

NON-CIRCULATING

Spec-m  
LD  
3007  
A12  
89 H1  
1988



College of Veterinary Medicine

# Catalog

University of Missouri  
Columbia



<b>Contents</b>	
<b>Veterinary Medicine at Mizzou</b> .....	2
History, Careers, Facilities	
<b>Fees and Expenses</b> .....	7
<b>Admission</b> .....	8
High School Study, Preprofessional Study	
<b>Aids and Awards</b> .....	10
Scholarship and Proficiency, Loans, Awards, Student Activities	
<b>Professional Program</b> .....	14
Professional Curriculum, Requirements for Graduation, Advanced Study	
<b>Departments</b> .....	16
Veterinary Biomedical Sciences, Veterinary Medicine and Surgery, Veterinary Microbiology, Veterinary Pathology, Veterinary Medical Diagnostic Laboratory, Laboratory Animal Medicine Area Program	
<b>Statement of Courses</b> .....	19
<b>Faculty</b> .....	20

## University of Missouri Board of Curators

W.H. Bates, president  
 Jeanne V. Epple, vice president  
 Sam B. Cook  
 Eva Louise Frazer  
 Fred S. Kummer  
 John P. Lichtenegger  
 Peter Hamilton Raven  
 James C. Sterling  
 Edwin S. Turner

## Administration

C. Peter Magrath, president  
 Haskell Monroe, chancellor  
 Lois B. DeFleur, provost  
 Robert Kahrs, dean College of Veterinary Medicine

## University of Missouri-Columbia Catalog (651-82000)

Volume 89    Number 1    January 1988    General 1988 Series    Number 1

Published by the Publications and Alumni Communications Office, a department of University Relations, 1100 University Place, 1205 University Ave., Columbia, MO 65211. Issued five times a year as follows: January, July, September, November and December. Second class postage paid at Columbia, MO. POSTMASTER: Send form 3579 to 1100 University Place, 1205 University Ave., Columbia, MO 65211.

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

The University of Missouri is an Equal Opportunity/Affirmative Action institution and is nondiscriminatory relative to race, religion, color, national origin, sex, age and qualified disabled.





# Your College of Veterinary Medicine



**T**he College of Veterinary Medicine at the University of Missouri-Columbia is the only institution in Missouri that awards the doctor of veterinary medicine (DVM) degree. The primary missions and first priorities of the college are to offer educational opportunities to qualified Missouri residents seeking access to the veterinary medical profession and to provide competent professionals to meet all the health needs of all species of animals.

The programs needed to meet these educational objectives fulfill many of the public's expectations of the state's only complete animal health facility. Thus the professional (DVM) curriculum is integrated with college activities providing statewide animal disease diagnostic services, extension and continuing education programs for animal-owners, consultation services for all species of animals, research programs in animal and human diseases, and advanced specialized training for veterinarians, bioagricultural and biomedical scientists.

These programs support Missouri's 2.5 billion dollar livestock industry and touch over one million companion animal-owning households.

Annually, the college graduates about 70 new veterinarians from the rigorous

four-year curriculum that requires three years of preprofessional college-level studies for admission.

The program involves classroom and laboratory presentations and extensive clinical training providing hands-on experience in the diagnosis, treatment and prevention of diseases of all animal species.

Thus, graduates are animal health experts, complete veterinarians, who after graduation and licensing, are ready for any phase of veterinary medicine. Most eventually focus on some restricted professional activity and some seek additional training in a scientific or clinical area of specialization.

The curriculum is carefully monitored by the Council on Education of the American Veterinary Medical Association. In order to be accredited, the college must maintain high teaching standards, and students must develop knowledge, skills and experience in diseases and health-related conditions of all species of animals. This responsibility requires the total energies of a highly-trained and dedicated faculty and 50 post-doctoral trainees who contribute to the teaching program while they study and develop specialized expertise. The college's teaching hospital, which handles more than 26,000 patients annually, is fully accredited by the American Animal Hospital Association.

The Veterinary Medical Diagnostic Laboratory at the college handles more than 200,000 specimens annually and is fully accredited by the American Association of Veterinary Laboratory Diagnosticians. In addition, to diagnosing disease, it provides required tests for Missouri's \$125,000,000 livestock export industry and responds to infectious or toxic emergencies involving animals, the environment and the food chain. Each year the faculty responds to thousands of queries on all aspects of animal health.

The college has attained prominence for its contributions to knowledge about infectious and reproductive diseases of livestock, small animal surgery, equine lameness, bloodborne infections and blood clotting disorders, cardiovascular physiology of animals and man, procedures for diagnosing animal diseases and the humane care and use of research animals.

This knowledge is disseminated to students, veterinarians, livestock and companion animal owners and the scientific community through publications, classroom teaching, presentations and telephone responses to thousands of queries each year.

The college is proud of its heritage and seeks to meet the challenges of the future and expand on its unique traditions through continued dedication to excellence by constantly encouraging students, faculty and staff to achieve to their highest capability, by insisting on wise and efficient utilization of resources and by actively seeking a balanced base of support from public, private and corporate sources.

This catalog outlines the multiple dimensions of modern veterinary medicine and details the teaching, research and service programs of your college. It contains information on career opportunities and admissions and describes the curriculum leading to the DVM degree. We hope it helps you understand veterinary medicine and your College of Veterinary Medicine. If you have questions, please call us.

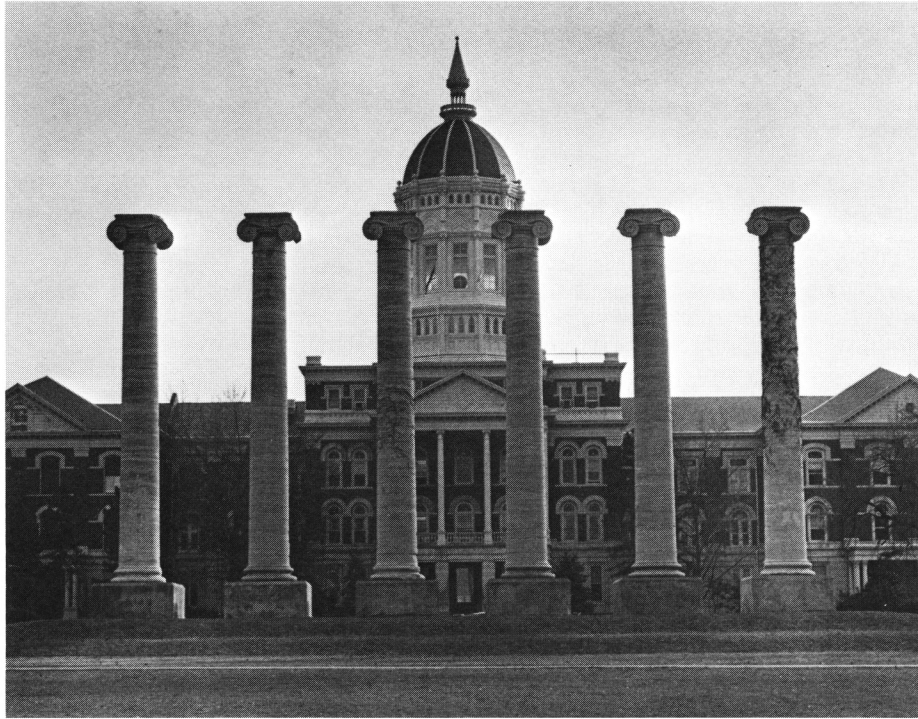
*Robert F. Kahrs*

Robert F. Kahrs, DVM  
Dean

V47953



# Veterinary Medicine: The College and the Profession



*Veterinary medicine began at Mizzou in 1884. In 1885, the first vaccine-virus laboratory in the United States was established at the University in the veterinary sciences department.*

## Brief History

**T**he University of Missouri is one university with four campuses—Columbia, Kansas City, Rolla and St. Louis. Established in 1839 at Columbia (oldest and largest of the four campuses), it was the first state university west of the Mississippi River. Designated a land-grant university in 1870, it conducts traditional teaching and research programs on campuses and extends educational benefits throughout Missouri.

The University is governed by a board of curators. The president coordinates programs of all four campuses, and the chancellors are the chief academic and administrative officers for their respective campuses.

Veterinary medicine at the University began in 1884 and has progressed through five stages, a course in veterinary science,

a department of veterinary science, a school of veterinary medicine in the division of agricultural sciences, a school of veterinary medicine as a separate division of Mizzou, and finally, a College of Veterinary Medicine.

In 1885, the first vaccine-virus laboratory in the United States was established at the veterinary science department. A veterinary laboratory was erected in 1887. In early years, staff veterinarians taught courses to medical and agricultural students, conducted research on tick fever and investigated livestock disease throughout the state.

Connaway Hall was built in 1910-11 to house faculty members of the department of veterinary science who taught courses to agricultural students, investigated animal and poultry diseases, and performed diagnostic and extension work. Hog cholera virus and anti-hog cholera serum were produced from 1915 to 1936.

Classes in veterinary medicine were limited to 30 students, all Missouri residents, when the school opened in 1946. In 1965 the number was doubled with some out-of-state residents being accepted to meet the increased demand for veterinarians. In 1976 the enrollment was increased to 76 students. In 1987 the enrollment was reduced to 70 students.

In 1961 the teaching hospital was completed. Phase one of a building program was completed in 1977 providing an excellent facility for teaching, service, diagnostic work and research. Currently, future space needs are being evaluated.

More than 1,900 veterinarians have graduated from the college since 1946.

## Careers in Veterinary Medicine

Veterinary medicine, a proud profession attractive to those interested in animals and with academic talents in the biological sciences, offers a wide variety of challenging and rewarding career opportunities in private practice, government, industry, education and the armed forces.

**Practice Opportunities in Veterinary Medicine.** Today, most veterinarians are engaged in individual or group practices

