.org/link/summary/21-1022.00">http://www.onetonline.org/link/summary/21-1022.00</a>
Mental Health & Substance Abuse Social Workers	21-1023.00	<a href="http://www.onetonline.org/link/summary/21-1023.00">http://www.onetonline.org/link/summary/21-1023.00</a>
Social Workers – All Others	21.1029.00	<a href="http://www.onetonline.org/link/summary/21.1029.00">http://www.onetonline.org/link/summary/21.1029.00</a>
Community and Social Service Specialists- All Others	21-1099.00	<a href="http://www.onetonline.org/link/summary/21-1099.00">http://www.onetonline.org/link/summary/21-1099.00</a>
Marriage and Family Therapists	21-1013.00	<a href="http://www.onetonline.org/link/summary/21-1013.00">http://www.onetonline.org/link/summary/21-1013.00</a>
Rehabilitation Counselors	21-1015.00	<a href="http://www.onetonline.org/link/summary/21-1015.00">http://www.onetonline.org/link/summary/21-1015.00</a>
Protective Service Workers – All Others	33-9099.00	<a href="http://www.onetonline.org/link/summary/33-9099.00">http://www.onetonline.org/link/summary/33-9099.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Grantsmanship

Officially approved as:    **Stand Alone:** Yes    **Degree Dependent:** Yes

**Total Credit Hours:** 12

**Certificate description:** The Truman School offers the only graduate grant writing certificate program in the country. Students learn to write grant proposals and manage grant-funded programs effectively. Learn winning grant writing techniques and proper grant management with this four-course graduate certificate in grantsmanship. As a completely online certificate program, our program is well-suited for a variety of audiences, including both working professionals, graduate students, and postdoctoral fellows. Community-based professionals in nonprofit organizations, employees of state and local government, educators in K-12 settings, graduate students, postdoctoral fellows, and young faculty members—anyone working in or seeing careers with organizations and activities that are dependent on external funding will benefit from this program. Students with graduate standing in any field are eligible to enroll. Students do not need to be enrolled in a specific graduate degree program to participate in the program.

**Certificate web site:** <http://truman.missouri.edu/ProspectiveStudents/GraduateCertificates/Grantsmanship>

**For information about certificate, contact:** Truman School of Public Affairs

**email:** [Truman@missouri.edu](mailto:Truman@missouri.edu)

**Phone:** (573) 884-1656

**Address:** 101 Middlebush Hall    University of Missouri    Columbia, MO    65211

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### Federal Disclosure

**OPEID Code:** 002516

**CIP Code:** 44.0401

**Credential Level:** 04

**Months needed to complete certificate:** 14

**Students' on time graduation rate:** 100% (5 of 5)

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$3867; nonresident tuition, \$9,190; Fees=\$1506 (3 semesters x \$502 per semester)

**Typical costs for books and supplies:** \$ Books and computing fees, \$200

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ \$6,892 (\$6,892 average)

**Job placement rate for students who complete this certificate:** 100% (5 of 5)

Related occupational codes begin on the next page >>

**M Gainful Employment Disclosure for “Stand Alone” Graduate Certificates**  
**Published as part of the University of Missouri Graduate Catalog 2012-2013**

**Graduate Certificate:** Grantsmanship

**Occupational information:** Holders of this certificate generally enter into occupations related to nonprofit management; education; local or state government; research/science and human services. Ten illustrative job profiles:

Name of Occupation	SOC Code	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
General and Operations Managers	11-1021.00	<a href="http://www.onetonline.org/link/summary/11-1021.00">http://www.onetonline.org/link/summary/11-1021.00</a>
Education Administrators, Elementary and Secondary School	11-9032.00	<a href="http://www.onetonline.org/link/summary/11-9032.00">http://www.onetonline.org/link/summary/11-9032.00</a>
Education Administrators, Postsecondary	11-9033.00	<a href="http://www.onetonline.org/link/summary/11-9033.00">http://www.onetonline.org/link/summary/11-9033.00</a>
Social and Community Service Managers	11-9151.00	<a href="http://www.onetonline.org/link/summary/11-9151.00">http://www.onetonline.org/link/summary/11-9151.00</a>
Compliance Managers	11-9199.02	<a href="http://www.onetonline.org/link/summary/11-9199.02">http://www.onetonline.org/link/summary/11-9199.02</a>
Life Scientists, All Other	19-1099.00	<a href="http://www.onetonline.org/link/summary/19-1099.00">http://www.onetonline.org/link/summary/19-1099.00</a>
City and Regional Planning Aides	19-4061.01	<a href="http://www.onetonline.org/link/summary/19-4061.01">http://www.onetonline.org/link/summary/19-4061.01</a>
Child, Family, and School Social Workers	21-1021.00	<a href="http://www.onetonline.org/link/summary/21-1021.00">http://www.onetonline.org/link/summary/21-1021.00</a>
Secondary School Teachers, Except Special and Vocational Education	25-2031.00	<a href="http://www.onetonline.org/link/summary/25-2031.00">http://www.onetonline.org/link/summary/25-2031.00</a>
Technical Writers	27-3042.00	<a href="http://www.onetonline.org/link/summary/27-3042.00">http://www.onetonline.org/link/summary/27-3042.00</a>
Eligibility Interviewers, Government Programs	43-4061.00	<a href="http://www.onetonline.org/link/summary/43-4061.00">http://www.onetonline.org/link/summary/43-4061.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Health Ethics

**Officially approved as:**    **Stand Alone:** Yes    **Degree Dependent:** No

**Total Credit Hours:** 12

**Certificate description:** The certificate program is ideal for working professionals such as physicians, nurses, healthcare administrators, those serving on hospital ethics committees or considering such health ethics issues in their daily employment, and students in the health professions. The certificate program will help the learner develop an understanding of the ethical issues related to health and healthcare and will foster skill in analyzing and resolving ethical problems and conflicts in the healthcare environment.

**Certificate web site:** <http://ethics.missouri.edu/HECertificate.aspx>

**For information about certificate, contact:** Candace Garb, MHA, Director of Student Services, Department of Health Management & Informatics

**email:** [garbc@health.missouri.edu](mailto:garbc@health.missouri.edu)

**Phone:** (573) 882-1849

**Address:** Center for Health Ethics, University of Missouri Columbia, MO 65211

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### Federal Disclosure

**OPEID Code:** 002516

**CIP Code:** 51.2201

**Credential Level:** 04

**Months needed to complete certificate:** 24

**Students' on time graduation rate:** N/A [new certificate]

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$3867; non resident tuition, \$9,190; Fees=\$2008 (4 semesters x \$502 per semester)

**Typical costs for books and supplies:** books approx \$700.00

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ N/A [new certificate]

**Job placement rate for students who complete this certificate:** N/A [new certificate]

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Health Ethics

**Occupational information:** Holders of this certificate generally enter into occupations related to health science; health care; social assistance; protective service or other human services. Illustrative job profiles:

Name of Occupation	SOC Code	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Medical and Health Services Managers	11-9111.00	<a href="http://www.onetonline.org/link/summary/11-9111.00">http://www.onetonline.org/link/summary/11-9111.00</a>
Compliance Managers	11-9199.02	<a href="http://www.onetonline.org/link/summary/11-9199.02">http://www.onetonline.org/link/summary/11-9199.02</a>
Informatics Nurse Specialists	15-1051.01	<a href="http://www.onetonline.org/link/summary/15-1051.01">http://www.onetonline.org/link/summary/15-1051.01</a>
Medical Scientists, Except Epidemiologists	19-1042.00	<a href="http://www.onetonline.org/link/summary/19-1042.00">http://www.onetonline.org/link/summary/19-1042.00</a>
Medical and Public Health Social Workers	21-1022.00	<a href="http://www.onetonline.org/link/summary/21-1022.00">http://www.onetonline.org/link/summary/21-1022.00</a>
Health Educators	21-1091.00	<a href="http://www.onetonline.org/link/summary/21-1091.00">http://www.onetonline.org/link/summary/21-1091.00</a>
Family and General Practitioners	29-1062.00	<a href="http://www.onetonline.org/link/summary/29-1062.00">http://www.onetonline.org/link/summary/29-1062.00</a>
Critical Care Nurses	29-1111.03	<a href="http://www.onetonline.org/link/summary/29-1111.03">http://www.onetonline.org/link/summary/29-1111.03</a>
Medical Records and Health Information Technicians	29-2071.00	<a href="http://www.onetonline.org/link/summary/29-2071.00">http://www.onetonline.org/link/summary/29-2071.00</a>
Genetic Counselors	29-9099.02	<a href="http://www.onetonline.org/link/summary/29-9099.02">http://www.onetonline.org/link/summary/29-9099.02</a>
Patient Representatives	43-4051.03	<a href="http://www.onetonline.org/link/summary/43-4051.03">http://www.onetonline.org/link/summary/43-4051.03</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

**Graduate Certificate:** Health Informatics

**Officially approved as:**    **Stand Alone:** Yes    **Degree Dependent:** No

**Total Credit Hours:** 12

**Certificate description:** The Graduate Certificate in Health Informatics offered by the Department of Health Management and Informatics provides learners with the skills necessary to participate in the selection, use, and evaluation of information technology applications throughout the health services industry. The certificate program is designed for physicians, nurses, managers, information system designers, consultants, and others committed to the application of information technology for improving the quality, safety, and efficiency of health services.

**Certificate web site:** [http://hmi.missouri.edu/prospective/informatics\\_certificate\\_description.html](http://hmi.missouri.edu/prospective/informatics_certificate_description.html)

**For information about certificate, contact:** Veronica Kramer, MPA., Coordinator of Student Recruitment & Admissions, Department of Health Management and Informatics

**email:** [kramerv@health.missouri.edu](mailto:kramerv@health.missouri.edu)    **Phone:** (573) 884-0698

**Address:** CE707 Clinical Support & Education Building, DC006.00  
University of Missouri    Columbia, MO    65212

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**Federal Disclosure**

**OPEID Code:** 002516

**CIP Code:** 51.9999

**Credential Level:** 04

**Months needed to complete certificate:** 12

**Students' on time graduation rate:** 50% (1 of 2)

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$3867; non resident tuition, \$9,190; Fees=\$1004 (2 semesters x \$502 per semester)

**Typical costs for books and supplies:** \$ 700 approx

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ 0

**Job placement rate for students who complete this certificate:** 50% (1 of 2)

**Related occupational codes begin on the next page >>**

# Gainful Employment Disclosure for “Stand Alone” Graduate Certificates

Published as part of the University of Missouri Graduate Catalog 2012-2013

## Graduate Certificate: Health Informatics

**Occupational information:** Holders of this certificate generally enter into occupations related to health care; technology; health science; and human services. Ten related job profiles:

Name of Occupation	SOC Code	View Occupational Profile on <a href="#">O*Net</a>
Computer and Information Systems Managers	11-3021.00	<a href="http://www.onetonline.org/link/summary/11-3021.00">http://www.onetonline.org/link/summary/11-3021.00</a>
Medical and Health Services Managers	11-9111.00	<a href="http://www.onetonline.org/link/summary/11-9111.00">http://www.onetonline.org/link/summary/11-9111.00</a>
Computer Support Specialists	15-1041.00	<a href="http://www.onetonline.org/link/summary/15-1041.00">http://www.onetonline.org/link/summary/15-1041.00</a>
Informatics Nurse Specialists	15-1051.01	<a href="http://www.onetonline.org/link/summary/15-1051.01">http://www.onetonline.org/link/summary/15-1051.01</a>
Database Administrators	15.1061.00	<a href="http://www.onetonline.org/link/summary/15-1061.00">http://www.onetonline.org/link/summary/15-1061.00</a>
Information Technology Project Managers	15-1099.11	<a href="http://www.onetonline.org/link/summary/15-1099.11">http://www.onetonline.org/link/summary/15-1099.11</a>
Medical Scientists, Except Epidemiologists	19-1042.00	<a href="http://www.onetonline.org/link/summary/19-1042.00">http://www.onetonline.org/link/summary/19-1042.00</a>
Bioinformatics Scientists	19-1029.01	<a href="http://www.onetonline.org/link/summary/19-1029.01">http://www.onetonline.org/link/summary/19-1029.01</a>
Medical and Public Health Social Workers	21-1022.00	<a href="http://www.onetonline.org/link/summary/21-1022.00">http://www.onetonline.org/link/summary/21-1022.00</a>
Health Educators	21-1091.00	<a href="http://www.onetonline.org/link/summary/21-1091.00">http://www.onetonline.org/link/summary/21-1091.00</a>
Medical Records and Health Information Technicians	29-2071.00	<a href="http://www.onetonline.org/link/summary/29-2071.00">http://www.onetonline.org/link/summary/29-2071.00</a>
Patient Representatives	43-4051.03	<a href="http://www.onetonline.org/link/summary/43-4051.03">http://www.onetonline.org/link/summary/43-4051.03</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Higher Education Administration

Officially approved as:    **Stand Alone:** Yes    **Degree Dependent:** Yes

**Total Credit Hours:** 12

**Certificate description:** The Graduate Certificate in Higher Education Administration is designed to address the need for enhanced understanding of the higher education institutional context and for improved skills in areas required for effective administration of the higher education administration and governance and some technical knowledge about various aspects of administration (i.e., budget and finance, higher education law). Students also enhance understanding and skills in a relevant area of administrative practice (e.g., program planning for continuing educators, student affairs administration for student affairs professionals, the community college for community college administrators).