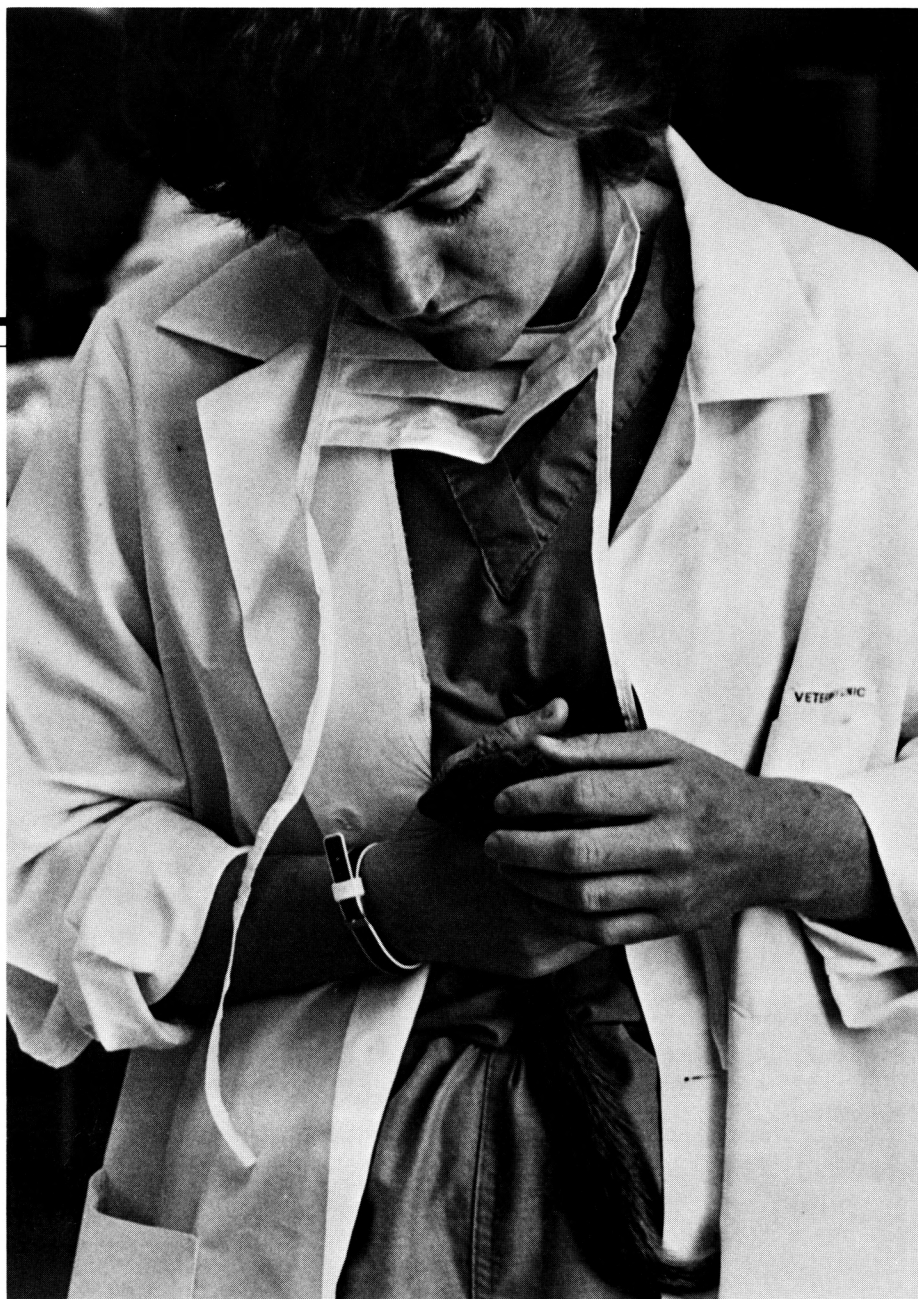


and are either self-employed or work for other private practitioners. Successful practitioners work long and frequently irregular hours. They must be responsive to the emergency needs of their clientele, have well developed interpersonal, managerial and communicative skills and must be astute business persons. The type of practice selected is usually based on the area or population center in which veterinarians choose to live, their desired lifestyle, income expectations and the type of animals with which they prefer working.

**General or Mixed Practice.** Veterinarians who treat all species of animals usually reside on or near rural areas are called general practitioners and work in mixed practices. General practice is a rigorous, physically demanding activity that provides opportunity to become a dedicated public servant and earn a modest income. It requires no formal training beyond the DVM degree but presents the unique challenges of keeping abreast of developments in medical or surgical approaches to all diseases of all kinds of animals through constant reading and attendance at continuing education programs.

**Large Animal Practice.** Some veterinarians work only with livestock and/or horses. Work with these large animals is rigorous and sometimes dangerous. It requires special knowledge, skills and experience in safe handling of animals and requires understanding the economic constraints and management conditions under which they are raised.

Usually large animal practitioners travel to farms. They spend many hours on the road and sometimes must function under challenging field conditions where restraint facilities and sanitary conditions are less than optimal. Economic realities concerning the value of the patient is a prime factor in medical decisions in large animal practice and are a major determinant of practitioner's income. Formal training beyond the DVM degree is not required, but to be successful, large animal practitioners must keep current on emerging knowledge and techniques in large animal medicine and must be familiar with advances in livestock technology and associated health problems. Many large animal practitioners are financially successful, but it is usually one of the



*Characteristics the Admission and Scholarship Committee look for when deciding among Veterinary Medicine applicants include: high scholastic ability, pleasing and alert personality, range of interests, common sense and good judgement, leadership ability and an understanding of the scope of veterinary medicine.*

least lucrative forms of veterinary medicine.

**Small Animal Practice.** Small animal practitioners minister to the health needs of dogs and cats. They usually reside in towns, cities or the suburbs and operate in small animal clinics or pet hospitals that require considerable investment in buildings, furnishings, equipment and upkeep. For the most part, the patients are brought to the clinic. Thus small animal veterinarians function in an environment conducive to practice of a high quality of medicine and surgery with

equipment and supplies comparable to that in a physician's office or hospital. The DVM degree provides adequate background for small animal practice.

In general, small animal practice is the least dangerous, least physically demanding and most profitable practice style. Thus, general practitioner and large animal practitioners tend to migrate to small animal practice as they age and as rural areas become urbanized and livestock populations decline.

**Limited Practices.** Some veterinarians choose to develop expertise in the health





*The United States Department of Agriculture, (USDA), is the single largest employer of veterinarians. These veterinarians conduct research, inspect food products and test serums and vaccines used in combating disease in animals.*

---

*Veterinary medicine is a proud profession attractive to those interested in animals and talented academically in the biological sciences.*

---

problems of one species. Thus there are equine practitioners, bovine practitioners, feline practitioners and even poultry practitioners. Equine practitioners are most numerous among the species limited practices. They understand the special needs of horses, speak the language and fill the special needs of horse owners. Some practice exclusively with racehorses.

Bovine practice emulates large animal practice and feline practice emulates small animal practice. However, equine practice is unique and can be very profitable. The species specialists usually develop their expertise without formalized training, but some use a residency at a college or with another specialist to develop their skill.

**Veterinary Clinical Specialists.** A small number of practicing veterinarians become specialists in areas such as surgery, radiology (x-ray diagnosis and therapy), dermatology, small animal or equine surgery, theriogenology (reproductive diseases) and ophthalmology. These may either do general practice or limit their practice to certain types of diseases. Some travel to several practices, others are specialists within multi-man practices and others are solo practitioners handling special cases referred by other veterinarians. Some clinical specialists develop their ex-

pertise through on the job study and experience but most gain their training in formal residency programs at a veterinary college. Acknowledgement of specialty status is granted by a number of specialty boards or specialty colleges which grant diplomate status by examination. Diplomats are said to be board certified and have certificates so indicating. Most board certified clinical specialists are faculty members at veterinary colleges, but many are in private practice.

**Veterinary Consultants.** Some veterinarians with special knowledge, skills and extensive experience with certain aspects of the profession or with certain types of livestock enterprises serve as consultants to large farms, ranches, feedlots, pharmaceutical manufactures, government agencies, feed companies or other organization needing professional advice. Consulting veterinarians can be practitioners or former practitioners or employees or former employees of corporations, government agencies or universities. The opportunity to serve as a consultant is usually based on expertise developed through years of professional activity and attainment of national prominence in a narrow area. Consulting activities provide supplemental income, opportunities for travel and involvement in a variety of



interesting animal related activities. New graduates are rarely engaged as consultants.

### Employment Opportunities in Veterinary Medicine

While most veterinarians are self-employed or in private practice, about 30 percent are salaried employees of government agencies, universities or corporations. In these positions, they are involved in regulatory activities, diagnostic services, research product development, sales, marketing, teaching. Many assume administration roles.

For the most part, new graduates work in private practice for a few years prior to employment in government and industry. Veterinarians seeking academic and research careers sometimes practice a few years first but often immediately pursue advanced graduate studies leading to MS or PhD degrees or residency programs leading to board certification in clinical specialties.

**Government Employment.** In municipal, state and federal government, veterinarians are employed mostly in health and agricultural agencies. The U.S. Department of Agriculture (USDA) is the single largest employer of veterinarians. In USDA, veterinarians are involved in research, food inspection programs, animal disease control and eradication programs, and in supervision of quality of vaccines and serums used in animals. Other major governmental employers are the National Institution of Health (NIH), which involves many DVMs in research and in laboratory animal medicine, the Food and Drug Administration (FDA), the U.S. Public Health Service and the U.S. Air Force, and the Agency for International Development. These positions involve veterinarians in a wide variety of scientific, professional and managerial activities sometimes with international assignments for which the DVM degree provides unique qualifications.

**Corporate Employment.** Drug and pharmaceutical manufacturers, feed manufacturers, pet food manufacturers and corporate farm and feedlots utilize veterinarians in research and development, management consultation, herd health pro-

gramming, product complaint disposition, technical services, sales and promotional activities and in management and executive capacities. In these organizations, the training and experience offered by veterinarians often provides specialized approaches and unique dimensions to the corporate structure.

**Academic Employment.** In the U.S., over 3,000 veterinarians are employed by colleges and universities. The majority are in veterinary colleges, medical schools, colleges of agriculture, but some work throughout the academic world.

Those pursuing academic careers usually seek advanced training and earn an MS or PhD degree in a basic biomedical or clinical science and/or seek residency training leading to board certification in a clinical specialty.

### Facilities

The University College of Veterinary Medicine is divided into the administrative and academic support offices, four academic departments and a diagnostic laboratory. These units are primarily housed in four buildings in the southeast section of the Columbia campus.

Veterinary Complex—  
Phase I

This complex includes the Veterinary Diagnostic Laboratory and the Veterinary Medicine Building, which is an addition to the Veterinary Medical Teaching Hospital.

The Veterinary Diagnostic Laboratory houses mammalian and avian necropsy and the Research Animal Diagnostic and Investigative Laboratory. Supporting laboratory spaces for toxicology, histopathology, serology, bacteriology, virology and a large incinerator are provided. This facility provides the opportunity for veterinary students to receive instruction in diagnostic laboratory medicine.

The Veterinary Medicine Building houses teaching facilities for the departments of Veterinary Biomedical Sciences, Veterinary Pathology and Veterinary Medicine and Surgery. The facilities include a gross anatomy laboratory, two classrooms, seminar rooms for small classes, learning centers for individual instruction, three surgical suites, anesthesia induction and prepa-

ration room, treatment room, hospital space for more than 50 patients, and support space such as an intensive care unit and clinical pathology laboratory.

Facilities for the Veterinary Medical Library have been expanded and are in the new building. This library, a division of Ellis Library, contains more than 35,000 volumes and receives more than 550 periodicals. This library has two learning centers designed for individual audiotutorial carrels. Open seven days a week, it is designed to serve the veterinary medical and graduate students as well as the teaching and research needs of the college. The medical school library is available as are other libraries in the University system.

Teaching laboratories facilitate the use of visual aids and demonstration materials and provide work and storage space for each student. Students are also assigned individual lockers with additional space for coats, books, microscopes and laboratory supplies.

Continuing education and extension functions are performed in an office-seminar room unit. This space is for the use of multiple visual aids and demonstrations for both professional and nonprofessional continuing education activities. This unit also has a television studio for closed-circuit productions.

Administrative offices in the Veterinary Medicine Building include those of the dean, associate dean for alumni and academic affairs, and the assistant to the dean. Student, faculty and alumni records, and the college fiscal office are here.

The college's research activities are supported by graduate student offices and research laboratories and by the electron microscopes which are located in the Veterinary Medicine Building.

#### Connaway Hall

The Department of Veterinary Microbiology and its associated teaching and research programs are located at several locations. In Connaway Hall, general teaching facilities include a large lecture room; a large laboratory equipped for instruction of students in bacteriology, virology, immunology and parasitology, and an individual learning center. Additional facilities for teaching and research in diagnostic microbiology are located in the diagnostic laboratory.





*Missouri has a continuing professional education program for veterinarians which includes seminars, short courses and conferences. Missouri extension also offers programs about current trends and new techniques to increase the veterinarian's professional competence.*

Laboratory animal housing facilities which meet NIH standards occupy space on the first floor.

#### **Veterinary Science Building**

This building, last of the temporary structures, provides teaching and research facilities for the physiology-pharmacology section of the Department of Veterinary Biomedical Sciences. The facilities include teaching and research laboratories. There are also laboratory animal facilities for teaching and research programs.

#### **Veterinary Medical Teaching Hospital**

The Veterinary Medical Teaching Hospital is the center for teaching clinical medicine. Located in this building are the teaching clinics of the department of Veterinary Medicine and Surgery. A large amphitheater for clinical conferences and student body functions, specialized laboratories for instruction and small seminar rooms for the segmented curriculum are a few of the support facilities available.

The Food Animal Hospital specialized in total health care of livestock. Medical, obstetrical and surgical services are performed in the hospital. A total of 60 food animals can be hospitalized in the facility.