**Certificate web site:**

[http://education.missouri.edu/ELPA/program\\_areas/degree\\_pages/HACE\\_certificate.php](http://education.missouri.edu/ELPA/program_areas/degree_pages/HACE_certificate.php)

**For information about certificate, contact:** Department of Educational Leadership & Policy Analysis

**email:** [elpagrad@missouri.edu](mailto:elpagrad@missouri.edu)                      **Phone:** 573-882-8221

**Address:** 202 Hill Hall    University of Missouri                      Columbia, MO                      65211

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### Federal Disclosure

**OPEID Code:** 002516

**CIP Code:** 13.0401

**Credential Level:** 04

**Months needed to complete certificate:** 21

**Students' on time graduation rate:**

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$3,867; non resident tuition, \$9,190; Fees=\$2,008 (4 semesters x \$502 per semester)

**Typical costs for books and supplies:** approx \$700.00 for books; supplies ?

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$

**Job placement rate for students who complete this certificate:** 100%

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Higher Education Administration

**Occupational information:** Holders of this certificate generally enter into occupations related to education.

Although higher education job titles vary, ten related O\*Net profiles include:

Name of Occupation	SOC Code	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Administrative Services Managers	11-3011.00	<a href="http://www.onetonline.org/link/summary/11-3011.00">http://www.onetonline.org/link/summary/11-3011.00</a>
Financial Managers, Branch or Department	11-3031.02	<a href="http://www.onetonline.org/link/summary/11-3031.02">http://www.onetonline.org/link/summary/11-3031.02</a>
Education Administrators, Postsecondary	11-9033.00	<a href="http://www.onetonline.org/link/summary/11-9033.00">http://www.onetonline.org/link/summary/11-9033.00</a>
Distance Learning Coordinators	11-9039.01	<a href="http://www.onetonline.org/link/summary/11-9039.01">http://www.onetonline.org/link/summary/11-9039.01</a>
Regulatory Affairs Managers	11-9199.01	<a href="http://www.onetonline.org/link/summary/11-9199.01">http://www.onetonline.org/link/summary/11-9199.01</a>
Equal Opportunity Representatives and Officers	13-1041.03	<a href="http://www.onetonline.org/link/summary/13-1041.03">http://www.onetonline.org/link/summary/13-1041.03</a>
Educational, Vocational, and School Counselors	21-1012.00	<a href="http://www.onetonline.org/link/summary/21-1012.00">http://www.onetonline.org/link/summary/21-1012.00</a>
Education Teachers, Postsecondary	25-1081.00	<a href="http://www.onetonline.org/link/summary/25-1081.00">http://www.onetonline.org/link/summary/25-1081.00</a>
Graduate Teaching Assistants	25-1191.00	<a href="http://www.onetonline.org/link/summary/25-1191.00">http://www.onetonline.org/link/summary/25-1191.00</a>
Instructional Coordinators	25-9031.00	<a href="http://www.onetonline.org/link/summary/25-9031.00">http://www.onetonline.org/link/summary/25-9031.00</a>
Instructional Designers and Technologists	25-9031.01	<a href="http://www.onetonline.org/link/summary/25-9031.01">http://www.onetonline.org/link/summary/25-9031.01</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Higher and Continuing Education Administration

Officially approved as: **Stand Alone:** Yes **Degree Dependent:** Yes

**Total Credit Hours:** 12

**Certificate description:** The Graduate Certificate in Higher Education Administration is designed to address the need for enhanced understanding of the higher education institutional context and for improved skills in areas required for effective administration of the higher education administration and governance and some technical knowledge about various aspects of administration (i.e., budget and finance, higher education law). Students also enhance understanding and skills in a relevant area of administrative practice (e.g., program planning for continuing educators, student affairs administration for student affairs professionals, the community college for community college administrators).

**Certificate web site:**

[http://education.missouri.edu/ELPA/program\\_areas/degree\\_pages/HACE\\_certificate.php](http://education.missouri.edu/ELPA/program_areas/degree_pages/HACE_certificate.php)

**For information about certificate, contact:** Department of Educational Leadership & Policy Analysis

**email:** [elpagrad@missouri.edu](mailto:elpagrad@missouri.edu) **Phone:** 573-882-8221

**Address:** 202 Hill Hall University of Missouri Columbia, MO 65211

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### Federal Disclosure

**OPEID Code:** 002516

**CIP Code:** 13.0401

**Credential Level:** 04

**Months needed to complete certificate:** 21

**Students' on time graduation rate:**

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$3867; non resident tuition, \$9,190; Fees=\$2,008 (4 semesters x \$502 per semester)

**Typical costs for books and supplies:** approx \$700.00 for books

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ 0

**Job placement rate for students who complete this certificate:** 100%

Related occupational codes begin on the next page >>

**Graduate Certificate:** Higher Education Administration

**Occupational information:** Holders of this certificate generally enter into occupations related to education.

Although higher education job titles vary, ten related O\*Net profiles include:

Name of Occupation	SOC Code	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Administrative Services Managers	11-3011.00	<a href="http://www.onetonline.org/link/summary/11-3011.00">http://www.onetonline.org/link/summary/11-3011.00</a>
Financial Managers, Branch or Department	11-3031.02	<a href="http://www.onetonline.org/link/summary/11-3031.02">http://www.onetonline.org/link/summary/11-3031.02</a>
Education Administrators, Postsecondary	11-9033.00	<a href="http://www.onetonline.org/link/summary/11-9033.00">http://www.onetonline.org/link/summary/11-9033.00</a>
Distance Learning Coordinators	11-9039.01	<a href="http://www.onetonline.org/link/summary/11-9039.01">http://www.onetonline.org/link/summary/11-9039.01</a>
Regulatory Affairs Managers	11-9199.01	<a href="http://www.onetonline.org/link/summary/11-9199.01">http://www.onetonline.org/link/summary/11-9199.01</a>
Equal Opportunity Representatives and Officers	13-1041.03	<a href="http://www.onetonline.org/link/summary/13-1041.03">http://www.onetonline.org/link/summary/13-1041.03</a>
Educational, Vocational, and School Counselors	21-1012.00	<a href="http://www.onetonline.org/link/summary/21-1012.00">http://www.onetonline.org/link/summary/21-1012.00</a>
Education Teachers, Postsecondary	25-1081.00	<a href="http://www.onetonline.org/link/summary/25-1081.00">http://www.onetonline.org/link/summary/25-1081.00</a>
Graduate Teaching Assistants	25-1191.00	<a href="http://www.onetonline.org/link/summary/25-1191.00">http://www.onetonline.org/link/summary/25-1191.00</a>
Instructional Coordinators	25-9031.00	<a href="http://www.onetonline.org/link/summary/25-9031.00">http://www.onetonline.org/link/summary/25-9031.00</a>
Instructional Designers and Technologists	25-9031.01	<a href="http://www.onetonline.org/link/summary/25-9031.01">http://www.onetonline.org/link/summary/25-9031.01</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Jazz Studies

Officially approved as:    **Stand Alone:** Yes    **Degree Dependent:** Yes

**Total Credit Hours:** 13

**Certificate description:** The Graduate Certificate in Jazz Studies is a one-year program that provides opportunities for continued development of skills in jazz-specific areas, such as improvisation, pedagogy, and arranging. The certificate is available to degree-seeking and non-degree seeking students alike, non-music as well as music majors, and is designed as an intensive into jazz performance. The program will deepen the student’s preparation for a career in jazz performance or prepare the student for further study in jazz.

**Certificate web site:** <http://music.missouri.edu/graduate/jazzcert.html>

**For information about certificate, contact:** Director of Jazz Studies, Dr. Arthur White, School of Music

**email:** [whitear@missouri.edu](mailto:whitear@missouri.edu)

**Phone:** 573-882-3430.

**Address:** 135 Fine Arts Building, University of Missouri, Columbia, MO 65211

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### Federal Disclosure

**OPEID Code:** 002516

**CIP Code:** 50.0910

**Credential Level:** 04

**Months needed to complete certificate:** 24

**Students’ on time graduation rate:** N/A [new certificate]

**Tuition & fees\* for completing this program within normal time:** Tuition, resident = \$3867; non resident tuition, \$9,190; Fees=\$2,008 (4 semesters x \$502 per semester); Applied Music Fee, \$220.30 per semester of enrollment in Music 7455 or 8455 (0-2 semesters);

**Typical costs for books and supplies:** books approx \$700.00; Sheet music, reeds, or other various supplies.

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier’s Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ N/A [new certificate]

**Job placement rate for students who complete this certificate:** N/A [new certificate]

Related occupational codes begin on the next page >>

**Graduate Certificate:** Jazz Studies

**Occupational information:** Holders of this certificate generally enter into occupations related to education and training; health science, or human services. Ten related job profiles:

Name of Occupation	SOC Code	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Music Composers and Arrangers	27-2041.04	<a href="http://www.onetonline.org/link/summary/27-2041.04">http://www.onetonline.org/link/summary/27-2041.04</a>
Music Directors	27-2041.01	<a href="http://www.onetonline.org/link/summary/27-2041.01">http://www.onetonline.org/link/summary/27-2041.01</a>
Musicians, Instrumental	27-2042.02	<a href="http://www.onetonline.org/link/summary/27-2042.02">http://www.onetonline.org/link/summary/27-2042.02</a>
Art, Drama, and Music Teachers, Postsecondary	25-1121.00	<a href="http://www.onetonline.org/link/summary/25-1121.00">http://www.onetonline.org/link/summary/25-1121.00</a>
Secondary School Teachers, Except Special and Vocational Education	25-2031.00	<a href="http://www.onetonline.org/link/summary/25-2031.00">http://www.onetonline.org/link/summary/25-2031.00</a>
Middle School Teachers, Except Special and Vocational Education	25-2022.00	<a href="http://www.onetonline.org/link/summary/25-2022.00">http://www.onetonline.org/link/summary/25-2022.00</a>
Music Directors	27-2041.01	<a href="http://www.onetonline.org/link/summary/27-2041.01">http://www.onetonline.org/link/summary/27-2041.01</a>
Singers	27-2042.01	<a href="http://www.onetonline.org/link/summary/27-2042.01">http://www.onetonline.org/link/summary/27-2042.01</a>
Radio and Television Announcers	27-3011.00	<a href="http://www.onetonline.org/link/summary/27-3011.00">http://www.onetonline.org/link/summary/27-3011.00</a>
Reporters and Correspondents	27-3022.00	<a href="http://www.onetonline.org/link/summary/27-3022.00">http://www.onetonline.org/link/summary/27-3022.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Military Social Work

**Officially approved as:** Stand Alone: Yes Degree Dependent: Yes

**Total Credit Hours:** 12

**Certificate description:** The Graduate Certificate in Military Social Work is designed to expand the pool of professionals who are qualified to work in settings with military personnel, veterans, and their families. The Certificate focuses on clinical practice strategies of social work intervention with military personnel and their families to improve the mental health and health of this population.

**Certificate web site:** <http://ssw.missouri.edu/msw.shtml>

**For information about certificate, contact:** Crystal Null

**email:** [nullc@missouri.edu](mailto:nullc@missouri.edu) **Phone:** 573-884-9385

**Address:** School of Social Work, 724 Clark Hall, University of Missouri, Columbia, MO 65211

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### Federal Disclosure

**OPEID Code:** 002516 **CIP Code:** 44.0799 **Credential Level:** 04

**Months needed to complete certificate:** 24

**Students' on time graduation rate:** N/A [new certificate]

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$3867; non resident tuition, \$9,190; Fees=\$2,008 (4 semesters x \$502 per semester)

**Typical costs for books and supplies:** books approx \$700.00

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ N/A [new certificate]

**Job placement rate for students who complete this certificate:** N/A [new certificate]

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Military Social Work

**Occupational information:** Holders of this certificate generally enter into occupations related to education and training; health science, or human services. Ten related job profiles:

Name of Occupation	Code*	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Social Scientists and Related Workers, All Other	19-3099.00	<a href="http://www.onetonline.org/link/summary/19-3099.00">http://www.onetonline.org/link/summary/19-3099.00</a>
Community and Social Service Specialists, All Other	21-1099.00	<a href="http://www.onetonline.org/link/summary/21-1099.00">http://www.onetonline.org/link/summary/21-1099.00</a>
Medical and Public Health Social Workers	21-1022.00	<a href="http://www.onetonline.org/link/summary/21-1022.00">http://www.onetonline.org/link/summary/21-1022.00</a>
Child, Family, and School Social Workers	21-1021.00	<a href="http://www.onetonline.org/link/summary/21-1021.00">http://www.onetonline.org/link/summary/21-1021.00</a>
Mental Health and Substance Abuse Social Workers	21-1023.00	<a href="http://www.onetonline.org/link/summary/21-1023.00">http://www.onetonline.org/link/summary/21-1023.00</a>
Social and Human Service Assistants	21-1093.00	<a href="http://www.onetonline.org/link/summary/21-1093.00">http://www.onetonline.org/link/summary/21-1093.00</a>
Community and Social Service Specialists, All Other	21-1099.00	<a href="http://www.onetonline.org/link/summary/21-1099.00">http://www.onetonline.org/link/summary/21-1099.00</a>
Postsecondary Teachers, All Other	25-1199.00	<a href="http://www.onetonline.org/link/summary/25-1199.00">http://www.onetonline.org/link/summary/25-1199.00</a>
Secondary School Teachers, Except Special and Vocational Education	25-2031.00	<a href="http://www.onetonline.org/link/summary/25-2031.00">http://www.onetonline.org/link/summary/25-2031.00</a>
Eligibility Interviewers, Government Programs	43-4061.00	<a href="http://www.onetonline.org/link/summary/43-4061.00">http://www.onetonline.org/link/summary/43-4061.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Multicultural Education

**Officially approved as:** Stand Alone: Yes      **Degree Dependent:** Yes

**Total Credit Hours:** 15

**Certificate description:** This certificate will provide the requisite awareness, knowledge and skill to effectively work with students and families from diverse cultural backgrounds and is ideal for teachers, counselors and administrators in P-12 school settings. By creating this online certificate, Mizzou is working to increase the number of qualified teachers and other school personnel who can serve diverse populations and prepare all students to function more effectively in society. The 15-hour certificate can be completed entirely online, but some students may choose electives that are offered on campus in Columbia, Mo.