The Ambulatory Clinic provides individual and herd health professional veterinary services for area livestock farmers. Operating with fully equipped, radiodis-

patched vehicles, clinicians and students make farm calls to provide veterinary care and herd management consultation.

The Companion Animal Hospital provides diagnostic, medical and surgical treatment for local pet animals and for those referred by practicing veterinarians. Hospitalization facilities are available for over 100 companion animal patients.

#### **Middlebush Farm**

The 288-acre farm south of Columbia is a divisional resource which is under development to meet needs of the college. The Equine Center and Orthopedic Foundation for Animals is located there. The Equine Center is the home of instructional courses in equine medicine and surgery for professional students. Medical, obstetrical and surgical services are provided for local patients and those referred by practicing veterinarians. Space is provided for sophisticated research projects.

#### **Related Facilities**

Mizzou is one of the few universities in which a college of veterinary medicine and a school of medicine are located on the same campus with colleges of agriculture, arts and science, and engineering. A number of interdisciplinary programs within the University permit the sharing of additional facilities by the College of

Veterinary Medicine.

**Sinclair Research Farm.** This 560-acre farm, officially named the Charles and Josie Sinclair Research Farm for Studies in Aging and Chronic Diseases, is located about four miles southwest of the Columbia campus. Animals, including miniature swine, primates and epileptic cattle, are maintained at the farm as research subjects. Projects to investigate chronic disease or aging may use laboratories and/or animals at the facility.

**Low-Level Radiation Laboratory.** This laboratory contains a low-level, whole-body radiation counter. It is designed to measure natural and induced radioactivity in animals and humans. Several research projects in the College of Veterinary medicine use this facility.

**Dalton Research Center.** This center provides 60,000 square feet of general laboratories, shop, offices and a specialized branch of Ellis Library. Interdisciplinary projects to increase knowledge of environmental adaptation of animal species are coordinated by the center.

**Nuclear Reactor Research Facility.** One of the most powerful university nuclear reactors in the United States is in Research Park near the stadium. The College of Veterinary Medicine has access to this facility to conduct radiobiological experiments.

**Ellis Library.** One of the largest university libraries in the United States, Ellis, houses more than 2.1 million volumes and 19,000 serials and journals every year in the main and branch libraries.

Missouri Agricultural Experiment Station. Coordinates certain research activities in the School of Forestry, Fisheries and Wildlife; College of Home Economics; and College of Veterinary Medicine as well as the College of Agriculture.

**Campus Computer Network.** This network has developed necessary computing facilities to assist both the educational and research programs of all divisions at Mizzou.



# Fees and Expenses

**T**he following schedule lists fees and estimated expenses of an unmarried student living off campus for the year 1986-87.

## First Year (August-July)

Fees.....	\$3,920
includes Mizzou incidental fee, veterinary medicine supplemental fee and student activities fee.	
Supplies, books, instruments .....	\$500
Living expenses.....	\$6,825
includes off-campus rent, utilities, food, transportation, clothing and personal items, insurance and recreation	
Total estimated fees and expenses.....	\$11,245
Non-resident tuition (additional) .....	\$3,340

## Second Year (August-July)

Fees.....	\$3,920
Supplies, books, instruments .....	\$1,000
Living expenses.....	\$7,440
Total estimated fees and expenses.....	\$12,360
Non-resident tuition (additional) .....	\$3,340

## Third Year (July-July)

Fees.....	\$3,920
Supplies, books, instruments .....	\$830
Living expenses.....	\$7,830
Total estimated fees and expenses.....	\$12,580
Non-resident tuition (additional) .....	\$3,340

## Fourth Year (July-May)

Fees.....	\$3,920
Supplies, books, instruments .....	\$1,090
Living expenses (includes expenses for job interviews) .....	\$9,640
Total estimated fees and expenses.....	\$13,560
Non-resident tuition (additional) .....	\$3,340



*During student's third and fourth years in the veterinary medicine program, they learn applications of clinical medical principles and surgery. In this manner, students learn diagnosis, prevention and treatment of diseases in animals.*

Detailed information on fees and expenses including supplemental fees is furnished in the *University of Missouri-Columbia Schedule of Courses*. Upon request, the registrar's office, 221 Jesse Hall will furnish the pamphlet *Tuition and Residence Rules*.

The College of Veterinary Medicine provides students with high quality, binocular microscopes that meet college requirements and receive periodic maintenance.

**Refund of Academic Fees.** Students leaving the college may receive a refund of fees. Subject to certain exceptions and due to the nature of the curriculum refunds

will be calculated following written request to the manager of cashing. Fee refunds are paid in accordance with the following schedule:

100 percent refund before 1st day of class less \$10 for processing enrollment.

70 percent within  $\frac{1}{8}$  of fee period completed.

50 percent refund within  $\frac{3}{8}$  of fee period completed.

0 percent refund after  $\frac{3}{8}$  of fee period completed.

**Refund of Housing Fees.** University room-and-board charges and the contract deposit are refunded in accordance with the terms of the contract.



# Admission

---

*Minorities are encouraged to pursue a degree in the field of veterinary medicine. Women account for 50 percent of the colleges enrollment.*

---

## High-School Study

**A**lthough there are no fixed requirements, high-school preparation for the preprofessional course work should be concentrated in three areas:

**Mathematics** - A good understanding and working knowledge of math is usually essential for success in quantitative sciences such as chemistry and physics.

**English and communication skills** - The abilities to read, write and communicate verbally are absolutely essential for a professional career.

**Science**, especially biology, to see if the subject matter is appealing.

Actually, veterinary medicine may be considered an applied form of biological science. Therefore, it is advisable that a student take four years of math, four years of English, two years of biology and as much chemistry and physics as possible.

## Preprofessional Study

A minimum of 64 hours of preprofessional courses are required for admission to the professional program leading to the doctor of veterinary medicine (DVM) degree. These may be completed at any accredited college or university where the course work is offered and must be taken in residence.

Students interested in completing the preprofessional requirements at Mizzou should address inquiries to the Office of Admissions, 130 Jesse Hall, Columbia, Mo. 65211.

## Preprofessional Curriculum

Students must satisfactorily complete at least 64 semester hours of college work by the end of the winter semester (spring quarter) of the year in which admission is sought. However, the average of those admitted is usually more than 100 semester hours. Students admitted with only two years of preprofessional work are usually those with exceptional scholastic records and aptitude scores.

Students should incorporate the preprofessional curriculum into a degree pro-

gram other than veterinary medicine, since only a limited number of applicants can be admitted into the College of Veterinary Medicine.

The following courses and credit hours must be passed in residence at an accredited institution of higher learning to qualify for admission to the College of Veterinary Medicine. Mizzou courses listed fulfill the requirements. Equivalent courses at other accredited colleges or universities are accepted. If a student has credit by examination, a more advanced course in the same discipline must be taken. Courses taken on the satisfactory/unsatisfactory grading system are not counted for admission to the College of Veterinary Medicine. If a grade of F is made in a required course, the course must be repeated. Correspondence courses are not accepted for admission purposes.

### English or communication: 6 hours

1 Composition; 50 Creative Writing; 60 Exposition; 65GH Honors Exposition; 70 Creative Writing; 161 Technical Writing or more advanced courses.

75 Introduction to Speech Communication or more advanced courses.

### Mathematics: 3 hours

10 College Algebra or more advanced courses

### Inorganic chemistry: 8 hours

11 General Chemistry; 12 General Chemistry or more advanced courses.

### Organic chemistry: 8 hours

210 Organic Chemistry; 211 Organic Chemistry Laboratory; 212 Organic Chemistry or more advanced courses. Biochemistry cannot be substituted for organic chemistry.

### Physics: 5 hours

21 and 22 Elementary College Physics or more advanced courses.

### Biological science: 10 hours

11 Introductory Zoology, 12 General Botany or 10 General Biology or more advanced courses. Required biological science courses must be taken in either the area of biology or zoology.

### Social science and/or humanistic studies: 10 hours

Can include courses from history, economics, political science, geography (except those in cartography, meteorology and climatology), fine arts, classical and for-



*Successful veterinarians work long and frequently irregular hours.*

eign languages, literature, mythology and philosophy.

**Animal science: 3 hours**

15 Animal Science or more advanced courses

**Animal nutrition: 3 hours**

202 or 212 Animal Nutrition or more advanced courses.

**Electives: 8 hours**

May be taken in any area. Students, again are encouraged to pursue a degree program.

**Total: 64 hours**

### Admissions guidelines

Since the Mizzou College of Veterinary Medicine is a state-supported institution and there are more applicants each year than can be admitted, it has been necessary to establish the following priorities concerning admission:

1. First preference is extended to residents of Missouri.
2. Second-level consideration is usually extended to applicants from states without schools of veterinary medicine.

3. Third-level consideration is generally granted to applicants from states with schools of veterinary medicine.

### Application Procedure

It is recommended that all students interested in veterinary medicine contact the office of the associate dean for academic and alumni affairs, College of Veterinary Medicine, for advisement during the fall semester preceding the year of application.

Students must enter the College of Veterinary Medicine at the beginning of the fall semester. Application forms must be requested, completed and submitted not later than December 15 of the year prior to that in which admission is sought. Students seeking admission should follow this procedure:

1. Request admission forms from the office of the associate dean for academic and alumni affairs, Mizzou, College of Veterinary Medicine, Columbia, Mo. 65211. Application materials are available September 1 through December 1.

2. Return the completed forms to the office of the associate dean for academic and alumni affairs by December 15.

3. Applicants must take the Veterinary Medical Aptitude Test. Information concerning this test, and a list of dates and places where the test is given is sent with other admission forms.

All applications are considered by the admissions and scholarship committee for the College of Veterinary Medicine to determine if students meet the required standards. After initial screening, the remaining applicants are evaluated on the basis of their application, academic records, veterinary aptitude test scores, personal interviews (when required), experience and personal references. The committee selects students with as many of the following characteristics as possible: high scholastic ability, reasonable judgment and common sense, moderately wide range of interests, evidence of leadership ability, pleasing and alert personality, willingness to work for a worthwhile objective, and understanding of the scope of veterinary medicine.



# Aids, Scholarships and Awards

---

*Each year at the college honors banquet a total of nearly \$90,000 in scholarships and awards are received by veterinary students.*

---

**M**issouri has numerous scholarship and loan funds, describes in detail in the *Scholarships, Aids and Awards Profile*. Additional information on these funds is available from the director of student aids, 11 Jesse Hall, or the associate dean for academic and alumni affairs, College of Veterinary Medicine.

## Scholarships

**Curators Scholars in Veterinary Medicine** - These awards for first-year veterinary students on the basis of scholarship, and cover the incidental and special fees for Missouri residents during the first year. The recipients are chosen by the Admissions and Scholarship Committee.

**Pfizer Scholarship** - A cash award for scholarship and leadership is given to a third-year veterinary student for fourth year expenses. This scholarship is by application, and the recipient is selected by the Scholarship and Awards Committee.

**Frank Wells Scholarship in Veterinary Medicine** - Scholarships for fourth-year veterinary students. Applications can be obtained in the office of the associate dean for academic and alumni affairs. The Scholarships and Awards Committee selects recipients.

**The Hazel C. and Edgar F. Ebert Memorial Scholarship in Veterinary Medicine** - This award is presented to four veterinary students, one female and one male beginning their third year and to one female and one male beginning their fourth year. Each student must show financial need and be in good standing. The recipients are selected by the Scholarship and Awards Committee. The selection is then approved by the trustee of the estate.

**J.B. Arthur Foundation Scholarships in Veterinary Medicine** - All students in good standing and classified as second, third or fourth-year veterinary students in the professional curriculum in veterinary medicine at the University of Missouri-Columbia are eligible. Applications can be obtained in the office of the associate dean for academic and alumni affairs.

The Committee on Scholarships and Awards selects recipients.