**Certificate web site** <http://mudirect.missouri.edu/degprog/ed-multicultural/>

**For information about certificate, contact:** Dr. Puncky Heppner

**email:** [heppnerp@missouri.edu](mailto:heppnerp@missouri.edu)      **Phone:** 882-3523

**Address:** 16 Hill Hall

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### Federal Disclosure

**OPEID Code:** 002516      **CIP Code:** 13.0202      **Credential Level:** 04

**Months needed to complete certificate:** 12

**Students' on time graduation rate:** N/A [new certificate]

**Tuition & fees for completing this program within normal time:** Tuition, MO resident = \$5,613; non-resident = \$7,984.50; Fees= \$1,130 range (\$565.69 x 2 semesters)

**Typical costs for books and supplies:** books approx \$700.00

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program: \$ :** N/A [new certificate]

**Job placement rate for students who complete this certificate:** N/A [new certificate]

**Related occupational codes begin on the next page >>**

## Gainful Employment Disclosure for “Stand Alone” Graduate Certificates

Published as part of the University of Missouri Graduate Catalog 2012-2013

### Graduate Certificate: Multicultural Education

**Occupational information:** Holders of this certificate generally already work in (or will enter into) occupations related to education and training; health science, or human services. Ten related job profiles:

Name of Occupation	Code*	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Social Scientists and Related Workers, All Other	19-3099.00	<a href="http://www.onetonline.org/link/summary/19-3099.00">http://www.onetonline.org/link/summary/19-3099.00</a>
Child, Family, and School Social Workers	21-1021.00	<a href="http://www.onetonline.org/link/summary/21-1021.00">http://www.onetonline.org/link/summary/21-1021.00</a>
Mental Health and Substance Abuse Social Workers	21-1023.00	<a href="http://www.onetonline.org/link/summary/21-1023.00">http://www.onetonline.org/link/summary/21-1023.00</a>
Health Educators	21-1091.00	<a href="http://www.onetonline.org/link/summary/21-1091.00">http://www.onetonline.org/link/summary/21-1091.00</a>
Community and Social Service Specialists, All Other	21-1099.00	<a href="http://www.onetonline.org/link/summary/21-1099.00">http://www.onetonline.org/link/summary/21-1099.00</a>
Postsecondary Teachers, All Other	25-1199.00	<a href="http://www.onetonline.org/link/summary/25-1199.00">http://www.onetonline.org/link/summary/25-1199.00</a>
Middle School Teachers, Except Special and Vocational Education	25-2022.00	<a href="http://www.onetonline.org/link/summary/25-2022.00">http://www.onetonline.org/link/summary/25-2022.00</a>
Secondary School Teachers, Except Special and Vocational Education	25-2031.00	<a href="http://www.onetonline.org/link/summary/25-2031.00">http://www.onetonline.org/link/summary/25-2031.00</a>
Adult Literacy, Remedial Education, and GED Teachers and Instructors	25-3011.00	<a href="http://www.onetonline.org/link/summary/25-3011.00">http://www.onetonline.org/link/summary/25-3011.00</a>
Librarians	25-4021.00	<a href="http://www.onetonline.org/link/summary/25-4021.00">http://www.onetonline.org/link/summary/25-4021.00</a>
Eligibility Interviewers, Government Programs	43-4061.00	<a href="http://www.onetonline.org/link/summary/43-4061.00">http://www.onetonline.org/link/summary/43-4061.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Neuroscience

**Officially approved as:** Stand Alone: Yes      Degree Dependent: Yes

**Total Credit Hours:** 12

### Certificate description:

The purpose of this certificate is to provide formal recognition to post baccalaureate students who are taking neuroscience courses and conducting research in neuroscience laboratories. This stand-alone certificate would allow post-baccalaureate students to have a specific, formal indication of their advanced studies and would be very beneficial to students who are considering applying to graduate degree programs or health sciences programs, such as medical or dental school.

**Certificate web site:** <http://www.neurosci.missouri.edu/>

**Contact:** Dr. Andrew McClellan      email: [McclellanA@missouri.edu](mailto:McclellanA@missouri.edu)

**Phone:** 573-882-1447

**Address:** 213A Lefevre Hall University of Missouri Columbia, MO 65211

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### Federal Disclosure

**OPEID Code:** 002516

**CIP Code:** 26.1501

**Credential Level:** 04

**Months needed to complete certificate:** 12

**Students' on time graduation rate:** N/A (new certificate 8/26/11)

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$3867; non resident tuition, \$9,190; Fees=\$1004 (2 semesters x \$502 per semester)

**Typical costs for books and supplies:** texts\$500 (approx.); information technology fee - \$146.40

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** N/A (new certificate 8/26/11)

**Job placement rate for students who complete this certificate:** N/A (new certificate 8/26/11)

Related occupational codes begin on the next page >>

**Graduate Certificate:** Neuroscience

**Occupational information:** Holders of this certificate generally enter into occupations related to education and training; health science, or human services. Related job profiles:

Name of Occupation	SOC Code	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Biomedical Engineers	17-2031.00	<a href="http://www.onetonline.org/link/summary/17-2031.00">http://www.onetonline.org/link/summary/17-2031.00</a>
Animal Scientists	19-1011.00	<a href="http://www.onetonline.org/link/summary/19-1011.00">http://www.onetonline.org/link/summary/19-1011.00</a>
Biochemists and Biophysicists	19-1021.00	<a href="http://www.onetonline.org/link/summary/19-1021.00">http://www.onetonline.org/link/summary/19-1021.00</a>
Biological Scientists, All Other	19-1029.00	<a href="http://www.onetonline.org/link/summary/19-1029.00">http://www.onetonline.org/link/summary/19-1029.00</a>
Molecular and Cellular Biologists	19-1029.02	<a href="http://www.onetonline.org/link/summary/19-1029.02">http://www.onetonline.org/link/summary/19-1029.02</a>
Psychologists, All Other	19-3039.00	<a href="http://www.onetonline.org/link/summary/19-3039.00">http://www.onetonline.org/link/summary/19-3039.00</a>
Life, Physical, and Social Science Technicians, All Other	19-4099.00	<a href="http://www.onetonline.org/link/summary/19-4099.00">http://www.onetonline.org/link/summary/19-4099.00</a>
Biological Technicians	19-4021.00	<a href="http://www.onetonline.org/link/summary/19-4021.00">http://www.onetonline.org/link/summary/19-4021.00</a>
Biological Science Teachers, Postsecondary	25-1042.00	<a href="http://www.onetonline.org/link/summary/19-1042.00">http://www.onetonline.org/link/summary/19-1042.00</a>
Medical and Clinical Laboratory Technician	29-2012.00	<a href="http://www.onetonline.org/link/summary/29-2012.00">http://www.onetonline.org/link/summary/29-2012.00</a>
Neurologists	29-1069.0	<a href="http://www.onetonline.org/link/summary/29-1069.00">http://www.onetonline.org/link/summary/29-1069.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Nonprofit Management

Officially approved as:    **Stand Alone:** Yes    **Degree Dependent:** No

**Total Credit Hours:** 12

**Certificate description:** The graduate certificate in nonprofit management provides students with the managerial, fiduciary, and analytical tools necessary for leadership of nonprofit entities. The goal is to develop and hone skills that can be used to achieve organizational missions uniquely aimed at serving the interests of the community.

**Certificate web site:** <http://truman.missouri.edu/DegreePrograms/GraduateCertificates/Nonprofit>

**For information about certificate, contact:** Truman School of Public Affairs

**email:** [Truman@missouri.edu](mailto:Truman@missouri.edu)

**Phone:** (573) 884-1656

**Address:** 101 Middlebush Hall University of Missouri      Columbia, MO      65211

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### Federal Disclosure

**OPEID Code:** 002516      **CIP Code:** 52.0206      **Credential Level:** 04

**Months needed to complete certificate:** 24

**Students' on time graduation rate:** 100% (7 of 7)

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$3867; non resident tuition, \$9,190; Fees=\$2008 (4 semesters x \$502 per semester)

**Typical costs for books and supplies:** \$ Books and computing fees, \$200

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ 25,682, (\$32,939 average)

**Job placement rate for students who complete this certificate:** 100% (7 of 7)

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Nonprofit Management

**Occupational information:** Holders of this certificate generally enter into occupations related to nonprofit management, education, and human services. Ten illustrative job profiles:

<b>Name of Occupation</b>	<b>Code*</b>	<b>View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a></b>
Chief Executives	11-1011.00	<a href="http://www.onetonline.org/link/summary/11-1011.00">http://www.onetonline.org/link/summary/11-1011.00</a>
General and Operations Managers	11-1021.00	<a href="http://www.onetonline.org/link/summary/11-1021.00">http://www.onetonline.org/link/summary/11-1021.00</a>
Public Relations Managers	11-2031.00	<a href="http://www.onetonline.org/link/summary/11-2031.00">http://www.onetonline.org/link/summary/11-2031.00</a>
Social and Community Service Managers	11-9151.00	<a href="http://www.onetonline.org/link/summary/11-9151.00">http://www.onetonline.org/link/summary/11-9151.00</a>
Compliance Managers	11-9199.02	<a href="http://www.onetonline.org/link/summary/11-9199.02">http://www.onetonline.org/link/summary/11-9199.02</a>
Accountants	13-2011.01	<a href="http://www.onetonline.org/link/summary/13-2011.01">http://www.onetonline.org/link/summary/13-2011.01</a>
City and Regional Planning Aides	19-4061.01	<a href="http://www.onetonline.org/link/summary/19-4061.01">http://www.onetonline.org/link/summary/19-4061.01</a>
Directors, Religious Activities and Education	21-2021.00	<a href="http://www.onetonline.org/link/summary/21-2021.00">http://www.onetonline.org/link/summary/21-2021.00</a>
Program Directors	27-2012.03	<a href="http://www.onetonline.org/link/summary/27-2012.03">http://www.onetonline.org/link/summary/27-2012.03</a>
First-Line Supervisors/Managers of Office and Administrative Support Workers	43-1011.00	<a href="http://www.onetonline.org/link/summary/43-1011.00">http://www.onetonline.org/link/summary/43-1011.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Nuclear Engineering

**Officially approved as:** Stand Alone: Yes      Degree Dependent: Yes

**Total Credit Hours:** 12

**Certificate description:** The objective of the Graduate Certificate in Nuclear Engineering is to provide graduate students and professional, non-degree students from various engineering and science departments at MU with a unique opportunity to develop expertise in nuclear engineering that will enhance their job opportunities in the nuclear field. Available courses cover radiation, nuclear reaction, nuclear physics, fusion theory, radiochemistry, and nuclear fuel, and other subjects.

**Certificate web site:** <http://nsei.missouri.edu/graduateCertification.html>

**For information about certificate, contact:** Nuclear Science and Engineering Institute

**Dr. Ghosh’s email:** [GhoshT@missouri.edu](mailto:GhoshT@missouri.edu)      **Phone:** (573) 882-8201

**Address:** E2433 Lafferre Hall, University of Missouri, Columbia, MO 65211

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### Federal Disclosure

**OPEID Code:** 002516      **CIP Code:** 14.2301      **Credential Level:** 04

**Months needed to complete certificate:** 24

**Students’ on time graduation rate:** 100% (1 of 1)

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$3867; non resident tuition, \$9,190; Fees=\$2008 (4 semesters x \$502 per semester)

**Typical costs for books and supplies:** \$ 700

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier’s Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ 0

**Job placement rate for students who complete this certificate:** unknown (international student)

Related occupational codes begin on the next page >>

**Graduate Certificate:** Nuclear Engineering

**Occupational information:** Holders of this certificate generally enter into occupations related to science, engineering, technology, government, military, postsecondary education, health, utilities, or public safety. Ten related job profiles:

<b>Name of Occupation</b>	<b>Code*</b>	<b>View Occupational Profile on <a href="#">O*Net</a></b>
Occupational Health and Safety Specialists	29-9011.00	<a href="http://www.onetonline.org/link/summary/29-9011.00">http://www.onetonline.org/link/summary/29-9011.00</a>
Nuclear Engineers	17-2161.00	<a href="http://www.onetonline.org/link/summary/17-2161.00">http://www.onetonline.org/link/summary/17-2161.00</a>
Physicists	19-2012.00	<a href="http://www.onetonline.org/link/summary/19-2012.00">http://www.onetonline.org/link/summary/19-2012.00</a>
Nuclear Technicians	19-4051.00	<a href="http://www.onetonline.org/link/summary/19-4051.00">http://www.onetonline.org/link/summary/19-4051.00</a>
Nuclear Equipment Operation Technicians	19-4051.01	<a href="http://www.onetonline.org/link/summary/19-4051.01">http://www.onetonline.org/link/summary/19-4051.01</a>
Nuclear Monitoring Technicians	19-4051.02	<a href="http://www.onetonline.org/link/summary/19-4051.02">http://www.onetonline.org/link/summary/19-4051.02</a>
Physics Teachers, Postsecondary	25-1054.00	<a href="http://www.onetonline.org/link/summary/25-1054.00">http://www.onetonline.org/link/summary/25-1054.00</a>
Nuclear Medicine Physicians	29-1069.05	<a href="http://www.onetonline.org/link/summary/29-1069.05">http://www.onetonline.org/link/summary/29-1069.05</a>
Nuclear Power Reactor Operators	51-8011.00	<a href="http://www.onetonline.org/link/summary/51-8011.00">http://www.onetonline.org/link/summary/51-8011.00</a>
Inspectors, Testers, Sorters, Samplers, and Weighers	51-9061.00	<a href="http://www.onetonline.org/link/summary/51-9061.00">http://www.onetonline.org/link/summary/51-9061.00</a>
Artillery and Missile Officers	55-1014.00	<a href="http://www.onetonline.org/link/summary/55-1014.00">http://www.onetonline.org/link/summary/55-1014.00</a>
Military Enlisted Tactical Operations and Air/Weapons Specialists and Crew Members, All Other	55-3019.00	<a href="http://www.onetonline.org/link/summary/55-3019.00">http://www.onetonline.org/link/summary/55-3019.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Nuclear Safeguards Science and Technology

Officially approved as:    **Stand Alone:** Yes    **Degree Dependent:** Yes

**Total Credit Hours:** 12

**Certificate description:** The objective of the Graduate Certificate in Nuclear Safeguards is to provide graduate students and professional, non-degree-seeking, students in various engineering disciplines with an opportunity to develop unique skills and expertise that will enhance their performance in jobs requiring knowledge of nuclear material protection, control and accountability.

**Certificate web site:** [http://gradschool.missouri.edu/programs/graduate-certificates/NSST\\_Certificate.pdf](http://gradschool.missouri.edu/programs/graduate-certificates/NSST_Certificate.pdf)

**For information about certificate, contact:** Dr. Tushar Ghosh or Dr. John Gahl, with the Nuclear Science and Engineering Institute

Dr. Tushar Ghosh, *Professor of Nuclear Engineering*    **Phone** 573-882-9736    **email:**  
[GhoshT@missouri.edu](mailto:GhoshT@missouri.edu)

Dr. John Gahl, *Professor of Electrical Engineering*    **Phone:** 573-884-7414    **email:**  
[GahlJ@missouri.edu](mailto:GahlJ@missouri.edu)

**Address:** E2433 Lafferre Hall, University of Missouri, Columbia, MO, 65211

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### Federal Disclosure

**OPEID Code:** 002516

**CIP Code:** 14.2301

**Credential Level:** 04

**Months needed to complete certificate:** 24

**Students' on time graduation rate:** N/A [no completers 2010-2011]

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$3867; non resident tuition, \$9,190; Fees=\$2008 (4 semesters x \$502 per semester)

**Typical costs for books and supplies:** \$ 700

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ N/A [no completers 2010-2011]

**Job placement rate for students who complete this certificate:** N/A [no completers 2010-2011]

Related occupational codes begin on the next page >>

**Graduate Certificate:** Nuclear Safeguards Science and Technology

**Occupational information:** Holders of this certificate generally enter into occupations related to engineering, technology, military, occupational health and safety, utilities, or emergency management. Eleven related job profiles:

Name of Occupation	Code*	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Engineering Managers	11-9041.00	<a href="http://www.onetonline.org/link/summary/11-9041.00">http://www.onetonline.org/link/summary/11-9041.00</a>
Emergency Management Specialists	13-1061.00	<a href="http://www.onetonline.org/link/summary/13-1061.00">http://www.onetonline.org/link/summary/13-1061.00</a>
Mechanical Engineers	17-2141.00	<a href="http://www.onetonline.org/link/summary/17-2141.00">http://www.onetonline.org/link/summary/17-2141.00</a>
Nuclear Engineers	17-2161.00	<a href="http://www.onetonline.org/link/summary/17-2161.00">http://www.onetonline.org/link/summary/17-2161.00</a>
Nuclear Technicians	19-4051.00	<a href="http://www.onetonline.org/link/summary/19-4051.00">http://www.onetonline.org/link/summary/19-4051.00</a>
Nuclear Equipment Operation Technicians	19-4051.01	<a href="http://www.onetonline.org/link/summary/19-4051.01">http://www.onetonline.org/link/summary/19-4051.01</a>
Nuclear Monitoring Technicians	19-4051.02	<a href="http://www.onetonline.org/link/summary/19-4051.02">http://www.onetonline.org/link/summary/19-4051.02</a>
Occupational Health and Safety Specialists	29-9011.00	<a href="http://www.onetonline.org/link/summary/29-9011.00">http://www.onetonline.org/link/summary/29-9011.00</a>
Nuclear Power Reactor Operators	51-8011.00	<a href="http://www.onetonline.org/link/summary/51-8011.00">http://www.onetonline.org/link/summary/51-8011.00</a>
Inspectors, Testers, Sorters, Samplers, and Weighers	51-9061.00	<a href="http://www.onetonline.org/link/summary/51-9061.00">http://www.onetonline.org/link/summary/51-9061.00</a>
Military Enlisted Tactical Operations and Air/Weapons Specialists and Crew Members, All Other	55-3019.00	<a href="http://www.onetonline.org/link/summary/55-3019.00">http://www.onetonline.org/link/summary/55-3019.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## **Graduate Certificate: Adult Health Clinical Nurse Specialist** (post-master's certificate)

**Officially approved as:** Stand Alone: Yes      Degree Dependent: No

**Total Credit Hours:** 16

**Certificate description:** Advanced practice nurses are traditionally prepared at the graduate level in a specific clinical area. The specialty area may be identified in terms of population (e.g. pediatrics or adults), and/or type of problem (e.g. diabetes, cardiology). The advanced practice nurse is directly accountable for clinical judgments which includes independent and interdependent decision making. Holders of this certificate provide advanced care to adults experiencing complex medical-surgical health problems. Ability to use advanced diagnostic and assessment skills and interventions to manage and improve patient care. Can consider all influences on a patient's health status and the related psychosocial and behavioral problems arising from the patient's altered physiological condition. Certificate is available via online learning.

**Certificate web site:** <http://www.nursing.missouri.edu/academics/post-masters-certificate/index.php>

**For information about certificate, contact:** Office of Student Affairs

**email:** [nursing@missouri.edu](mailto:nursing@missouri.edu)

**Phone:** 573-882-0277

**Address:** Sinclair School of Nursing S235 School of Nursing, Columbia, Mo. 65211

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### **Federal Disclosure**

**OPEID Code:** 002516

**CIP Code:** 51.3803

**Credential Level:** 04

**Months needed to complete certificate:** 24

**Students' on time graduation rate:** N/A New Certificate

**Tuition & fees for completing this program within normal time** Online tuition= \$ 7761; clinical fees range from \$ 1916.25 to \$2190.00 (Clinical fees calculated at \$182.50 per credit hour); information technology fees \$245.70; exact tuition & fees dependent upon satisfactory completion of all pre-requisite coursework prior to enrollment in certificate program.

**Typical costs for books and supplies:** \$630.00 for books; supplies: name badge \$5.00; equipment – stethoscope \$200; otoscope /ophthalmoscope = \$ 550; Most current lap top computer with windows operating system and Office \$2500; head set \$150; camera \$100; textbooks approx \$700.00; travel for on campus required, approx \$1,200.00

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ N/A New Certificate

**Job placement rate for students who complete this certificate:** N/A New Certificate

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Adult Health Clinical Nurse Specialist (post-master’s certificate)

**Occupational information:** Holders of this certificate generally enter into occupations related to health, medicine, education or human services. Ten related job profiles:

<b>Name of Occupation</b>	<b>Code*</b>	<b>View Occupational Profile on <a href="#">O*Net</a></b>
Medical and Health Services Managers	11-9111.00	<a href="http://www.onetonline.org/link/summary/11-9111.00">http://www.onetonline.org/link/summary/11-9111.00</a>
Clinical Nurse Specialists	11-9111.01	<a href="http://www.onetonline.org/link/summary/11-9111.01">http://www.onetonline.org/link/summary/11-9111.01</a>
Clinical Research Coordinators	11-9121.01	<a href="http://www.onetonline.org/link/summary/11-9121.01">http://www.onetonline.org/link/summary/11-9121.01</a>
Informatics Nurse Specialists	15-1051.01	<a href="http://www.onetonline.org/link/summary/15-1051.01">http://www.onetonline.org/link/summary/15-1051.01</a>
Clinical Data Managers	15-2041.02	<a href="http://www.onetonline.org/link/summary/15-2041.02">http://www.onetonline.org/link/summary/15-2041.02</a>
Nursing Instructors and Teachers, Postsecondary	25-1072.00	<a href="http://www.onetonline.org/link/summary/25-1072.00">http://www.onetonline.org/link/summary/25-1072.00</a>
Health Educators	21-1091.00	<a href="http://www.onetonline.org/link/summary/21-1091.00">http://www.onetonline.org/link/summary/21-1091.00</a>
Acute Care Nurses	29-1111.01	<a href="http://www.onetonline.org/link/summary/29-1111.01">http://www.onetonline.org/link/summary/29-1111.01</a>
Critical Care Nurses	29-1111.03	<a href="http://www.onetonline.org/link/summary/29-1111.03">http://www.onetonline.org/link/summary/29-1111.03</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## **Graduate Certificate: Child/Adolescent Psychiatric and Mental Health Clinical Nurse Specialist**

(Program will be discontinued. Disclosure for archive purposes only).

**Officially approved as:**    **Stand Alone:** Yes    **Degree Dependent:** No

**Total Credit Hours:** 19

**Certificate description:** Advanced practice nurses are traditionally prepared at the graduate level in a specific clinical area. The specialty area may be identified in terms of population (e.g. pediatrics or adults), and/or type of problem (e.g. mental health). The advanced practice nurse is directly accountable for clinical judgments which includes independent and interdependent decision making. Holders of this certificate treat children and adolescents with mental health/ psychiatric disorders using a variety of therapeutic and interpersonal techniques. Acquire knowledge of child development and conceptualization of the child as part of a family system is essential to providing expert care. Will utilize diagnostic and assessment skills to provide therapeutic services through multiple modalities. Certificate is available via online learning.

**Certificate web site:** N/A **As of 05/29/12, this program is not accepting applicants.**

**For information about certificate, contact:** Office of Student Affairs

**email:** [nursing@missouri.edu](mailto:nursing@missouri.edu)

**Phone:** 573-882-0277

**Address:** Sinclair School of Nursing S235 School of Nursing, Columbia, Mo. 65211

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### **Federal Disclosure**

**OPEID Code:** 002516

**CIP Code:** 51.3810

**Credential Level:** 04

**Months needed to complete certificate:** 24

**Students' on time graduation rate:** N/A [new certificate]

**Tuition & fees for completing this program within normal time:** As of 05/29/12, this program is not accepting applicants. See 2011-12 disclosure for applicable tuition and fees that year.

**Typical costs for books and supplies:** As of 05/29/12, this program is not accepting applicants. See 2011-12 disclosure for typical costs that year.

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ N/A [new certificate]

**Job placement rate for students who complete this certificate:** N/A [new certificate]

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Child/Adolescent Psychiatric and Mental Health Clinical Nurse Specialist  
 (post-master’s certificate)

**Occupational information:** Holders of this certificate generally enter into occupations related to health, medicine, education or human services. Ten related job profiles:

Name of Occupation	Code*	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Medical and Health Services Managers	11-9111.00	<a href="http://www.onetonline.org/link/summary/11-9111.00">http://www.onetonline.org/link/summary/11-9111.00</a>
Clinical Nurse Specialists	11-9111.01	<a href="http://www.onetonline.org/link/summary/11-9111.01">http://www.onetonline.org/link/summary/11-9111.01</a>
Clinical Research Coordinators	11-9121.01	<a href="http://www.onetonline.org/link/summary/11-9121.01">http://www.onetonline.org/link/summary/11-9121.01</a>
Informatics Nurse Specialists	15-1051.01	<a href="http://www.onetonline.org/link/summary/15-1051.01">http://www.onetonline.org/link/summary/15-1051.01</a>
Mental Health Counselors	21-1014.00	<a href="http://www.onetonline.org/link/summary/21-1014.00">http://www.onetonline.org/link/summary/21-1014.00</a>
Mental Health and Substance Abuse Social Workers	21-1023.00	<a href="http://www.onetonline.org/link/summary/21-1023.00">http://www.onetonline.org/link/summary/21-1023.00</a>
Nursing Instructors and Teachers, Postsecondary	25-1072.00	<a href="http://www.onetonline.org/link/summary/25-1072.00">http://www.onetonline.org/link/summary/25-1072.00</a>
Health Educators	21-1091.00	<a href="http://www.onetonline.org/link/summary/21-1091.00">http://www.onetonline.org/link/summary/21-1091.00</a>
Physician Assistants	29-1071.00	<a href="http://www.onetonline.org/link/summary/29-1071.00">http://www.onetonline.org/link/summary/29-1071.00</a>
Advanced Practice Psychiatric Nurses	29-1111.02	<a href="http://www.onetonline.org/link/summary/29-1111.02">http://www.onetonline.org/link/summary/29-1111.02</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## **Graduate Certificate: Family Mental Health Nurse Practitioner** (post-master's certificate)

**Officially approved as:**    **Stand Alone:** Yes    **Degree Dependent:** No

**Total Credit Hours:** 19

**Certificate description:** Advanced practice nurses are traditionally prepared at the graduate level in a specific clinical area. The specialty area may be identified in terms of population (e.g. pediatrics or adults), and/or type of problem (e.g. mental health). The advanced practice nurse is directly accountable for clinical judgments which includes independent and interdependent decision making. Holders of this certificate provide primary mental health care at an advanced level to individuals of all ages and families. Includes differential diagnosis and management of psychiatric & mental health disorders, medication management, and psychotherapeutic interventions. Certificate is available via online learning.