**The Frank E. and Ena Hickerson Rhoads Scholarship** - This award of cash and certificate is presented to veterinary students beginning the third and fourth years. To be eligible for application, students must be in the upper 10 percent of the class and show potential expected in the profession.

**Orthopedic Foundation Scholarships in Veterinary Medicine** - The awards are presented to second year students in the upper 15 percent of the class needing financial support or to a veterinary graduate student (DVM) needing support in orthopedic research.

**J. E. Salsbury Scholarships in Veterinary Medicine** - These scholarships are available to students entering the fourth year class who have a professional curriculum G.P.A. of at least a 3.0 and are in financial need.

**Gilbreath-McLorn Scholarships in Veterinary Medicine** - All students in good standing and classified as second, third, or fourth year students shall be eligible for consideration for the scholarships. Incoming first year non-resident students if they are academically and non-academically eligible may be granted a scholarship. Incoming disadvantaged students may be considered for a scholarship for either financial need or scholastic ability.

## Loans

Students enrolling in the College of Veterinary Medicine should be financially independent during the first year. They should establish themselves as professional students before applying for money from the funds available to veterinary medical students.

**Health Professions Student Loan Program**. This loan was made available through the enactment of the Veterinary Medicine Education Act of 1966. To qualify for the program, an applicant must be (1) a citizen of the United States, (2) a full-time student, (3) engaged in pursuing a course of study leading to a DVM degree and (4) in good standing and capable of maintaining such standing.

**National Direct Student Loans**. Title II of the National Defense Education Act of

1958 (Public Law 85-864) as amended provides funds for student loans on very favorable terms. The loan fund is composed of money provided 90 percent by the University.

**Federally Insured Loan Program.** A student may arrange a loan of reasonable size with a hometown bank or other eligible lender, and the note is endorsed by the federal government. Thus, the student need not provide collateral and the lender is assured of no losses on student loans.

**The Missouri Chapter of the AVMA Memorial Loan Fund.** Established in 1954, this fund was formerly called the Boyer-Matthews Memorial Fund in memory of two students who died during their final year in school. Additional contributions to the fund have been made in the memory of Marilyn Rhoades, deceased wife of a student in the college, and by the family and friends of David L. Rosner, deceased son of Dr. and Mrs. L. A. Rosner. Dr. Rosner served as Missouri State Veterinarian for 12 years.

**B.B. Roseboom Memorial Student Loan Fund.** This fund was established in 1957 by the Student Chapter of the AVMA.

Stanley N. Smith Memorial Fund. Family, friends, and associates of Smith established this fund to commemorate his 58 years of service to the profession, 10 of which were on the faculty of the college.

**The College of Veterinary Medical Alumni Association Loan Fund.** This fund is maintained by the alumni of the college for third- and fourth-year students.

**Student Loan Fund of the AVMA Auxiliary.** Fourth year professional students are given preference, but third-year and graduate students may also be considered. Maximum amount loaned to any one student is \$2,400.

**Women's Auxiliary to the Missouri Veterinary Medical Association Loan Fund.** Loans made from this fund are usually short term—six months to a year.

**Central Missouri Veterinary Medical Association Loan Fund.** This is a short-term, emergency fund available to third- and fourth-year veterinary medical students.

**German Shepherd Dog Club of St. Louis Veterinary Student Loan Fund.** A loan fund was established by the club for

the benefit of students in the college.

**Tri-State Kennel Club Veterinarian Student Aid Fund.** This fund provides loans to worthy students in the college who are majoring in small animal medicine and are in need of financial assistance.

## Awards

**Anatomy Award** - This award of cash and a certificate sponsored by the Kansas City Veterinary Medical Association recognizes the first-year student who has demonstrated outstanding proficiency, interest and ability in anatomy. The recipient is selected by the Department of Veterinary Biomedical Sciences.

**Physiology Award** - This award of cash and a certificate, sponsored by the Greater St. Louis Veterinary Medical Association, recognizes an outstanding first-year student for performance in physiology. The recipient is selected by the Department of Veterinary Biomedical Sciences.

**Microbiology Award** - This award of cash and a certificate sponsored by Boehringer Ingelheim, is presented to a second-year student for scholarship, proficiency and interest in veterinary microbiology. The recipient is selected by the Department of Veterinary Microbiology.

**Cecil Elder Award** - This award of cash and a certificate, endowed by Dr. Elder, is presented to a second-year student who has demonstrated exceptional interest and academic capability in veterinary pathology. The recipient is selected by the Department of Veterinary Pathology.

**Dr. Edgar Ebert Memorial Awards** - The Ebert Fund, established by Mrs. Edgar Ebert with contributions from faculty, alumni and friends, provides awards of cash and a certificate for two fourth-year students who have demonstrated outstanding ability; one in large animal medicine and one in small animal medicine. The recipients are selected by the Department of Veterinary Medicine and Surgery.

**English Practitioner Award** - Dr. and Mrs. James E. English endowed this award of cash and a plaque for the fourth-year student most likely to succeed in general practice, because of overall proficiency in large and small animal veterinary medicine and surgery. The recipient is selected

on ballot by classmates.

**Columbia Kennel Club Award** - An award of cash and a certificate is presented to a fourth-year student for outstanding ability and scholastic proficiency in small animal surgery. The recipient is selected by the Department of Veterinary Medicine and Surgery.

**American Animal Hospital Award** - This award of a plaque and a certificate is presented to a fourth-year student for proficiency in small animal medicine and surgery, as judged by the small animal medicine and surgery faculty.

**Harlen E. Jensen Ophthalmology Award** - This award of cash and a certificate is presented to a fourth-year student who, during the clinical years, had demonstrated outstanding proficiency and interest in ophthalmology.

**The Elsie Roth Equine Proficiency Award** - This award of cash and a certificate is presented to either a third- or fourth-year student who, in the judgment of the faculty, has demonstrated superior competency as a student and exhibits outstanding future potential in the area of equine medicine and surgery. The recipients are selected by the Department of Veterinary Medicine and Surgery.

**Hill's Senior Award** - Hill's Division Riviana Foods, Inc. will award to a senior student a cash award for the best clinical documentation of a clinical small animal case where dietary management was employed, as all or a substantial part of the treatment, and demonstrated to be beneficial.

**Loren D. Kintner Veterinary Diagnostic Laboratory Award** - This award of cash and a certificate is presented to a fourth-year student for reliability, proficiency, interest, contributions and performance in the Veterinary Diagnostic Laboratory. The recipient of the award is recommended by the Scholarships and Awards Committee.

**American Association of Feline Practitioners Award** - This award of a plaque and two years of free membership in the association is presented to a fourth-year student who, during the clinical years, had demonstrated a special interest and accomplishment in feline medicine and surgery. The recipient is selected by the small animal medicine and surgery faculty.





*Veterinarians, such as bovine practitioners, develop expertise in health problems of a particular species. Bovine practice is a branch of large animal practice.*

**The Adrian J. Durant Memorial Award** - This award of cash and certificate is given in recognition of outstanding ability and proficiency in the knowledge of poultry diseases.

**The Lucy B. Davis Scholarship in Small Animal Medicine and Surgery** - Two awards of cash and certificates, one for small animal medicine and one for small animal surgery, are presented to third- or fourth-year students for demonstrating interest, scholarship, proficiency and outstanding client relationship.

**The Dr. and Mrs. Clair M. Hibbs Veterinary Diagnostic Laboratory Award** - This award of cash and certificate is in recognition of need, interest and ability in veterinary diagnostic laboratory medicine.

**Lloyd Selby Award** - This award, established in honor of the late Dr. Lloyd Selby, is given to an individual who has outstanding interest and proficiency in public health and epidemiology.

**Swine Proficiency Award** - This award is presented by Purina Mills to recognize the outstanding senior student for proficiency in swine medicine.

**Gary Weddle Wildlife/Exotic Animal Award** - This award endowed by Dr. Weddle, an alumnus of the college, is presented to a third- or fourth-year student who has demonstrated outstanding proficiency and interest in wildlife or exotic medicine.

**Proficiency in Business Management Award** - This award, established by Ben Riley, recognizes a third year student for proficiency and potential in business management and client relations.

**Hill's Student Awards** - A cash award is presented to a first-, second-, and third-year student for financial need. A cash award is presented to a fourth-year student for financial need and interest in small animal clinical nutrition.

**Upjohn Awards** - The Upjohn Compa-

ny recognizes two senior students for their proficiency in small and large animal medicine and surgery.

**Phi Zeta Award** - This award of cash and a certificate is presented to a second-year student who has attained the highest scholastic record for the first three semesters of professional veterinary medical curriculum.

**The Gamma Sigma Delta Award** - This society annually honors a fourth-year student who has demonstrated high academic and extracurricular achievement. The student's name is inscribed on a permanent plaque which hangs in the Veterinary Medicine Library.

**Merck Awards** - Merck and Company presents Merck Veterinary Manuals to two students, one from the third-year class and one from the fourth-year class who have attained high scholastic averages.

**Dr. and Mrs. Leslie C. Murphy Scholarship Award** - This award is presented to a fourth-year student who has attained the highest scholastic average for the total professional curriculum.

**Arkansas Veterinary Medical Association Award** - This award is presented to a fourth-year student who is a resident of the state of Arkansas, has attained at least a G.P.A. of 3.0 and has been active in extracurricular activities in the College of Veterinary Medicine. The recipient is selected by the Arkansas Veterinary Medical Association.

**College of Veterinary Medicine Memorial Scholarship** - This award is presented to the student who has attained the highest scholastic average upon completion of the first full year of the professional curriculum.

**West Central VMA Leadership Award** - An award of cash and a plaque is presented to a first-year student who is active in the promotion of organized veterinary medicine. The recipient is selected by classmates.

**Auxiliary to the AVMA Award** - An award of cash and a certificate is presented to a fourth-year student who has contributed the most to advance the prestige of the College of Veterinary Medicine on the Columbia Campus. The recipient is selected by the fourth-year class.

**A.H. Groth Student Research Award** -

This award is presented to a third- or fourth-year student in the professional curriculum who has demonstrated superior competency as a student and exhibits outstanding future potential in the area of veterinary research. The recipient is selected by the Scholarships and Awards Committee.

**Intermountain Veterinary Medical Association Awards** -This award consists of a round-trip airline ticket from Kansas City, Mo., to Las Vegas, Nev., together with complementary registration, for students to attend the Annual Western Veterinary Conference, held for four days in February of each year. The recipient is selected by the student chapter on a competitive basis.

## Student Employment

Many students work part time while attending school. Because of the higher number of classroom and laboratory hours required of veterinary medical students, it is recommended outside work be kept at a minimum, especially during the first year. Some students are employed on research projects, in laboratories and in clinics. Other students find employment for board, or room and board. Financial Aids, 11 Jesse Hall, provides information and assistance to students seeking part-time work.

## Students Activities

### Code of Ethics (Honor Code)

Honesty is an essential part of professionalism. The Code of Ethics at the Mizzou College of Veterinary Medicine places the responsibility for honor and honesty on the student. Examinations are not closely proctored by faculty members. The expensive drugs and equipment used in the clinics and laboratories are made available for most effective instruction, with the understanding that the candidate for the DVM degree will use these materials only for their intended purposes without being policed by faculty members.

The code applies to all students in the College of Veterinary Medicine and helps to promote ethical standards of personal and professional conduct among the

students. Reported violations of this code are carefully investigated by the Student Honor Committee and every precaution is taken to arrive at a just decision. A student found guilty of violating the code may be dismissed from the college. Anyone unwilling to accept the responsibility for maintaining the code should not apply for admission to the College of Veterinary Medicine.

### Student Chapter of the American Veterinary Medical Association

All veterinary medical students are eligible for membership in the Missouri Student Chapter of AVMA. A guest speaker usually is featured at monthly meetings. Other activities include a picnic given by the second-year class to welcome the incoming class, a smoker at which new students and faculty members are welcomed by the other three classes, an all-school function in the fall and an annual Junior-Senior Banquet in the spring.