**Certificate web site:** <http://www.nursing.missouri.edu/academics/post-masters-certificate/index.php>

**For information about certificate, contact:** Office of Student Affairs

**email:** [nursing@missouri.edu](mailto:nursing@missouri.edu)

**Phone:** 573-882-0277

**Address:** Sinclair School of Nursing S235 School of Nursing, Columbia, Mo. 65211

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### **Federal Disclosure**

**OPEID Code:** 002516

**CIP Code:** 51.3810

**Credential Level:** 04

**Months needed to complete certificate:** 24

**Students' on time graduation rate:** 100%

**Tuition & fees for completing this program within normal time:** MO Resident tuition = \$ 6207.30; Non-resident tuition = \$16,026.50; graduate fees added to clinical fees range from \$3,900.00 to \$4,200.00, dependent upon number of semesters enrolled. (Clinical fees calculated at \$177.20 per credit hour)

**Typical costs for books and supplies:** textbooks approx \$700.00; travel for on campus required, approx \$1,200.00

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ 0

**Job placement rate for students who complete this certificate:** 100%

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Family Mental Health Nurse Practitioner (post-master’s certificate)

**Occupational information:** Holders of this certificate generally enter into occupations related to health, medicine, education or human services. Ten related job profiles:

Name of Occupation	Code*	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Medical and Health Services Managers	11-9111.00	<a href="http://www.onetonline.org/link/summary/11-9111.00">http://www.onetonline.org/link/summary/11-9111.00</a>
Clinical Nurse Specialists	11-9111.01	<a href="http://www.onetonline.org/link/summary/11-9111.01">http://www.onetonline.org/link/summary/11-9111.01</a>
Clinical Research Coordinators	11-9121.01	<a href="http://www.onetonline.org/link/summary/11-9121.01">http://www.onetonline.org/link/summary/11-9121.01</a>
Informatics Nurse Specialists	15-1051.01	<a href="http://www.onetonline.org/link/summary/15-1051.01">http://www.onetonline.org/link/summary/15-1051.01</a>
Mental Health Counselors	21-1014.00	<a href="http://www.onetonline.org/link/summary/21-1014.00">http://www.onetonline.org/link/summary/21-1014.00</a>
Mental Health and Substance Abuse Social Workers	21-1023.00	<a href="http://www.onetonline.org/link/summary/21-1023.00">http://www.onetonline.org/link/summary/21-1023.00</a>
Nursing Instructors and Teachers, Postsecondary	25-1072.00	<a href="http://www.onetonline.org/link/summary/25-1072.00">http://www.onetonline.org/link/summary/25-1072.00</a>
Physician Assistants	29-1071.00	<a href="http://www.onetonline.org/link/summary/29-1071.00">http://www.onetonline.org/link/summary/29-1071.00</a>
Advanced Practice Psychiatric Nurses	29-1111.02	<a href="http://www.onetonline.org/link/summary/29-1111.02">http://www.onetonline.org/link/summary/29-1111.02</a>
Nurse Practitioners	29-1199.03	<a href="http://www.onetonline.org/link/summary/29-1199.03">http://www.onetonline.org/link/summary/29-1199.03</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## **Graduate Certificate: Family Nurse Practitioner**

(Program will be discontinued. Disclosure for archive purposes only).

**Officially approved as:**    **Stand Alone:** Yes    **Degree Dependent:** No

**Total Credit Hours:** 19

**Certificate description:** Advanced practice nurses are traditionally prepared at the graduate level in a specific clinical area. The specialty area may be identified in terms of population (e.g. pediatrics or adults), and/or type of problem (e.g. mental health). The advanced practice nurse is directly accountable for clinical judgments which includes independent and interdependent decision making. Holders of this certificate provide a full range of health care services on the wellness-illness health care continuum at an advanced level to individuals of all ages and families. Includes differential diagnosis and disease management. Certificate is available via online learning.

**Certificate web site:** N/A **As of 05/29/12, this program is not accepting applicants.**

**For information about certificate, contact:** Office of Student Affairs

**email:** [nursing@missouri.edu](mailto:nursing@missouri.edu)

**Phone:** 573-882-0277

**Address:** Sinclair School of Nursing S235 School of Nursing, Columbia, Mo. 65211

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### **Federal Disclosure**

**OPEID Code:** 002516

**CIP Code:** 51.3805

**Credential Level:** 04

**Months needed to complete certificate:** 24

**Students' on time graduation rate:** 100%

**Tuition & fees for completing this program within normal time:** As of 05/29/12, this program is not accepting applicants. See 2011-12 disclosure for applicable tuition and fees that year.

**Typical costs for books and supplies:** As of 05/29/12, this program is not accepting applicants. See 2011-12 disclosure for typical costs that year.

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ 8,268, (\$8,268 average)

**Job placement rate for students who complete this certificate:** 100%

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Family Nurse Practitioner (post-master’s certificate)

**Occupational information:** Holders of this certificate generally enter into occupations related to health, medicine, education or human services. Ten related job profiles:

Name of Occupation	Code*	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Medical and Health Services Managers	11-9111.00	<a href="http://www.onetonline.org/link/summary/11-9111.00">http://www.onetonline.org/link/summary/11-9111.00</a>
Clinical Nurse Specialists	11-9111.01	<a href="http://www.onetonline.org/link/summary/11-9111.01">http://www.onetonline.org/link/summary/11-9111.01</a>
Clinical Research Coordinators	11-9121.01	<a href="http://www.onetonline.org/link/summary/11-9121.01">http://www.onetonline.org/link/summary/11-9121.01</a>
Informatics Nurse Specialists	15-1051.01	<a href="http://www.onetonline.org/link/summary/15-1051.01">http://www.onetonline.org/link/summary/15-1051.01</a>
Nursing Instructors and Teachers, Postsecondary	25-1072.00	<a href="http://www.onetonline.org/link/summary/25-1072.00">http://www.onetonline.org/link/summary/25-1072.00</a>
Health Educators	21-1091.00	<a href="http://www.onetonline.org/link/summary/21-1091.00">http://www.onetonline.org/link/summary/21-1091.00</a>
Physician Assistants	29-1071.00	<a href="http://www.onetonline.org/link/summary/29-1071.00">http://www.onetonline.org/link/summary/29-1071.00</a>
Acute Care Nurses	29-1111.01	<a href="http://www.onetonline.org/link/summary/29-1111.01">http://www.onetonline.org/link/summary/29-1111.01</a>
Critical Care Nurses	29-1111.03	<a href="http://www.onetonline.org/link/summary/29-1111.03">http://www.onetonline.org/link/summary/29-1111.03</a>
Nurse Practitioners	29-1199.03	<a href="http://www.onetonline.org/link/summary/29-1199.03">http://www.onetonline.org/link/summary/29-1199.03</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

**Graduate Certificate: Maternal Child Health Clinical Nurse Specialist**  
(post-master's certificate)

**Officially approved as:**    **Stand Alone:** Yes        **Degree Dependent:** No

**Total Credit Hours:** 16

**Certificate description:** Advanced practice nurses are traditionally prepared at the graduate level in a specific clinical area. The specialty area may be identified in terms of population (e.g. pediatrics or adults), and/or type of problem (e.g. mental health). The advanced practice nurse is directly accountable for clinical judgments which includes independent and interdependent decision making. Holders of this certificate provide advanced care to adults experiencing complex medical-surgical health problems. Ability to use advanced diagnostic and assessment skills and interventions to manage and improve patient care. Can consider all influences on a patient's health status and the related psychosocial and behavioral problems arising from the patient's altered physiological condition. Certificate is available via online learning.

**Certificate web site:** <http://www.nursing.missouri.edu/academics/post-masters-certificate/index.php>

**For information about certificate, contact:** Office of Student Affairs

**email:** [nursing@missouri.edu](mailto:nursing@missouri.edu)                      **Phone:** 573-882-0277

**Address:** Sinclair School of Nursing S235 School of Nursing, Columbia, Mo. 65211

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**Federal Disclosure**

**OPEID Code:** 002516                      **CIP Code:** 51.1606                      **Credential Level:** 04

**Months needed to complete certificate:** 24

**Students' on time graduation rate:** N/A New Certificate

**Tuition & fees for completing this program within normal time:** MO Resident tuition = \$ 5,264; Non-resident tuition = \$12,716; graduate fees are estimated at \$2,132, dependent upon number of semesters enrolled. Clinical fees are \$3,872, calculated at \$242 per credit hour.

**Typical costs for books and supplies:** \$630.00 for books; supplies: name badge \$5.00; equipment – stethoscope \$200; otoscope /ophthalmoscope = \$ 550; Most current lap top computer with windows operating system and Office \$2500; head set \$150; camera \$100; travel for on campus required, approx \$1,200.00

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ N/A New Certificate

**Job placement rate for students who complete this certificate:** N/A New Certificate

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Adult Health Clinical Nurse Specialist (post-master’s certificate)

**Occupational information:** Holders of this certificate generally enter into occupations related to health, medicine, education or human services. Ten related job profiles:

Name of Occupation	Code*	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Medical and Health Services Managers	11-9111.00	<a href="http://www.onetonline.org/link/summary/11-9111.00">http://www.onetonline.org/link/summary/11-9111.00</a>
Clinical Nurse Specialists	11-9111.01	<a href="http://www.onetonline.org/link/summary/11-9111.01">http://www.onetonline.org/link/summary/11-9111.01</a>
Clinical Research Coordinators	11-9121.01	<a href="http://www.onetonline.org/link/summary/11-9121.01">http://www.onetonline.org/link/summary/11-9121.01</a>
Clinical Research Coordinators	11-9121.01	<a href="http://www.onetonline.org/link/summary/11-9121.01">http://www.onetonline.org/link/summary/11-9121.01</a>
Informatics Nurse Specialists	15-1051.01	<a href="http://www.onetonline.org/link/summary/15-1051.01">http://www.onetonline.org/link/summary/15-1051.01</a>
Clinical Data Managers	15-2041.02	<a href="http://www.onetonline.org/link/summary/15-2041.02">http://www.onetonline.org/link/summary/15-2041.02</a>
Nursing Instructors and Teachers, Postsecondary	25-1072.00	<a href="http://www.onetonline.org/link/summary/25-1072.00">http://www.onetonline.org/link/summary/25-1072.00</a>
Health Educators	21-1091.00	<a href="http://www.onetonline.org/link/summary/21-1091.00">http://www.onetonline.org/link/summary/21-1091.00</a>
Physician Assistants	29-1071.00	<a href="http://www.onetonline.org/link/summary/29-1071.00">http://www.onetonline.org/link/summary/29-1071.00</a>
Acute Care Nurses	29-1111.01	<a href="http://www.onetonline.org/link/summary/29-1111.01">http://www.onetonline.org/link/summary/29-1111.01</a>
Critical Care Nurses	29-1111.03	<a href="http://www.onetonline.org/link/summary/29-1111.03">http://www.onetonline.org/link/summary/29-1111.03</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## **Graduate Certificate: Mental Health Nurse Practitioner** (post-master's certificate)

**Officially approved as:** Stand Alone: Yes      Degree Dependent: No

**Total Credit Hours:** 18

**Certificate description:** Advanced practice nurses are traditionally prepared at the graduate level in a specific clinical area. The specialty area may be identified in terms of population (e.g. pediatrics or adults), and/or type of problem (e.g. mental health). The advanced practice nurse is directly accountable for clinical judgments which includes independent and interdependent decision making. Holders of this certificate provide a full range of psychiatric and primary mental health care at an advanced level to adults. Includes differential diagnosis and management of psychiatric & mental health disorders, medication management, and psychotherapeutic interventions. Certificate is available via online learning.

**Certificate web site:** <http://www.nursing.missouri.edu/academics/post-masters-certificate/index.php>

**For information about certificate, contact:** Office of Student Affairs

**email:** [nursing@missouri.edu](mailto:nursing@missouri.edu)      **Phone:** 573-882-0277

**Address:** Sinclair School of Nursing S235 School of Nursing, Columbia, Mo. 65211

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### **Federal Disclosure**

**OPEID Code:** 002516

**CIP Code:** 51.3810

**Credential Level:** 04

**Months needed to complete certificate:** 24

**Students' on time graduation rate:** 100%

**Tuition & fees for completing this program within normal time:** MO Resident tuition = \$ 5,964; Non-resident tuition = \$12,479; graduate fees are estimated at \$2,132, dependent upon number of semesters enrolled. Clinical fees are \$3,872, calculated at \$242 per credit hour.

**Typical costs for books and supplies:** Textbooks approx \$700.00; travel for on campus required, approx \$1,200.00

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ 0

**Job placement rate for students who complete this certificate:** 100%

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Mental Health Nurse Practitioner (post-master’s certificate)

**Occupational information:** Holders of this certificate generally enter into occupations related to health, medicine, education or human services. Ten related job profiles:

Name of Occupation	Code*	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Medical and Health Services Managers	11-9111.00	<a href="http://www.onetonline.org/link/summary/11-9111.00">http://www.onetonline.org/link/summary/11-9111.00</a>
Clinical Nurse Specialists	11-9111.01	<a href="http://www.onetonline.org/link/summary/11-9111.01">http://www.onetonline.org/link/summary/11-9111.01</a>
Clinical Research Coordinators	11-9121.01	<a href="http://www.onetonline.org/link/summary/11-9121.01">http://www.onetonline.org/link/summary/11-9121.01</a>
Informatics Nurse Specialists	15-1051.01	<a href="http://www.onetonline.org/link/summary/15-1051.01">http://www.onetonline.org/link/summary/15-1051.01</a>
Mental Health Counselors	21-1014.00	<a href="http://www.onetonline.org/link/summary/21-1014.00">http://www.onetonline.org/link/summary/21-1014.00</a>
Mental Health and Substance Abuse Social Workers	21-1023.00	<a href="http://www.onetonline.org/link/summary/21-1023.00">http://www.onetonline.org/link/summary/21-1023.00</a>
Nursing Instructors and Teachers, Postsecondary	25-1072.00	<a href="http://www.onetonline.org/link/summary/25-1072.00">http://www.onetonline.org/link/summary/25-1072.00</a>
Physician Assistants	29-1071.00	<a href="http://www.onetonline.org/link/summary/29-1071.00">http://www.onetonline.org/link/summary/29-1071.00</a>
Advanced Practice Psychiatric Nurses	29-1111.02	<a href="http://www.onetonline.org/link/summary/29-1111.02">http://www.onetonline.org/link/summary/29-1111.02</a>
Nurse Practitioners	29-1199.03	<a href="http://www.onetonline.org/link/summary/29-1199.03">http://www.onetonline.org/link/summary/29-1199.03</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## **Graduate Certificate: Pediatric Clinical Nurse Specialist** (post-master's certificate)

**Officially approved as:** Stand Alone: Yes      Degree Dependent: No

**Total Credit Hours:** 16

**Certificate description:** Advanced practice nurses are traditionally prepared at the graduate level in a specific clinical area. The specialty area may be identified in terms of population (e.g. pediatrics or adults), and/or type of problem (e.g. diabetes, oncology). The advanced practice nurse is directly accountable for clinical judgments which includes independent and interdependent decision making. Holders of this certificate provide advanced care for children and their families. Will be able to demonstrate an in-depth understanding of the complexity of pediatric health care and problems as well as advanced interventions to manage and improve care for the child and family. Can consider all influences on a child's health status and the related psychosocial and behavioral problems arising from the child's altered physiological condition. Certificate is available via online learning.

**Certificate web site:** <http://www.nursing.missouri.edu/academics/post-masters-certificate/index.php>

**For information about certificate, contact:** Office of Student Affairs

**email:** [nursing@missouri.edu](mailto:nursing@missouri.edu)

**Phone:** 573-882-0277

**Address:** Sinclair School of Nursing S235 School of Nursing, Columbia, Mo. 65211

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### **Federal Disclosure**

**OPEID Code:** 002516

**CIP Code:** 51.3809

**Credential Level:** 04

**Months needed to complete certificate:** 24

**Students' on time graduation rate:** N/A [new certificate]

**Tuition & fees for completing this program within normal time:** Online tuition= \$ 7761; clinical fees range from \$ 1916.25 to \$2190.00 (Clinical fees calculated at \$182.50 per credit hour); information technology fees \$245.70; exact tuition & fees dependent upon satisfactory completion of all pre-requisite coursework prior to enrollment in certificate program.

**Typical costs for books and supplies:** Supplies: name badge \$5.00; equipment – stethoscope \$200; otoscope /ophthalmoscope = \$ 550; Current lap top with Windows operating system and MS Office \$2500; head set \$150; camera \$100; textbooks approx \$700.00; travel for on campus required, approx \$1,200.00

**Cost of room and board, if applicable:** \$ N/A [new certificate]

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** N/A [new certificate]

**Job placement rate for students who complete this certificate:** N/A [new certificate]

**Related occupational codes begin on the next page >>**

 **Gainful Employment Disclosure for “Stand Alone” Graduate Certificates**  
 Published as part of the University of Missouri Graduate Catalog 2012-2013

**Graduate Certificate:** Pediatric Clinical Nurse Specialist (post-master’s certificate)

**Occupational information:** Holders of this certificate generally enter into occupations related to health, medicine, education or human services. Ten related job profiles:

Name of Occupation	Code*	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Medical and Health Services Managers	11-9111.00	<a href="http://www.onetonline.org/link/summary/11-9111.00">http://www.onetonline.org/link/summary/11-9111.00</a>
Clinical Nurse Specialists	11-9111.01	<a href="http://www.onetonline.org/link/summary/11-9111.01">http://www.onetonline.org/link/summary/11-9111.01</a>
Clinical Research Coordinators	11-9121.01	<a href="http://www.onetonline.org/link/summary/11-9121.01">http://www.onetonline.org/link/summary/11-9121.01</a>
Clinical Research Coordinators	11-9121.01	<a href="http://www.onetonline.org/link/summary/11-9121.01">http://www.onetonline.org/link/summary/11-9121.01</a>
Informatics Nurse Specialists	15-1051.01	<a href="http://www.onetonline.org/link/summary/15-1051.01">http://www.onetonline.org/link/summary/15-1051.01</a>
Clinical Data Managers	15-2041.02	<a href="http://www.onetonline.org/link/summary/15-2041.02">http://www.onetonline.org/link/summary/15-2041.02</a>
Nursing Instructors and Teachers, Postsecondary	25-1072.00	<a href="http://www.onetonline.org/link/summary/25-1072.00">http://www.onetonline.org/link/summary/25-1072.00</a>
Health Educators	21-1091.00	<a href="http://www.onetonline.org/link/summary/21-1091.00">http://www.onetonline.org/link/summary/21-1091.00</a>
Physician Assistants	29-1071.00	<a href="http://www.onetonline.org/link/summary/29-1071.00">http://www.onetonline.org/link/summary/29-1071.00</a>
Acute Care Nurses	29-1111.01	<a href="http://www.onetonline.org/link/summary/29-1111.01">http://www.onetonline.org/link/summary/29-1111.01</a>
Critical Care Nurses	29-1111.03	<a href="http://www.onetonline.org/link/summary/29-1111.03">http://www.onetonline.org/link/summary/29-1111.03</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## **Graduate Certificate: Pediatric Nurse Practitioner** (Program will be discontinued. Disclosure for archive purposes only).

**Officially approved as:**    **Stand Alone:** Yes    **Degree Dependent:** No

**Total Credit Hours:** 16

**Certificate description:** Advanced practice nurses are traditionally prepared at the graduate level in a specific clinical area. The specialty area may be identified in terms of population (e.g. pediatrics or adults), and/or type of problem (e.g. mental health). The advanced practice nurse is directly accountable for clinical judgments which includes independent and interdependent decision making. Holders of this certificate provide a full range of health care services on the wellness-illness health care continuum at an advanced level to children from birth through 21 years of age. Includes differential diagnosis and disease management. Certificate is available via online learning.

**Certificate web site:** N/A **As of 05/29/12, this program is not accepting applicants.**

**For information about certificate, contact:** Office of Student Affairs

**email:** [nursing@missouri.edu](mailto:nursing@missouri.edu)

**Phone:** 573-882-0277

**Address:** Sinclair School of Nursing S235 School of Nursing, Columbia, Mo. 65211

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### **Federal Disclosure**

**OPEID Code:** 002516

**CIP Code:** 51.3809

**Credential Level:** 04

**Months needed to complete certificate:** 24

**Students' on time graduation rate:** N/A [new certificate]

**Tuition & fees for completing this program within normal time:** As of 05/29/12, this program is not accepting applicants. See 2011-12 disclosure for applicable tuition and fees that year.

**Typical costs for books and supplies:** As of 05/29/12, this program is not accepting applicants. See 2011-12 disclosure for typical costs that year.

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ N/A [new certificate]

**Job placement rate for students who complete this certificate:** N/A [new certificate]

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Pediatric Nurse Practitioner (post-master’s certificate)

**Occupational information:** Holders of this certificate generally enter into occupations related to health, medicine, education or human services. Ten related job profiles:

Name of Occupation	Code*	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Medical and Health Services Managers	11-9111.00	<a href="http://www.onetonline.org/link/summary/11-9111.00">http://www.onetonline.org/link/summary/11-9111.00</a>
Clinical Nurse Specialists	11-9111.01	<a href="http://www.onetonline.org/link/summary/11-9111.01">http://www.onetonline.org/link/summary/11-9111.01</a>
Clinical Research Coordinators	11-9121.01	<a href="http://www.onetonline.org/link/summary/11-9121.01">http://www.onetonline.org/link/summary/11-9121.01</a>
Informatics Nurse Specialists	15-1051.01	<a href="http://www.onetonline.org/link/summary/15-1051.01">http://www.onetonline.org/link/summary/15-1051.01</a>
Nursing Instructors and Teachers, Postsecondary	25-1072.00	<a href="http://www.onetonline.org/link/summary/25-1072.00">http://www.onetonline.org/link/summary/25-1072.00</a>
Health Educators	21-1091.00	<a href="http://www.onetonline.org/link/summary/21-1091.00">http://www.onetonline.org/link/summary/21-1091.00</a>
Physician Assistants	29-1071.00	<a href="http://www.onetonline.org/link/summary/29-1071.00">http://www.onetonline.org/link/summary/29-1071.00</a>
Acute Care Nurses	29-1111.01	<a href="http://www.onetonline.org/link/summary/29-1111.01">http://www.onetonline.org/link/summary/29-1111.01</a>
Critical Care Nurses	29-1111.03	<a href="http://www.onetonline.org/link/summary/29-1111.03">http://www.onetonline.org/link/summary/29-1111.03</a>
Nurse Practitioners	29-1199.03	<a href="http://www.onetonline.org/link/summary/29-1199.03">http://www.onetonline.org/link/summary/29-1199.03</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## **Graduate Certificate: Psychiatric Clinical Nurse Specialist** (Program will be discontinued. Disclosure for archive purposes only).

**Officially approved as:**    **Stand Alone:** Yes    **Degree Dependent:** No

**Total Credit Hours:** 16

**Certificate description:** Advanced practice nurses are traditionally prepared at the graduate level in a specific clinical area. The specialty area may be identified in terms of population (e.g. pediatrics or adults), and/or type of problem (e.g. mental health). The advanced practice nurse is directly accountable for clinical judgments which includes independent and interdependent decision making. Holders of this certificate provide advanced treatment of psychiatric & mental health problems and disorders in adults using a variety of therapeutic and interpersonal techniques. Can use advanced knowledge in the treatment of adult psychiatric and mental health problems and disorders. Certificate is available via online learning.

**Certificate web site:** N/A **As of 05/29/12, this program is not accepting applicants.**

**For information about certificate, contact:** Office of Student Affairs

**email:** [nursing@missouri.edu](mailto:nursing@missouri.edu)

**Phone:** 573-882-0277

**Address:** Sinclair School of Nursing S235 School of Nursing, Columbia, Mo. 65211

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### **Federal Disclosure**

**OPEID Code:** 002516

**CIP Code:** 51.3810

**Credential Level:** 04

**Months needed to complete certificate:** 24

**Students' on time graduation rate:** N/A [new certificate]

**Tuition & fees for completing this program within normal time:** As of 05/29/12, this program is not accepting applicants. See 2011-12 disclosure for applicable tuition and fees that year.

**Typical costs for books and supplies:** As of 05/29/12, this program is not accepting applicants. See 2011-12 disclosure for typical costs that year.

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ N/A [new certificate]

**Placement rate for students who complete this certificate** N/A [new certificate]

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** [Adult] Psychiatric and Mental Health Clinical Nurse Specialist  
 (post-master’s certificate)

**Occupational information:** Holders of this certificate generally enter into occupations related to health, medicine, education or human services. Ten related job profiles:

Name of Occupation	Code*	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Medical and Health Services Managers	11-9111.00	<a href="http://www.onetonline.org/link/summary/11-9111.00">http://www.onetonline.org/link/summary/11-9111.00</a>
Clinical Nurse Specialists	11-9111.01	<a href="http://www.onetonline.org/link/summary/11-9111.01">http://www.onetonline.org/link/summary/11-9111.01</a>
Clinical Research Coordinators	11-9121.01	<a href="http://www.onetonline.org/link/summary/11-9121.01">http://www.onetonline.org/link/summary/11-9121.01</a>
Informatics Nurse Specialists	15-1051.01	<a href="http://www.onetonline.org/link/summary/15-1051.01">http://www.onetonline.org/link/summary/15-1051.01</a>
Mental Health Counselors	21-1014.00	<a href="http://www.onetonline.org/link/summary/21-1014.00">http://www.onetonline.org/link/summary/21-1014.00</a>
Mental Health and Substance Abuse Social Workers	21-1023.00	<a href="http://www.onetonline.org/link/summary/21-1023.00">http://www.onetonline.org/link/summary/21-1023.00</a>
Nursing Instructors and Teachers, Postsecondary	25-1072.00	<a href="http://www.onetonline.org/link/summary/25-1072.00">http://www.onetonline.org/link/summary/25-1072.00</a>
Health Educators	21-1091.00	<a href="http://www.onetonline.org/link/summary/21-1091.00">http://www.onetonline.org/link/summary/21-1091.00</a>
Physician Assistants	29-1071.00	<a href="http://www.onetonline.org/link/summary/29-1071.00">http://www.onetonline.org/link/summary/29-1071.00</a>
Advanced Practice Psychiatric Nurses	29-1111.02	<a href="http://www.onetonline.org/link/summary/29-1111.02">http://www.onetonline.org/link/summary/29-1111.02</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Organizational Change

**Officially approved as:**    **Stand Alone:** Yes        **Degree Dependent:** No

**Total Credit Hours:** 12

**Certificate description:** The graduate certificate in organizational change is a multi-disciplinary and multi-sector approach to the theory and practice of transforming organizations and communities in a technologically advanced and global economy. Students will have an opportunity to develop knowledge and competencies appropriate to the advanced study and diagnosis of evolving and emerging organizations and communities in the public, private, and nonprofit arena. They will find a curriculum supportive of careers in academics, management, and consulting.