The student chapter is a divisional arm of Missouri Student Government and functions as the Veterinary Student Council. The chapter sends delegates to the national convention, offers support for members to attend national educational symposiums and provides numerous benefits for new DVMs upon graduation.

Members of the student chapter of the AVMA elect a president, vice-president, secretary and treasurer who, along with several officers of each class, make up the executive council. Committees for the student chapter of the AVMA are appointed by the president.

### Student Honor Committee

As set forth in the preamble to the College of Veterinary Medicine Honor Code, the students of the college have established a code deserving of the high trust and irreproachable conduct demanded by their chosen profession. The Honor Committee is composed of two regular and two alternate members from each class. With approval of the student chapter of the AVMA, the president appoints the members. The committee is chaired by a fourth-year member.

### Class Officers

Each class elects its own officers annually—a president, vice-president, secretary-treasurer and a class representative. The president of each class and the AVMA

student chapter president serve on the student advisory council which meets regularly with the dean and associate dean for academic and alumni affairs to discuss college concerns.

### Student Auxiliary

Spouses of students who are members of the student chapter of the AVMA are eligible to join this auxiliary organization. Monthly meetings are held with a variety of programs. Spouses of faculty members serve as sponsors of the group.

### Pre-Veterinary Medicine Club

Students on the Columbia campus engaged in pre-veterinary medical study qualify to join this club. A faculty member of the College of Veterinary Medicine acts as adviser. Regular meetings are held, with speakers, discussing various aspects of the profession. One objective of the club is to bring about a closer fellowship among students who have a common interest in seeking admission to the College of Veterinary Medicine.

### Other Campus Activities

All Mizzou students are members of the Missouri Students Association and have a voice in campus affairs. They are offered opportunities to fulfill their responsibilities to the student community through participation in a system of student self-government, with emphasis at the divisional level. There are social fraternities and sororities with national affiliation on campus.

### Honor Societies

Phi Zeta - This is a scholastic honorary society to which third- and fourth-year veterinary medical students may be elected.

Gamma Sigma Delta - This national organization recognizes students of the Colleges of Agriculture, Veterinary Medicine, Home Economics, School of Forestry, Fisheries and Wildlife who have shown exceptional ability during undergraduate or graduate work and also recognizes alumni and faculty members who have rendered signal service to the cause of agricultural development.

Senior Honor Societies - Mortar Board, Mystical Seven, Omicron Delta Kappa, LSV, QEBH and Pi Omicron Sigma are senior organizations that recognize leadership and service in addition to scholastic achievement.



# Professional Program

**T**he first two years of the professional curriculum are designed to provide the student with a solid foundation in basic medical science. Courses of study include gross and microscopic anatomy, biochemistry, physiology, microbiology, pathology, pharmacology, parasitology, toxicology, public health, clinical pathology, radiology, clinical medicine and surgery, and anesthesiology.

These courses are taught in the laboratory and lecture format familiar to science students. In some areas the audiotutorial teaching approach is being used.

After successful completion of the second year of the professional program, the student enters a segmented curriculum for the years of clinical training. In this concept of veterinary training the final two years are divided into 11 two-month blocks. Students must complete successfully seven required blocks for graduation. Each two-month block is a complete instructional unit. Students are given the opportunity to concentrate their studies in an area of special interest while gaining exposure to all aspects of veterinary medicine. The required blocks are food animal medicine and surgery, theriogenology, equine medicine and surgery, small animal medicine, small animal surgery, medical services, and diagnostic pathology/special species medicine.

Students may use free blocks to coordinate with their professional objectives. For example, a student may work with a practicing veterinarian, complete a continuation block or take vacation time.

## Professional Curriculum

VBMS - Veterinary Biomedical Sciences  
VMS - Veterinary Medicine and Surgery  
VM - Veterinary Microbiology  
VP - Veterinary Pathology  
V - following course number signifies courses for veterinary students only

### First Year (Instructional Periods 1-4)

**Period 1**  
VBMS211V Veterinary Anatomy (2.5)  
VBMS213V Veterinary Microscopic Anatomy (1.5)

VBMS220V Veterinary Physiology (2.5)  
VBMS224V Veterinary Physiological Chemistry (2.5)

**Period 2**  
VBMS211V Veterinary Anatomy (2.5)  
VBMS213V Veterinary Microscopic Anatomy (1.5)  
VBMS220V Veterinary Physiology (2.5)  
VBMS224V Veterinary Physiological Chemistry (2.5)

**Period 3**  
VBMS 212V Veterinary Anatomy (4)  
VBMS 214V Veterinary Microscopic Anatomy (2)  
VBMS 221V Veterinary Physiology (3)  
**Period 4**  
VBMS 212V Veterinary Anatomy (4)  
VBMS 221V Veterinary Physiology (3)  
VM 241V Veterinary Immunology (2)

### Second Year (Instructional Periods 5-9)

**Period 5**  
VP 231V General Pathology I (3)  
VM 240V Professional and Public Relations (1)  
VM 242AV Veterinary Bacteriology I (3)  
VM 244V Introduction to Epidemiology and Biostatistics (2)

**Period 6**  
VP 232AV Systemic & Special Pathology I (3)  
VM 242BV Veterinary Bacteriology II (3)  
VM 243V Veterinary Virology (1.5)  
VM 245AV Veterinary Parasitology I (3)

**Period 7**  
VBMS 226V Veterinary Pharmacology (3)  
VP 232BV Veterinary Systemic & Special Pathology II (3)  
VM 243V Veterinary Virology (1.5)  
VM 245BV Veterinary Parasitology II (3)

**Period 8**  
VBMS 229V Veterinary Pharmacology (2)  
VP 233V Veterinary Clinical Pathology (3)  
VM 248V Veterinary Meat Hygiene, Zoonosis & Preventative Medicine (2)  
VMS 276V Laboratory Animal Medicine (1.5)

VMS 277V Veterinary Anesthesiology (1)  
**Period 9**  
VBMS 228V Veterinary Toxicology (3)  
VMS 270V Fundamentals of Medicine (4)  
VMS 273V Radiology (2)  
VMS 278V Equine Medicine and Surgery (1)

### Third and Fourth Years

#### Period 10

VMS 272V Small Animal Surgery (2.5)  
VMS 274V Small Animal Medicine (2.5)  
VMS 275V Food Animal Medicine and Surgery (3.5)  
VMS 278V Equine Medicine and Surgery (1.0)

#### Required Clinical Blocks

VMS 251V Food Animal Medicine and Surgery I (10)  
VMS 253V Small Animal Medicine I (10)  
VMS 255V Equine Medicine and Surgery I (10)  
VMS 257V Small Animal Surgery I (1)  
VMS 259V Theriogenology I (10)  
VMS 261V Medical Services I (10)  
VP 263V Diagnostic Pathology and Special Species Medicine I (10)

#### Continuation Blocks (required special consent)

VMS 252V Food Animal Medicine and Surgery II\* (1-10)  
VMS 254V Small Animal Medicine II\* (1-10)  
VMS 256V Equine Medicine and Surgery II\* (1-10)  
VMS 258V Small Animal Surgery II\* (1-10)  
VMS 260V Theriogenology II\* (1-10)  
VMS 262V Medical Services II\* (1-10)  
VP 264V Diagnostic Pathology and Special Species Medicine II\* (1-10)  
VMS 268V Herd Health Mgt & Nutrition II\*§  
VMS 266V Lab. Animal Med. and Mgt. II\* (1-10)  
VM 270V Epidemiology and Community Health\* (1-10)

\*Offered by departmental consent only, with minimal enrollment to be determined by instructional faculty and department chairman.

§To follow Food Animal Medicine and Surgery, and Theriogenology blocks.

## Requirements For Graduation

A student who receives a grade of F in any required course of the professional curriculum will be dismissed.

Any student whose cumulative G.P.A. in the required professional curriculum is less than 2.0 will be placed on academic

probation. Probation must be removed by the end of the next two successive grading periods. Any student whose term G.P.A. is less than 2.0 will be placed on academic probation. Probation must be removed by the end of the next successive grading period. Any student failing to remove probation will be dismissed from the College of Veterinary Medicine. Students on academic probation will not be permitted to graduate.

In the first two years, courses must be completed in sequence because they are offered only once a year.

In the final two years of the professional program, the student must successfully complete the seven instructional blocks in the curriculum for the fulfillment of graduation requirements.

It is the prerogative of the veterinary faculty to determine the curriculum and to require such lectures, demonstrations, exercises and experiences using live animals, cadavers or clinical patients as are important, required or necessary. To receive the DVM degree, students must pass all required courses. In addition to passing examinations, attendance and participation in all lectures, laboratory and clinical exercises is necessary.

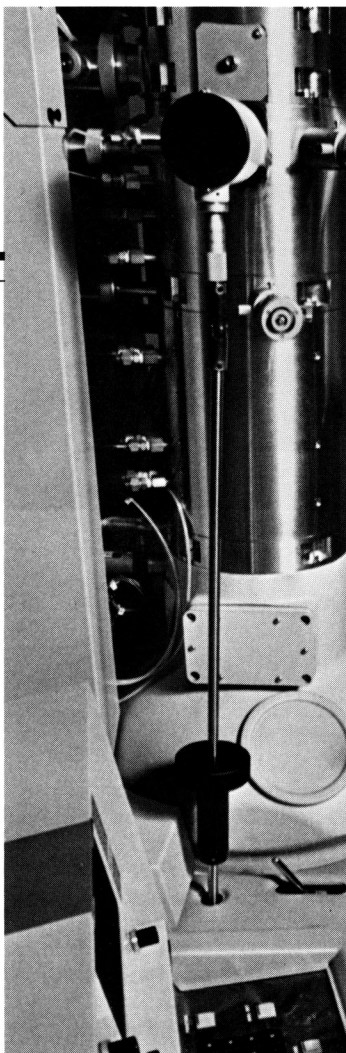
The DVM degree, doctor of veterinary medicine, is awarded after successful completion of the professional program.

## Advanced Study

### Graduate Degree Programs

Graduate education and research are integral parts of veterinary medicine. All departments of the college offer advanced training leading to the master of science degree. The departments of Veterinary Biomedical Sciences, Veterinary Microbiology and Veterinary Pathology also offer graduate programs leading to the doctor of philosophy degree. PhD degree programs are intercollegiate programs in disciplinary areas of study.

Research programs in the College of Veterinary Medicine provide a clearer understanding of disease processes and methods of prevention and treatment of diseases of animals and man. Such efforts contribute to the advancement of science and significantly enhance the quality of professional education.



*The College of Veterinary Medicine is the state's only complete animal health facility, providing extension and continuing education services, diagnostic and consultation services statewide.*

The versatility of the veterinary profession permits its members to work in a wide variety of research areas. Some areas investigated include: infectious and non-infectious diseases of livestock, poultry and companion animals; zoonoses (diseases transferred from animal to man); reproductive biology; comparative anatomy, physiology, pharmacology and pathology; neoplasia; laboratory animal medicine, veterinary public health; environmental health; radiation biology; clinical research and drug evaluation; and nutritional studies. Research projects are supported by federal and state funds, foundation awards and grants or contracts from industries, livestock producer association and other groups.

### Residency Programs

Residencies are available in medicine, radiology, surgery, anesthesiology, toxicology, pathology, preventive medicine, laboratory animal medicine and micro-

biology. The primary purpose of residency programs is to qualify veterinarians for board certification.

### Graduate Study for Veterinary Medical Students

Veterinary students often find an opportunity to participate actively in research programs. In some cases, it is possible to augment training for the DVM degree with dual enrollment for the master of science degree. The general requirements for advanced degrees are published in the *Graduate School Catalog*.