**Certificate web site:** <http://truman.missouri.edu/DegreePrograms/GraduateCertificates/Org>

**For information about certificate, contact:** Truman School of Public Affairs

**email:** [Truman@missouri.edu](mailto:Truman@missouri.edu)

**Phone:** (573) 884-1656

**Address:** 101 Middlebush Hall University of Missouri        Columbia, MO        65211

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### Federal Disclosure

**OPEID Code:** 002516

**CIP Code:** 44.0201

**Credential Level:** 04

**Months needed to complete certificate:** 24

**Students' on time graduation rate:** 100%

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$3867; non resident tuition, \$9,190; Fees=\$2008 (4 semesters x \$502 per semester)

**Typical costs for books and supplies:** \$ Books and computing fees, \$200

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ 0

**Job placement rate for students who complete this certificate:** 100%

Related occupational codes begin on the next page >>

**Graduate Certificate:** Organizational Change

**Occupational information:** Holders of this certificate generally enter into occupations related to local, state and federal government, education, nonprofit work, or social and human services. Ten illustrative job profiles:

<b>Name of Occupation</b>	<b>Code*</b>	<b>View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a></b>
Chief Executives	11-1011.00	<a href="http://www.onetonline.org/link/summary/11-1011.00">http://www.onetonline.org/link/summary/11-1011.00</a>
General and Operations Managers	11-1021.00	<a href="http://www.onetonline.org/link/summary/11-1021.00">http://www.onetonline.org/link/summary/11-1021.00</a>
Human Resources Managers	11-3040.00	<a href="http://www.onetonline.org/link/summary/11-3040.00">http://www.onetonline.org/link/summary/11-3040.00</a>
Education Administrators, Elementary and Secondary School	11-9032.00	<a href="http://www.onetonline.org/link/summary/11-9032.00">http://www.onetonline.org/link/summary/11-9032.00</a>
Compliance Managers	11-9199.02	<a href="http://www.onetonline.org/link/summary/11-9199.02">http://www.onetonline.org/link/summary/11-9199.02</a>
Management Analysts	13-1111.00	<a href="http://www.onetonline.org/link/summary/13-1111.00">http://www.onetonline.org/link/summary/13-1111.00</a>
Industrial-Organizational Psychologists	19-3032.00	<a href="http://www.onetonline.org/find/quick?s=consultant">http://www.onetonline.org/find/quick?s=consultant</a>
Directors, Religious Activities and Education	21-2021.00	<a href="http://www.onetonline.org/link/summary/21-2021.00">http://www.onetonline.org/link/summary/21-2021.00</a>
Program Directors	27-2012.03	<a href="http://www.onetonline.org/link/summary/27-2012.03">http://www.onetonline.org/link/summary/27-2012.03</a>
First-Line Supervisors/Managers of Office and Administrative Support Workers	43-1011.00	<a href="http://www.onetonline.org/link/summary/43-1011.00">http://www.onetonline.org/link/summary/43-1011.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Personal Financial Planning

Officially approved as:    **Stand Alone:** Yes    **Degree Dependent:** No

**Total Credit Hours:** 18

**Certificate description:** Students may earn a Certificate in Personal Financial Planning in this resident, non-degree, post-baccalaureate CFP® Board registered program. Graduate coursework in Personal Financial Planning at the University of Missouri analyzes household and consumer economic conditions and behavior, economic and social policy and the interrelationships among these elements. The Certificate focuses just on the education needed to sit for the CFP® exam.

**Certificate web site:** <http://pfp.missouri.edu/graduate.html>

**For information about certificate, contact:** Dr. Deanna L. Sharpe, PhD. Associate Professor, CFP Program Director and Director of Graduate Studies.

**email:** [sharped@missouri.edu](mailto:sharped@missouri.edu)

**Phone:** (573) 882-7836

**Address:** Department of Personal Financial Planning, College of Human Environmental Sciences 239 Stanley Hall, Columbia, MO 65211

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### Federal Disclosure

**OPEID Code:** 002516

**CIP Code:** 19.0401

**Credential Level:** 04

**Months needed to complete certificate:** 24

**Students' on time graduation rate:** 66%

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$5862; non resident tuition, \$14,479; Fees=\$2312 (4 semesters x \$578 per semester)

**Typical costs for books and supplies:** books approx \$700.00

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ 0

**Job placement rate for students who complete this certificate:** 100%

Related occupational codes begin on the next page >>

**Graduate Certificate:** Personal Financial Planning

**Occupational information:** Holders of this certificate generally enter into occupations related to finance, business, or human services. Ten related job profiles:

<b>Name of Occupation</b>	<b>Code*</b>	<b>View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a></b>
Compensation, Benefits, and Job Analysis Specialists	13-1072.00	<a href="http://www.onetonline.org/link/summary/13-1072.00">http://www.onetonline.org/link/summary/13-1072.00</a>
Personal Financial Advisors	13-2052.00	<a href="http://www.onetonline.org/link/summary/13-2052.00">http://www.onetonline.org/link/summary/13-2052.00</a>
Financial Analysts	13-2051.00	<a href="http://www.onetonline.org/link/summary/13-2051.00">http://www.onetonline.org/link/summary/13-2051.00</a>
Loan Counselors	13-2071.00	<a href="http://www.onetonline.org/link/summary/13-2071.00">http://www.onetonline.org/link/summary/13-2071.00</a>
Loan Officers	13-2072.00	<a href="http://www.onetonline.org/link/summary/13-2072.00">http://www.onetonline.org/link/summary/13-2072.00</a>
Investment Underwriters	13-2099.03	<a href="http://www.onetonline.org/link/summary/13-2099.03">http://www.onetonline.org/link/summary/13-2099.03</a>
Home Economics Teachers, Postsecondary	25-1192.00	<a href="http://www.onetonline.org/link/summary/25-1192.00">http://www.onetonline.org/link/summary/25-1192.00</a>
Farm and Home Management Advisors	25-9021.00	<a href="http://www.onetonline.org/link/summary/25-9021.00">http://www.onetonline.org/link/summary/25-9021.00</a>
Insurance Sales Agents	41-3021.00	<a href="http://www.onetonline.org/link/summary/41-3021.00">http://www.onetonline.org/link/summary/41-3021.00</a>
Sales Agents, Securities and Commodities	41-3031.01	<a href="http://www.onetonline.org/link/summary/41-3031.01">http://www.onetonline.org/link/summary/41-3031.01</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Public Health

**Officially approved as:**    **Stand Alone:** Yes    **Degree Dependent:** No

**Total Credit Hours:** 12

**Certificate description:** The Graduate Certificate in Public Health offers working professionals the opportunity to enhance their knowledge of foundational areas of public health, including biostatistics, epidemiology, environmental health and health services administration. Students may earn a stand-alone certificate after twelve credit hours (four courses) or may apply earned credits toward the MPH, should they wish to continue their studies. Certificate students who receive B’s or better in all four courses are automatically recommended for admission into the MPH program.

**Certificate web site** <http://publichealth.missouri.edu/certificate/index.php>

**For information about certificate, contact:** Sandy Gummersheimer, M.A.-TESL, MPH Academic Advisor,  
Master of Public Health Program

**email:** [gummersheimers@health.missouri.edu](mailto:gummersheimers@health.missouri.edu)

**Phone:** (573) 884-6836

**Address:** Masters of Public Health Program, 802 Lewis Hall, University of Missouri-Columbia, Columbia, MO  
65211

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### Federal Disclosure

**OPEID Code:** 002516

**CIP Code:** 51.2201

**Credential Level:** 04

**Months needed to complete certificate:** 12

**Students’ on time graduation rate:** 93%

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$3867; non resident tuition, \$9,190; Fees=\$1004 (2 semesters x \$502 per semester)

**Typical costs for books and supplies:** \$2,000

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier’s Office:** <http://cashiers.missouri.edu>

**Median loan debit of students completing the program:** \$ 0, (\$4,342 average)

**Job placement rate for students who complete this certificate:** 29 completed; of those, 23 continued with graduate studies; 3 were employed; 3 unknown (international students).

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Public Health

**Occupational information:** Holders of this certificate generally enter into occupations related to education and training; health science, or human services. Ten related job profiles:

<b>Name of Occupation</b>	<b>Code*</b>	<b>View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a></b>
Clinical Research Coordinators	11-9121.01	<a href="http://www.onetonline.org/link/summary/11-9121.01">http://www.onetonline.org/link/summary/11-9121.01</a>
Informatics Nurse Specialists	15-1051.01	<a href="http://www.onetonline.org/link/summary/15-1051.01">http://www.onetonline.org/link/summary/15-1051.01</a>
Epidemiologists	19-1041.00	<a href="http://www.onetonline.org/link/summary/19-1041.00">http://www.onetonline.org/link/summary/19-1041.00</a>
Urban and Regional Planners	19-3051.00	<a href="http://www.onetonline.org/link/summary/19-3051.00">http://www.onetonline.org/link/summary/19-3051.00</a>
Environmental Scientists and Specialists, Including Health	19-2041.00	<a href="http://www.onetonline.org/link/summary/19-2041.00">http://www.onetonline.org/link/summary/19-2041.00</a>
Medical and Public Health Social Workers	21-1022.00	<a href="http://www.onetonline.org/link/summary/21-1022.00">http://www.onetonline.org/link/summary/21-1022.00</a>
Health Educators	21-1091.00	<a href="http://www.onetonline.org/link/summary/21-1091.00">http://www.onetonline.org/link/summary/21-1091.00</a>
Nursing Instructors and Teachers, Postsecondary	25-1072.00	<a href="http://www.onetonline.org/link/summary/25-1072.00">http://www.onetonline.org/link/summary/25-1072.00</a>
Reporters and Correspondents	27-3022.00	<a href="http://www.onetonline.org/link/summary/27-3022.00">http://www.onetonline.org/link/summary/27-3022.00</a>
Registered Nurses	29-1111.00	<a href="http://www.onetonline.org/link/summary/29-1111.00">http://www.onetonline.org/link/summary/29-1111.00</a>
Veterinarians	29-1131.00	<a href="http://www.onetonline.org/link/summary/29-1131.00">http://www.onetonline.org/link/summary/29-1131.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Public Management

Officially approved as:    **Stand Alone:** Yes    **Degree Dependent:** No

**Total Credit Hours:** 12

**Certificate description:** To advance in careers in state and local government, public managers need to be effective leaders who manage resources ethically and responsibly. Public management certificate students improve their skills for managing people, budgets, and more effective organizations overall.

**Certificate web site:** <http://truman.missouri.edu/DegreePrograms/GraduateCertificates/Org>

**For information about certificate, contact:** Truman School of Public Affairs

**email:** [Truman@missouri.edu](mailto:Truman@missouri.edu)

**Phone:** (573) 884-1656

**Address:** 101 Middlebush Hall University of Missouri      Columbia, MO      65211

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### Federal Disclosure

**OPEID Code:** 002516

**CIP Code:** 44.0401

**Credential Level:** 04

**Months needed to complete certificate:** 9

**Students' on time graduation rate:** 100%

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$3867; non resident tuition, \$9,190; Fees=\$1004 (2 semesters x \$502 per semester)

**Typical costs for books and supplies:** \$ 200

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ 0 (\$5,488 average)

**Job placement rate for students who complete this certificate:** 100%

Related occupational codes begin on the next page >>

**Graduate Certificate:** Public Management

**Occupational information:** Holders of this certificate generally enter into occupations related to local, state and federal government, education, and social and human services. Ten illustrative job profiles:

Name of Occupation	Code*	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Chief Executives	11-1011.00	<a href="http://www.onetonline.org/link/summary/11-1011.00">http://www.onetonline.org/link/summary/11-1011.00</a>
Chief Sustainability Officers	11-1011.03	<a href="http://www.onetonline.org/link/summary/11-1011.03">http://www.onetonline.org/link/summary/11-1011.03</a>
General and Operations Managers	11-1021.00	<a href="http://www.onetonline.org/link/summary/11-1021.00">http://www.onetonline.org/link/summary/11-1021.00</a>
Legislators	11-1031.00	<a href="http://www.onetonline.org/link/summary/11-1031.00">http://www.onetonline.org/link/summary/11-1031.00</a>
Public Relations Managers	11-2031.00	<a href="http://www.onetonline.org/link/summary/11-2031.00">http://www.onetonline.org/link/summary/11-2031.00</a>
Human Resources Managers	11-3040.00	<a href="http://www.onetonline.org/link/summary/11-3040.00">http://www.onetonline.org/link/summary/11-3040.00</a>
Compensation and Benefits Managers	11-3041.00	<a href="http://www.onetonline.org/link/summary/11-3041.00">http://www.onetonline.org/link/summary/11-3041.00</a>
Compliance Managers	11-9199.02	<a href="http://www.onetonline.org/link/summary/11-9199.02">http://www.onetonline.org/link/summary/11-9199.02</a>
Management Analysts	13-1111.00	<a href="http://www.onetonline.org/link/summary/13-1111.00">http://www.onetonline.org/link/summary/13-1111.00</a>
Program Directors	27-2012.03	<a href="http://www.onetonline.org/link/summary/27-2012.03">http://www.onetonline.org/link/summary/27-2012.03</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Science and Public Policy

Officially approved as:    **Stand Alone:** Yes    **Degree Dependent:** Yes

**Total Credit Hours:** 12

**Certificate description:** The public policy specialization offers students a strong foundation in the skills necessary to work effectively in the policy environment. Students in the public policy specialization learn theories of the policy process, quantitative and qualitative research methods to analyze policy, and program evaluation. Students also have the opportunity to gain expertise in specific policy areas including education policy, environmental policy, health policy, social policy, and regional development policy.