The specific requirements are established by the various departments and areas, and are somewhat variable for individual students. Those contemplating this program should recognize that it usually requires a one-year interruption of the professional curriculum. They are urged to consult with appropriate faculty about prerequisites and a special degree program.



# Departments

## Veterinary Biomedical Sciences

### Professional Program

**D**uring the first year, students in veterinary medicine study the gross and microscopic anatomy of food-producing animals, companion animals and selected laboratory animals. They currently study normal functions of cells, tissues, organs and body systems in physiology and physiologic chemistry.

These studies provide the basis for understanding disease processes and the recognition and treatment of animal diseases.

First-year veterinary students study anatomy in laboratory exercises in gross anatomic dissection, microscopic examination of cells and tissues, and study of embryologic and neuroanatomic specimens. Laboratories in physiology provide opportunities for the student to observe and measure activity of animals organs and tissues.

During the second year, students study pharmacology, which includes actions of drugs and factors influencing the responses of animals to drugs. In the study of toxicology, the student studies disease conditions resulting from poisonous materials including plants, agricultural and industrial chemicals, feed additives and drugs.

During the third and fourth years of the professional curriculum, the departmental faculty participate in instruction concerning nutrient requirements of domestic animals, breeding and genetics. Applied anatomy is part of the clinical training in physical examination, clinical diagnosis and surgery.

### Graduate Program

The department offers graduate study leading to the master of science degree with emphasis in five disciplines: veterinary anatomy, veterinary biochemistry, veterinary toxicology, veterinary pharmacology and veterinary physiology. Graduate study leading to the doctor of philosophy degree can be accomplished in the department under the auspices of various area programs. The program of study

leading to a graduate degree is arranged individually, and prospective students are encouraged to correspond directly with the director of Graduate Studies about available opportunities. The *Mizzou Graduate School Catalog* contains information regarding graduate offering and specific program requirements.

The courses of study in veterinary anatomy include gross, microscopic and ultrastructural levels; comparative neuroanatomy and neurology; embryology and developmental anatomy; and anatomy of laboratory animals. Work for the PhD degree can be accomplished in cooperation with the Department of Anatomy, School of Medicine.

Study and research in biochemistry includes such areas as interactions between nutrition and disease, effects of stress on metabolism and other problems related to nutritional biochemistry. Work for the PhD degree in biochemistry can be accomplished in the department under the authority of the area program.

Graduate study in veterinary pharmacology provides a basis for the understanding of the fundamental principles of pharmacology. Although neuro- and cardiovascular pharmacology are emphasized, a student may work in other areas of pharmacology. The PhD degree in pharmacology is granted in cooperation with the Department of Pharmacology, School of Medicine.

Graduate studies in veterinary physiology survey knowledge of normal function in domestic animals and become familiar with research in the field. Work for the PhD degree in veterinary physiology can be accomplished in the department under the auspices of the area program in physiology.

Since the department does not offer the doctor of philosophy degree, individuals interested in doctoral research on clinical problems should consult and work with faculty members in the department who hold doctoral faculty appointments in the Graduate School area program in physiology.

## Veterinary Microbiology

### Professional Program

Courses offered in the department pro-

vide instruction on special properties of pathogenic microorganisms, the host response to invading microorganisms and techniques for isolation and identification of microorganisms. Special emphasis is placed on the transmission, prevention and control of infectious and parasitic diseases and on veterinary community health, epidemiology and immunology. Lectures, laboratory periods, special demonstrations, special projects and auto-tutorial programs are offered. Special problems are offered by VM faculty in the Diagnostic Laboratory.

### Graduate Program

Advanced study leading to the master of science in veterinary microbiology and the doctor of philosophy in the area program in microbiology is offered. The MS and PhD programs are designed to prepare students for training, research and diagnostic services in veterinary microbiology, infectious diseases and the biomedical area. Additional information is provided in the *Mizzou Graduate School Catalog* and brochure provided through the departmental office.

## Veterinary Pathology

### Professional Program

The primary function of the veterinary pathology department is to teach professional courses in which instruction is given on the morphologic and biochemical alterations which form the basis for changes that occur in tissues and fluids of diseased animals. The teaching is conducted in formal and applied courses. The extensive and varied case loads in the clinical pathology and Veterinary Medical Diagnostic Laboratory programs are used as teaching resources during the third and fourth years of the professional curriculum.

### Graduate Program

The department offers a graduate program leading to the master of science degree. For admission, the candidate should have completed the DVM or an acceptable baccalaureate degree. Parts I, II and III of the GRE must be taken before entering Graduate School or during the first semester of residence. Students should rank in the upper third of their class. Further details for requirements of



*More than 1,900 veterinarians have graduated from the college since 1946.*

the degree are listed in *Mizzou's Graduate School Catalog* available through the Graduate School.

The PhD area program in pathology is staffed jointly and presented by the departments of Pathology, School of Medicine; Veterinary Pathology, College of Veterinary Medicine; and Plant Pathology, College of Agriculture. PhD candidates may choose their research areas to take advantage of the interests and specialties of advisers in the departments. Research is conducted in various areas including morphologic alterations in response to disease, ultrastructural and histochemical changes, clinical chemistry, immunofluorescence and molecular pathology, all of which are related to host-agent interrelationships in the pathogenesis of disease. Included in these studies are food animals, companion animals, laboratory animals and some exotic wild animals.

## **Veterinary Medicine and Surgery**

### **Professional Program**

During the third and fourth clinical years of the professional curriculum, the students learn to combine the art and science of clinical veterinary medicine and surgery. The practical application of the basic principles of medicine and surgery to the diagnosis, prevention and treatment of disease in all species of animals

presents a challenge to the mental and physical resources of the student.

Proficiency in clinical medicine is gained by working closely with experienced clinicians in the small animal, food animal, equine and ambulatory areas of the Veterinary Medical Teaching Hospital. Through the patient-care method of study, professional students are given a considerable amount of responsibility for the total health requirements of animals assigned to their care. Discussion periods, formal lectures, rounds and laboratory training guide the progress of the clinical student in systematic medicine and surgery. Broad exposure to clinical practice is gained through the curriculum design.

### **Graduate Program**

Programs of excellence exist in the specialty areas of comparative cardiology, embryo transfer, neurology, ophthalmology, radiology, small and large animal medicine, small and large animal surgery, and theriogenology. Completion of the DVM degree (or its approved equivalent) is a prerequisite for admission to the master of science degree program. Graduate Records Examination (GRE) and Mizzou Graduate School acceptance is required of all applicants. A minimum of 30 hours selected from courses receiving graduate credit must be completed for the master's degree. An acceptable thesis based upon original research is generally required for all degree candidates. All students must be found acceptable by the

adviser, the director of Graduate Studies and the department chairman.

## **Veterinary Medical Diagnostic Laboratory**

The Veterinary Medical Diagnostic Laboratory in the College of Veterinary Medicine is interdisciplinary, with responsibility for diagnostic service, teaching, continuing education, extension and research. It serves clinicians of the Veterinary Teaching Hospital, veterinary practitioners throughout Missouri, livestock and poultry interests, companion animal interests, wildlife conservationists, scientists utilizing animals in their research throughout the University and state and federal animal disease regulatory officials. It holds full accreditation from the American Association of Veterinary Laboratory Diagnosticians as a full-service veterinary medical diagnostic laboratory. The laboratory was moved into a new building in the spring of 1977 placing its operation and personnel in a single location.

The diagnostic laboratory provides an opportunity for veterinary students to receive instruction in diagnostic laboratory medicine. Two blocks of instruction titled diagnostic pathology and special species medicine I and II are offered.

Students conduct necropsy examinations under supervision of faculty and learn interpretation of laboratory tests,



e.g., bacteriologic culturing, serological tests, viral isolation, parasitological, histopathological and toxicologic examinations. One duty station of the diagnostic pathology block is in the clinical pathology laboratories, located in the Veterinary Medicine Building. Graduate students in pathology and related disciplines receive part of their graduate experience in the diagnostic laboratory.

The laboratory is a valuable resource for graduate training through its daily access to disease conditions in more than 60 different animal species. Approximately 20,000 accessions are received by the laboratory annually, including 12,000-13,000 necropsies and a wide variety of disease specimens for examination by virologists, bacteriologists, serologists, toxicologists and chemists.

Laboratory faculty members have appointments in the academic department of their specialty and have advanced training in the disciplines of pathology, bacteriology, mycology, virology, parasitology, serology, and toxicology. The faculty of the diagnostic laboratory also consults with other faculty members of the college and Mizzou scientists on a variety of disease problems encountered.

### Laboratory Animal Medicine Area Program

A formal residency/graduate program in laboratory animal medicine leads to a master of science degree. Training includes biology, husbandry, management, surgery, disease and pathology of laboratory animals. The study of animal models for human-health-related research and independent research are part of the training program. Graduates assume positions in universities, research centers and other institutions conducting biomedical research. The program is designed to prepare trainees for certification by the American College of Laboratory Animal Medicine (ACLAM) and should provide the basis for a career in teaching, research and professional management of laboratory animal facilities.

Applicants for the laboratory animal medicine graduate program must have a doctor of veterinary medicine degree or

its equivalent and meet the requirements specified by Mizzou's Graduate School. Qualified applicants for the program are selected by the Executive Committee of the area faculty of laboratory animal medicine.

#### Program

**Master of Science Degree.** The program follows the guidelines established by the Institute of Laboratory Animal Resources and the American College of Laboratory Animal Medicine. Completion of the program usually requires three years, varying according to the ability and qualifications of the individual student. The first two years include formal courses, assigned problems, residency training and research. The first two summer sessions and approximately 20 hours each week during the initial two years are devoted to residency training dealing with day-to-day activities in the Department of Laboratory Animal Medicine at the University Health Sciences Center, the Sinclair Comparative Medicine Research Farm and the Research Animal Diagnostic and Investigative Laboratory. The third year is devoted primarily to research, preparing a thesis, and continued residency training. Students interested in obtaining a PhD in a basic science may bypass the MS, if otherwise satisfying the requirements of the program. Trainees are assigned an adviser and are encouraged to select a research area as early in the program as possible.

**Courses and Research.** Graduate courses may be selected from those offered by the College of Veterinary Medicine, the School of Medicine and other schools and colleges on the Columbia campus.

**Faculty.** The faculty members participating in this program are actively involved in research on animal models of human disease and diseases of laboratory animals.

Diplomates of the American College of Laboratory Animal Medicine provide leadership in the area of laboratory animal medicine. All hold academic appointments in the College of Veterinary Medicine and some hold joint appointments in the School of Medicine. Other faculty and technical staff of the College of Veterinary Medicine, the School of Medicine, the Dalton Research Center and the Sin-

clair Comparative Medicine Research Farm assist with the program.

### Continuing Education

The University of Missouri extension division is organized to serve the people and institutions of the state. As part of this division, the extension activities in the College of Veterinary Medicine are centered on the activities of the director of continuing education and other full- and part-time staff veterinarians.

The two principal objectives of veterinary medical continuing education are continuing professional training for veterinarians and cooperative extension activities. The first serves to increase the professional competence of veterinarians and thereby improve the quality of veterinary medicine offered to clients in the prevention and control of diseases of livestock and pets. The latter acquaints the owners of food producing or companion animals with better utilization of veterinary medical services and with the advantages of preventive medicine. Rural and urban extension veterinary medicine are an integral part of college program. Considerable community health consultation is carried out regarding animal bites and the risks and occurrence of zoonotic diseases.

Continuing professional education is facilitated by information mailed regularly to more than 1,000 veterinarians. Conferences, seminars and short courses are also scheduled for practitioners to participate in intensive learning opportunities. A mid-career program is conducted to give indepth individualized training in special areas to practicing veterinarians or those veterinarians changing their careers. This is a two-month program, with goals mutually agreeable to the participant and instructors involved. Information on disease problems is presented to animal owners and allied interest groups in several ways. Group meetings on general subjects are requested by, or scheduled through, county extension directors. Persons in attendance are encouraged to participate in the presentations by asking questions and relating their experiences and problems. Local practicing veterinarians are also invited to attend and participate in these programs.

# Statement of Courses

## *The Veterinary Medicine program conducts interdisciplinary research and study with other departments.*

### **Veterinary Biomedical Sciences**

- 200 Problems (cr. arr.)
- 211V **Veterinary Anatomy (5)**. Instructional periods 1 and 2. Prerequisite: enrollment in the College of Veterinary Medicine.
- 212V **Veterinary Anatomy (8)**. Instructional periods 3 and 4. Continuation of 211V.
- 213V **Veterinary Microscopic Anatomy (3)**. Instructional periods 1 and 2. Prerequisite: enrollment in the College of Veterinary Medicine.
- 214V **Veterinary Microscopic Anatomy (2)**. Instructional period 3. Prerequisite same as for 211V.
- 220V **Veterinary Physiology (5)**. Instructional periods 1 and 2. Prerequisite: enrollment in the College of Veterinary Medicine.
- 221V **Veterinary Physiology (6)**. Continuation of 220V. Instructional periods 3 and 4. Prerequisite: same as for 220V.
- 222 **Fundamentals of Animal Physiology (3)**. For students not enrolled in the professional veterinary medicine curriculum. w.
- 224V **Veterinary Physiological Chemistry (5)**. Instructional periods 1 and 2. Prerequisite: enrollment in College of Veterinary Medicine.
- 226V **Veterinary Pharmacology (3)**. Instructional period 7. Prerequisite: enrollment in the College of Veterinary Medicine.
- 228V **Veterinary Toxicology (3)**. Instructional period 9. Prerequisite same as for 226V.
- 229V **Veterinary Pharmacology (3)**. Instructional period 8. Prerequisite: same as 226V.
- 300 Problems (cr. arr.)
- 303 **Cytology, Histology and Microscopic Anatomy of Domestic Animals (5)**. Prerequisite: graduate standing, background in biological sciences, instructor's consent.
- 305 **Histological and Anatomical Techniques (cr. arr.)** Prerequisite: background in biological science and departmental consent.
- 307 **Embryology and Development of Domestic Animals (2)**. Prerequisite background in biological science and departmental consent.
- 311 **Canine Dissection (6)**. Prerequisites: background in biological science and departmental consent. f.
- 312 **Anatomy of Common Domestic Animals (5)**. Prerequisite: background in biological science and department consent. w.
- 326 **Veterinary Pharmacology (3)**.
- 347 **Principles of Physiologic Adaptation (3)**. Prerequisite: vertebrate physiology or physiological zoology, 4 credits: chemistry, 5 credits: or instructor's consent.
- 328 **Principles of Toxicology (3)**. Prerequisite: biochemistry or instructor's consent. f.
- 400 Problems (cr. arr.)
- 409 **Advanced Microscopic Anatomy (cr. arr.)** Prerequisite: graduate standing and/or instructor's consent.
- 410 **Seminar (1)**. Prerequisite: departmental consent.
- 418 **Correlative Neuroanatomy (4)**. Prerequisite:

- graduate standing and/or instructor's consent.
- 420 **Veterinary Physiology (5)**. Prerequisite: Biochemistry 270 and Biochemistry 272 or equivalent. w.
- 421 **Veterinary Physiology (5)**. Continuation of 420. f.
- 425 **Microvascular Circulatory Function (3)**. Prerequisite: Veterinary Physiology 220V and 221V or Mammalian Physiology 305 or equivalent.
- 450 **Research (cr. arr.)**
- 490 **Research (cr. arr.)**

### **Veterinary Medicine & Surgery**

- 200V Problems (cr. arr.)
- 251V **Food Animal Medicine and Surgery I (10)**. Six times per year.
- 252V **Food Animal Medicine and Surgery II (1-10)**. Prerequisite: 251V
- 253V **Small Animal Medicine I (10)**. Six times per year.
- 254V **Small Animal Medicine II (1-10)**. Prerequisite: 253V
- 255V **Equine Medicine and Surgery I (10)**. Six times per year.
- 256V **Equine Medicine and Surgery II (1-10)**. Continuation of 255V.
- 257V **Small Animal Surgery I (10)**. Six times per year.
- 258V **Small Animal Surgery II (1-10)**. Prerequisite: 257V or equivalent.
- 259V **Theriogenology I (10)**. Six times per year.
- 260V **Theriogenology II (1-10)**. Continuation of the prerequisite 259V.
- 261V **Medical Services I (10)**. Six times per year.
- 262V **Medical Services II (1-10)**. Continuation of 261V.
- 266V **Laboratory Animal Medicine and Management II (1-10)**.
- 267V **Herd Health Management and Nutrition I (1-10)**.
- 268V **Herd Health Management and Nutrition II (1-10)**. Prerequisite: 251V and 259V.
- 270V **Fundamentals of Clinical Medicine (4)**. Instructional period 9.
- 272V **Small Animal Surgery (2½)**. Instructional period 10.
- 273V **Radiology (2)**. Instructional period 9.
- 274V **Small Animal Medicine (2½)**. Instructional period 10.
- 275V **Food Animal Medicine and Surgery (3½)**. Instructional period 10.
- 276V **Laboratory Animal Medicine (1½)**. Instructional period 8.
- 277V **Veterinary Anesthesiology (1)**. Instructional Period 8.
- 278V **Equine Medicine and Surgery (2)**. Instructional periods 9 and 10.
- 300 Problems (cr. arr.)
- 328 **Introductory Radiation Biology (3)**. (same as Nuclear Engineering 328, Radiology 328, Biological Sciences 328). Prerequisite: junior standing sciences/engineering; one course in biological sciences and physics/

chemistry; or instructor's consent.

- 351 **Advanced Surgical Techniques (cr. arr.)** Prerequisite: DVM
- 355 **Advanced Techniques in Radiology (cr. arr.)** Prerequisite: DVM
- 356 **Advanced Studies of Poisonous Plants and Toxicology (cr. arr.)** Prerequisite: DVM
- 400 Problems (cr. arr.)
- 401 **Advanced Clinical Medicine (2)**.
- 410 **Seminar (1)**.
- 450 **Research (cr. arr.)**
- 487 **Nuclear Medicine (3)**. Prerequisite: one year college physics, DVM degree and departmental consent.
- 488 **Radiation Therapy (3)**. Prerequisite: one year college physics, DVM degree and departmental consent.
- 490 **Research (cr. arr.)**

### **Veterinary Microbiology**

- VM240V **Professional and Public Relations (1)**. Instructional Period 5.
- 241V **Veterinary Immunology (2)**. Instructional period 4.
- 242AV **Veterinary Bacteriology I (3)**. Prerequisite: enrollment in the College of Veterinary Medicine. Instructional period 5.
- 242BV **Veterinary Bacteriology II (2)**. Continuation of 242AV. Prerequisite: same as 242AV. Instructional period 6.
- 243V **Veterinary Virology (3)**. Instructional periods 6 and 7.
- VM244V **Introduction to Epidemiology and Biostatistics (2)**. Instructional Period 5.
- 245V **Veterinary Parasitology I (3)**. Prerequisite: enrollment in the College of Veterinary Medicine. Instructional period 6.
- 245BV **Veterinary Parasitology II (3)**. Continuation of 245AV. Prerequisite: same as 245AV. Instructional period 7.
- VM248V **Veterinary Meat Hygiene, Zoonosis and Preventive Medicine (4)**. Instructional Period 8.
- 270V **Epidemiology and Community Health (1-10)**. Prerequisite: 248V or instructor's consent. Instructional period arranged.
- 300 Problems (cr. arr.)
- 340 **Microbial Physiology (3)**. Prerequisite: one course in microbiology & one in general biochemistry. alt. f. odd yrs.
- 343 **Animal Virology (4)**. Prerequisites: general microbiology, general biochemistry. alt. f. odd yrs.
- 345 **Veterinary and Human Parasitology (4)**. Prerequisites Biological Sciences 210 or equivalent and instructor's consent. alt. w. even yrs.
- 347 **Clinical Epidemiology and Environmental Health (1-10)**. Prerequisite: enrollment in a professional medical, dental or public health curriculum. Instructional period 8.
- 348 **Epidemiology of Zoonotic Diseases (1-10)**. Prerequisite: enrollment in a professional medical, dental or public health curriculum.
- 410 **Seminar (1)**.
- 421 **Advanced Epidemiology (3)** (same as Family and Community Medicine 421). Prerequisite: completion of 420 or instructor's consent. alt. w. even yrs.
- 441 **Topics in Veterinary Microbiology (1-3)**. Prerequisite: graduate standing and instructor's consent.
- 442 **Advanced Veterinary Pathogenic Bacteriology (3)**. Prerequisite: graduate standing and instructor's consent.
- 443 **Viral Infection and Immunity (3)**. Prerequisite: graduate standing and instructor's

consent. alt. w. even yrs.

- 445 **Advanced Veterinary Parasitology (3)**. Prerequisite: one course in general parasitology and graduate standing. alt. w. even yrs.
- 446 **Cellular Function in Immunity (2)**. Prerequisites: graduate standing and instructor's consent. alt. f. even yrs.
- 447 **Oncogenic Animal Viruses (3)**. Prerequisite: general microbiology, virology, general biochemistry and instructor's consent. alt. f. odd yrs.
- 449 **Epidemiology of Zoonoses (3)**. (same as Family & Community Medicine) 449. Prerequisite: epidemiology and medical microbiology or instructor's consent. alt. w. even yrs.
- 490 **Research (cr. arr.)**

### **Veterinary Pathology**

- 200 Problems (cr. arr.). Prerequisite: departmental consent.
- 230 **Animal Sanitation and Disease Prevention (3)**. Prerequisite: Veterinary Biomedical Sciences 219 or Veterinary Biomedical Sciences 222. f. only.
- 231V **General Pathology (3)**. Instructional period 5. f.
- 232V **Systemic and Special Pathology I (3)**. Instructional period 6. w.
- 232BV **Systemic and Special Pathology II (3)**. Continuation of 232AV. Instructional period 7.
- 263V **Diagnostic Pathology and Special Species Medicine I (10)**. Offered six times yearly.
- 264V **Diagnostic Pathology and Special Species Medicine II (1-10)**. Prerequisite: 263V or equivalent.
- 300 Problems (cr. arr.) Prerequisite: DVM and departmental consent.
- 335 **Techniques in Pathology (cr. arr.)**
- VP401 **Topics (cr. arr.)**
- LAM401 **Topics (cr. arr.)**
- 410 **Seminar (1) f.w.**
- LAM410 **Seminar (1) f. & w.**
- 431 **Advanced Veterinary Pathology (3-5)**. Prerequisite: departmental consent.
- 432 **Advanced Histopathology (5)**. Prerequisite: departmental consent.
- 433 **Veterinary Oncology (3)**. Prerequisite: departmental consent.
- 434 **Advanced Clinical Pathology (4)**. Prerequisite: departmental consent. alt. f. even yrs.
- 437 **Pathology of Laboratory Animals (4)**. (same as Laboratory Animal Medicine 437). Prerequisite: departmental consent. w. even yrs.
- 438 **Primate Pathology (3)**. (same as Laboratory Animal Medicine Area 438). Prerequisite: departmental consent. alt. f. even yrs.
- 450 **Research (cr. arr.)**
- 451 **Electron Microscopy (1)**. (same as Plant Pathology 451). Prerequisite: graduate student and consent of instructor. w. only.
- 452 **Transmission Electron Microscopy Lab (4)**. (same as Plant Pathology 452). Prerequisite: 451 and consent of instructor. s. only.
- 453 **Scanning Electron Microscopy Lab (3)**. (same as Plant Pathology 453). Prerequisite: 451 and consent of instructor. w. only.
- LAM468 **Biology (4) f. odd yrs.**
- LAM469 **Colony Management (3) w. odd yrs.**
- LAM475 **Methodology of Animal Experimentation (3) f. even yrs.**
- 490 **Research (cr. arr.)** Prerequisite: departmental consent.