**Certificate web site:** <http://truman.missouri.edu/DegreePrograms/GraduateCertificates/PublicPolicy>

**For information about certificate, contact:** Truman School of Public Affairs

**email:** [Truman@missouri.edu](mailto:Truman@missouri.edu)

**Phone:** (573) 884-1656

**Address:** 101 Middlebush Hall    University of Missouri    Columbia, MO    65211

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### Federal Disclosure

**OPEID Code:** 002516

**CIP Code:** 44.0501

**Credential Level:** 04

**Months needed to complete certificate:** 24

**Students' on time graduation rate:** N/A [new certificate]

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$3867; non resident tuition, \$9,190; Fees=\$2008 (4 semesters x \$502 per semester)

**Typical costs for books and supplies:** \$ Books and computing fees, \$200

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ N/A [new certificate]

**Job placement rate for students who complete this certificate:** N/A [new certificate]

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Science and Public Policy

**Occupational information:** Holders of this certificate generally enter into occupations related to local, state and federal government, education, and social and human services. Ten illustrative job profiles:

Name of Occupation	Code*	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Chief Executives	11-1011.00	<a href="http://www.onetonline.org/link/summary/11-1011.00">http://www.onetonline.org/link/summary/11-1011.00</a>
Chief Sustainability Officers	11-1011.03	<a href="http://www.onetonline.org/link/summary/11-1011.03">http://www.onetonline.org/link/summary/11-1011.03</a>
Legislators	11-1031.00	<a href="http://www.onetonline.org/link/summary/11-1031.00">http://www.onetonline.org/link/summary/11-1031.00</a>
Public Relations Managers	11-2031.00	<a href="http://www.onetonline.org/link/summary/11-2031.00">http://www.onetonline.org/link/summary/11-2031.00</a>
Management Analysts	13-1111.00	<a href="http://www.onetonline.org/link/summary/13-1111.00">http://www.onetonline.org/link/summary/13-1111.00</a>
Environmental Scientists and Specialists, Including Health	19-2041.00	<a href="http://www.onetonline.org/link/summary/19-2041.00">http://www.onetonline.org/link/summary/19-2041.00</a>
Economists	19-3011.00	<a href="http://www.onetonline.org/link/summary/19-3011.00">http://www.onetonline.org/link/summary/19-3011.00</a>
Urban and Regional Planners	19-3051.00	<a href="http://www.onetonline.org/link/summary/19-3051.00">http://www.onetonline.org/link/summary/19-3051.00</a>
Political Scientists	19-3094.00	<a href="http://www.onetonline.org/link/summary/19-3094.00">http://www.onetonline.org/link/summary/19-3094.00</a>
Reporters and Correspondents	27-3022.00	<a href="http://www.onetonline.org/link/summary/27-3022.00">http://www.onetonline.org/link/summary/27-3022.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Teaching High School Physics

Officially approved as:    **Stand Alone:** Yes    **Degree Dependent:**

**Total Credit Hours:** 13

**Certificate description:** Through this project, participants gain an expanded range of leadership expertise, content knowledge and pedagogical proficiency to share with others, as they become resources and catalysts for reform in science education at the secondary and post-secondary institutional levels. Ultimately, the overall goal is a significant increase in student achievement in science and science coursework.

**Certificate web site:** [www.physicsfirstmo.org](http://www.physicsfirstmo.org)

**For information about certificate, contact:** Department of Physics

**email:** [hillsar@missouri.edu](mailto:hillsar@missouri.edu)    **Phone:** (573) 882-7997

**Address:** 33 Physics Building, University of Missouri, Columbia, MO 65211-7010

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### Federal Disclosure

**OPEID Code:** 002516

**CIP Code:** 40.0801

**Credential Level:** 04

**Months needed to complete certificate:** 36

**Students' on time graduation rate:** N/A [new certificate]

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$4,216; non resident tuition, \$10,072; Fees=\$3090 (6 semesters x \$515 per semester)

**Typical costs for books and supplies:** books approx \$700.00

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ N/A [new certificate]

**Job placement rate for students who complete this certificate:** N/A [new certificate]

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Teaching High School Physics

**Occupational information:** Holders of this certificate generally enter into occupations related to education. Related job profile:

<b>Name of Occupation</b>	<b>SOC Code</b>	<b>View Occupational Profile on <a href="#">O*Net</a></b>
Secondary School Teachers, Except Special and Vocational Education	25-2031.00	<a href="http://www.onetonline.org/link/summary/25-2031.00">http://www.onetonline.org/link/summary/25-2031.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Youth Development Specialist

Officially approved as:    **Stand Alone:** Yes    **Degree Dependent:** No

**Total Credit Hours:** 13

**Certificate description:** A certificate in youth development is ideal for professionals in a variety of youth-related fields. Areas include youth-serving organizations like 4-H; Boys and Girls Club; non-profit organizations; faith-based groups; community recreation facilities; correctional professions; elementary, middle and high school educators; and extension educators.

**Certificate web site:**

[http://hdfs.missouri.edu/documents/graduate/youthdevelopment\\_certificaterequirements.pdf](http://hdfs.missouri.edu/documents/graduate/youthdevelopment_certificaterequirements.pdf)

**For information about certificate, contact:** Department of Human Development and Family Studies, College of Human Environmental Sciences

**email:** [colemanma@missouri.edu](mailto:colemanma@missouri.edu)    **Phone:** (573) 882-4360

**Address:** Department of Human Development and Family Studies, College of Human Environmental Sciences 314 Gentry Hall, Columbia, MO 65211

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### Federal Disclosure

**OPEID Code:** 002516    **CIP Code:** 44.0702    **Credential Level:** 04

**Months needed to complete certificate:** 24

**Students' on time graduation rate:** N/A [new certificate]

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$4,216; non resident tuition, \$10,072; Fees=\$2060 (4 semesters x \$515 per semester)

**Typical costs for books and supplies:** \$700.00 . Students also need a computer & internet access.

**Cost of room and board, if applicable:** \$ N/A [new certificate]

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ N/A [new certificate]

**Job placement rate for students who complete this certificate:** N/A [new certificate]

Related occupational codes begin on the next page >>

**Graduate Certificate:** Youth Development Specialist

**Occupational information:** Holders of this certificate generally enter into occupations related to education and training; health science, or human services. Ten related job profiles:

Name of Occupation	Code*	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Social and Community Service Managers	11-9151.00	<a href="http://www.onetonline.org/link/summary/11-9151.00">http://www.onetonline.org/link/summary/11-9151.00</a>
Substance Abuse and Behavioral Disorder Counselors	21-1011.00	<a href="http://www.onetonline.org/link/summary/21-1011.00">http://www.onetonline.org/link/summary/21-1011.00</a>
Child, Family, and School Social Workers	21-1021.00	<a href="http://www.onetonline.org/link/summary/21-1021.00">http://www.onetonline.org/link/summary/21-1021.00</a>
Probation Officers and Correctional Treatment Specialists	21-1092.00	<a href="http://www.onetonline.org/link/summary/21-1092.00">http://www.onetonline.org/link/summary/21-1092.00</a>
Social and Human Service Assistants	21-1093.00	<a href="http://www.onetonline.org/link/summary/21-1093.00">http://www.onetonline.org/link/summary/21-1093.00</a>
Directors, Religious Activities and Education	21-2021.00	<a href="http://www.onetonline.org/link/summary/21-2021.00">http://www.onetonline.org/link/summary/21-2021.00</a>
Adaptive Physical Education Specialists	25-3099.01	<a href="http://www.onetonline.org/link/summary/25-3099.01">http://www.onetonline.org/link/summary/25-3099.01</a>
Instructional Coordinators	25-9031.00	<a href="http://www.onetonline.org/link/summary/25-9031.00">http://www.onetonline.org/link/summary/25-9031.00</a>
Program Directors	27-2012.03	<a href="http://www.onetonline.org/link/summary/27-2012.03">http://www.onetonline.org/link/summary/27-2012.03</a>
Recreation Workers	39-9032.00	<a href="http://www.onetonline.org/link/summary/39-9032.00">http://www.onetonline.org/link/summary/39-9032.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

## Graduate Certificate: Youth Development Program Management and Evaluation

**Officially approved as:**    **Stand Alone:** Yes    **Degree Dependent:** No

**Total Credit Hours:** 13

**Certificate description:** A certificate in youth development is ideal for professionals in a variety of youth-related fields. Areas include youth-serving organizations like 4-H; Boys and Girls Club; non-profit organizations; faith-based groups; community recreation facilities; correctional professions; elementary, middle and high school educators; and extension educators.

**Certificate web site:** [http://hdfs.missouri.edu/prospective\\_graduate.html#onlineprograms](http://hdfs.missouri.edu/prospective_graduate.html#onlineprograms)

**For information about certificate, contact:** Department of Human Development and Family Studies, College of Human Environmental Sciences

**email:** [colemanma@missouri.edu](mailto:colemanma@missouri.edu)    **Phone:** (573) 882-4360

**Address:** Department of Human Development and Family Studies, College of Human Environmental Sciences 314 Gentry Hall, Columbia, MO 65211

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### Federal Disclosure

**OPEID Code:** 002516

**CIP Code:** 44.0702

**Credential Level:** 04

**Months needed to complete certificate:** 24

**Students' on time graduation rate:** N/A [new certificate]

**Tuition & fees for completing this program within normal time:** Tuition, resident = \$4,216; non resident tuition, \$10,072; Fees=\$2060 (4 semesters x \$515 per semester)

**Typical costs for books and supplies:** \$700.00 Students also need a computer & internet access.

**Cost of room and board, if applicable:** \$ N/A

**University of Missouri Cashier's Office:** <http://cashiers.missouri.edu/>

**Median loan debt of students completing the program:** \$ N/A [new certificate]

**Job placement rate for students who complete this certificate:** N/A [new certificate]

**Related occupational codes begin on the next page >>**

**Graduate Certificate:** Youth Development Program management and Evaluation

**Occupational information:** Holders of this certificate generally enter into occupations related to education and training; health science, or human services. Ten related job profiles:

Name of Occupation	Code*	View Occupational Profile on <a href="http://www.onetonline.org">O*Net</a>
Social and Community Service Managers	11-9151.00	<a href="http://www.onetonline.org/link/summary/11-9151.00">http://www.onetonline.org/link/summary/11-9151.00</a>
Substance Abuse and Behavioral Disorder Counselors	21-1011.00	<a href="http://www.onetonline.org/link/summary/21-1011.00">http://www.onetonline.org/link/summary/21-1011.00</a>
Child, Family, and School Social Workers	21-1021.00	<a href="http://www.onetonline.org/link/summary/21-1021.00">http://www.onetonline.org/link/summary/21-1021.00</a>
Probation Officers and Correctional Treatment Specialists	21-1092.00	<a href="http://www.onetonline.org/link/summary/21-1092.00">http://www.onetonline.org/link/summary/21-1092.00</a>
Social and Human Service Assistants	21-1093.00	<a href="http://www.onetonline.org/link/summary/21-1093.00">http://www.onetonline.org/link/summary/21-1093.00</a>
Directors, Religious Activities and Education	21-2021.00	<a href="http://www.onetonline.org/link/summary/21-2021.00">http://www.onetonline.org/link/summary/21-2021.00</a>
Adaptive Physical Education Specialists	25-3099.01	<a href="http://www.onetonline.org/link/summary/25-3099.01">http://www.onetonline.org/link/summary/25-3099.01</a>
Instructional Coordinators	25-9031.00	<a href="http://www.onetonline.org/link/summary/25-9031.00">http://www.onetonline.org/link/summary/25-9031.00</a>
Program Directors	27-2012.03	<a href="http://www.onetonline.org/link/summary/27-2012.03">http://www.onetonline.org/link/summary/27-2012.03</a>
Recreation Workers	39-9032.00	<a href="http://www.onetonline.org/link/summary/39-9032.00">http://www.onetonline.org/link/summary/39-9032.00</a>

**Source:** See US Department of Labor O\*NET: <http://www.onetonline.org/> for additional related occupational profiles.

University Libraries  
University of Missouri--Columbia

Project: MU Catalogs

Source information

Format	Book
Content type	Text and images
Notes	PDF file downloaded from the University Registrar's website, 2017 June: <a href="http://catalog.missouri.edu/archives/">http://catalog.missouri.edu/ archives/</a>
File type	pdf