# Faculty

## Veterinary Biomedical Sciences

- H. Richard Adams**, DVM, PhD, professor and chairman; professor, pharmacology, School of Medicine; chairman, Physiology Area Program; research investigator, Dalton Research Center
- J. Alan Allert**, DVM, instructor John F. Amann, PhD, DVM, assistant professor
- Esther M. Brown**, PhD, professor
- Olen Brown**, PhD, professor; professor, microbiology, School of Medicine; research investigator, Dalton Research Center
- Gheorghe M. Constantinescu**, DVM, DMV, associate professor
- Venkataseshu K. Ganjam**, BVSc, PhD, professor; research investigator, Dalton Research Center
- Calvin C. Hale**, PhD, assistant professor; research investigator, Dalton Research Center
- Eileen M. Hasser**, PhD, assistant professor
- Harold Laughlin**, PhD, associate professor, director of graduate studies; research investigator, Dalton Research Center
- Chada S. Reddy**, BVSc, PhD, associate professor; associate professor, pharmacology, School of Medicine
- Vincent V. St. Omer**, DVM, PhD, professor; professor, pharmacology, School of Medicine
- James Schadt**, PhD, assistant professor; research investigator, Dalton Research Center
- Wade V. Welshons**, PhD, assistant professor

### Non-Regular Faculty

- C. Trenton Boyd**, BS, MA, librarian, assistant professor
- Gary S. Johnson**, DVM, PhD, associate professor, veterinary pathology
- George E. Rottinghaus**, PhD, assistant professor, veterinary diagnostic laboratory

### Emeritus Faculty

- Roger E. Brown**, DVM, PhD, professor emeritus
- Homer E. Dale**, DVM, PhD, professor emeritus

## Veterinary Medicine and Surgery

- James E. Creed**, DVM, MS, professor and chairman
- Everett Aronson**, DVM, MS, associate professor
- William Braun**, DVM, associate professor
- Claud B. Chastain**, DVM, MS, professor
- Bruce L. Clark**, DVM, assistant professor
- E. Allen Corley**, DVM, PhD, professor; director, Orthopedic Foundation for Animals
- Louis A. Corwin Jr.**, DVM, PhD, professor; School of Medicine
- Ross P. Cowart**, DVM, MS, assistant professor
- Frankee P. Eliot**, DVM, MS, clinical associate professor
- V. K. Ganjam**, DVM, PhD, professor, director of graduate studies
- Harold E. Garner**, DVM, PhD, professor; research investigator, Dalton Research Center
- Eleanor M. Green**, DVM, MS, assistant professor
- Allen W. Hahn**, DVM, PhD, professor, research investigator, Dalton Research Center
- Brent D. Jones**, DVM, associate professor
- Stephen T. Kelley**, DVM, MS, assistant professor; assistant professor, School of Medicine
- David W. Knapp**, DVM, instructor
- Jimmy C. Lattimer**, DVM, MS, associate professor
- Karen MacFadden**, DVM, instructor
- Dudley McCaw**, DVM, assistant professor
- Robert B. Miller**, DVM, MS, PhD, associate professor; veterinary pathology, associate professor
- Laurie L. Mills**, DVM, MS, assistant professor
- Cecil P. Moore**, DVM, MS, associate professor
- Clifton N. Murphy**, DVM, MS, assistant professor
- Kenneth H. Niemeyer**, DVM, MS, associate dean, professor
- Dennis O'Brien**, DVM, MS, assistant professor
- Eric Pope**, DVM, MS, assistant professor

- James G. Thorne**, DVM, PhD, professor; director of continuing education and extension
- James L. Tomlinson**, DVM, M. Vet. Sc., associate professor
- Louis G. Tritschler**, DVM, MS, professor; director, Equine Center
- Douglas S. Ward**, DVM, MS, assistant professor
- A. David Weaver**, BVSc, DMV, PhD, professor
- William Wolff**, DVM, MS, clinical associate professor
- Robert S. Youngquist**, DVM, professor

### Adjunct Faculty

- R. Eric Miller**, DVM, adjunct assistant professor; staff veterinarian, St. Louis Zoo

### Emeritus Faculty

- Clarence J. Bierschwal**, DVM, MS, emeritus professor
- Arthur W. Dobson**, DVM, MS, emeritus professor
- Harlan E. Jensen**, DVM, emeritus professor
- Burrell Kingrey**, DVM, dean emeritus
- Joseph T. McGinity**, DVM, MS, emeritus professor

### Residents and Interns

- Guy Bouchard**, DVM, resident veterinarian
- Forest Buchanan**, DVM, intern
- Lisa M. Butler**, DVM, intern
- Jana L. Cargile**, DVM, intern
- Paul Dean**, DVM, resident veterinarian
- Bennett D. Fagin**, DVM, resident veterinarian
- Peter Farin**, DVM, resident veterinarian
- Edward J. Fleming**, DVM, resident veterinarian
- Randall A. Graehler**, DVM, intern
- Randall Junge**, DVM, Resident veterinarian
- Greg Keller**, DVM, resident veterinarian
- Kim E. Knowles**, DVM, resident veterinarian
- Karl Kraus**, DVM, resident veterinarian
- Scott M. Lozier**, DVM, resident veterinarian
- Hernando Plata Madrid**, DVM, intern

**Terri L. McCalla**, DVM, resident veterinarian  
**Marilyn G. Mikiciuk**, DVM, resident veterinarian  
**Kristina Miles**, DVM, resident veterinarian  
**Patrick E. Phillips**, DVM, resident veterinarian  
**Julie Smith**, DVM, intern  
**John W. Tyler**, DVM, resident veterinarian  
**Andrew G. Walther**, DVM, intern

### Veterinary Microbiology

**C. Andrew Carson**, VMD, MS, PhD, professor and chairman  
**Hans K. Addinger**, DVM, PhD, professor, director of Graduate Studies (MS)  
**John N. Berg**, DVM, PhD, professor, director of Graduate Studies (PhD)  
**Donald C. Blenden**, DVM, MS, professor; medicine (infectious diseases), professor; clinical pathology (professor)  
**Gerald M. Buening**, DVM, PhD, professor  
**Robert M. Corwin**, DVM, PhD, professor  
**William H. Fales**, MS, PhD, professor  
**Theodore J. Green**, MS, PhD, associate professor  
**Robert F. Kahrs**, DVM, PhD, professor and dean  
**Emmett McCune**, DVM, PhD, professor  
**Ronald McLaughlin**, DVM, MS, professor and director of laboratory animal resources  
**Bimal K. Ray**, MS, PhD, assistant professor  
**Bruce D. Rosenquist**, DVM, PhD, professor  
**Robert F. Solorzano**, PhD, professor  
**Manuel J. Torres-Anjel**, DVM, PhD, associate professor

#### Adjunct Faculty

**Patrick Phillips**, DVM, adjunct assistant professor  
**E. Thomas Satalowich**, DVM, adjunct associate professor

#### Emeritus Professor

**Harold McDougle**, DVM, AM, professor emeritus

### Veterinary Pathology

**Joseph E. Wagner**, DVM, PhD, professor and chairman  
**Cynthia Besch-Williford**, DVM, PhD, assistant professor  
**Thomas Brown**, DVM, PhD, assistant professor  
**Linda Collier**, DVM, PhD, associate professor  
**Gary S. Johnson**, DVM, PhD, associate professor  
**Lela Riley**, DVM, PhD, assistant professor  
**Darrell Kinden**, PhD, associate professor  
**Robert B. Miller**, DVM, PhD, associate professor; veterinary medicine and surgery, associate professor  
**Bonnard Moseley**, DVM, MS, associate professor, extension veterinarian  
**Stuart Nelson**, DVM, PhD, professor  
**LeRoy D. Olson**, DVM, PhD, professor  
**Merl F. Raisbeck**, DVM, PhD, assistant professor  
**Donald A. Schmidt**, DVM, PhD, professor  
**Daniel P. Shaw**, DVM, instructor  
**Earl Steffen**, PghD, research assistant professor  
**Steven L. Stockham**, DVM, MS, associate professor  
**Larry P. Thornburg**, DVM, PhD, associate professor  
**James Turk**, DVM, PhD, associate professor  
**Margaret A.M. Turk**, DVM, PhD, associate professor

#### Adjunct Faculty

**William J. Boever**, DVM, adjunct assistant professor, sr. staff veterinarian, St. Louis Zoo  
**Jorge Ribas**, adjunct assistant professor, Monsanto, St. Louis, Missouri

#### Emeritus Faculty

**Harry H. Berrier**, DVM, associate professor emeritus  
**Willard H. Eyestone**, DVM, PhD, professor emeritus  
**Loren D. Kintner**, DVM, MS, professor emeritus  
**Donald E. Rodabaugh**, DVM, MS, professor emeritus  
**Lawrence G. Morehouse**, DVM, PhD, professor emeritus

#### Research Associates

**Pat Farrar**, DVM  
**Craig Franklin**, DVM  
**Susan V. Gibson**, DVM  
**Mary F. Goelz**, DVM  
**Joe Kendall**, DVM  
**David E. Bean-Kundsen**, DVM  
**Curt M. Matherne**, DVM  
**Sherri Motzel**, DVM  
**Mike Parker**, DVM  
**Joe Safron**, DVM  
**Lucy Senter**, DVM  
**Kathy Vogelweid**, DVM  
**Nancy Winjum**, DVM

### Veterinary Medical Diagnostic Laboratory

#### Participating Faculty

**Lawrence G. Morehouse**, DVM, PhD, professor emeritus, veterinary pathology; interim director, veterinary medical diagnostic laboratory  
**Cynthia Besch-Williford**, DVM, PhD, assistant professor, veterinary pathology diplomate, ACLAM  
**Thomas Brown**, DVM, PhD, assistant professor, veterinary pathology  
**William H. Eales**, PhD, associate professor, veterinary microbiology  
**Ann B. Kier**, DVM, PhD, associate professor, veterinary pathology, diplomate, ACLAM  
**Emmett McCune**, DVM, PhD, professor veterinary microbiology (avian pathology and bacteriology)  
**Stuart Nelson**, DVM, PhD, professor, veterinary pathology, diplomate ACVP  
**Merl Raisbeck**, DVM, PhD, assistant professor, diplomate ABVT  
**George Rottinghaus**, PhD, associate professor, veterinary biomedical sciences (analytical chemistry)  
**Daniel Shaw**, DVM, instructor, veterinary pathology, diplomate ACVP  
**Robert F. Solorzano**, PhD, professor, veterinary microbiology (virology)  
**Earl Steffen**, PhD, microbiologist, veterinary pathology  
**James Turk**, DVM, PhD, associate professor, veterinary pathology, diplomate, ACVP  
**Margaret A. M. Turk**, DVM, PhD, associate professor, veterinary pathology, diplomate, ACVP



University  
of Missouri

*150*

1839 - 1989



010-101451992

**HECKMAN  
BINDERY INC.**



**JAN 97**

Bound-To-Please® N. MANCHESTER,  
INDIANA 46962



University Libraries  
University of Missouri

### Digitization Information Page

Local identifier                      CollegeOfVeterinaryMedicine1988

#### Source information

Format	Catalog
Content type	Text with images
Source ID	010-101451992
Notes	None

#### Capture information

Date captured	06/03/2021
Scanner manufacturer	Plustek OpticBook
Scanner model	A300 Plus
Scanning system software	Book Pavilion
Optical resolution	600 dpi
Color settings	24 bit color / 8 bit grayscale
File types	tiff
Notes	None

#### Derivatives - Access copy

Compression	Tiff: LZW compression
Editing software	Adobe Photoshop CC
Resolution	600 dpi
Color	color / grayscale
File types	tiff
Notes	Images cropped, straightened, brightened