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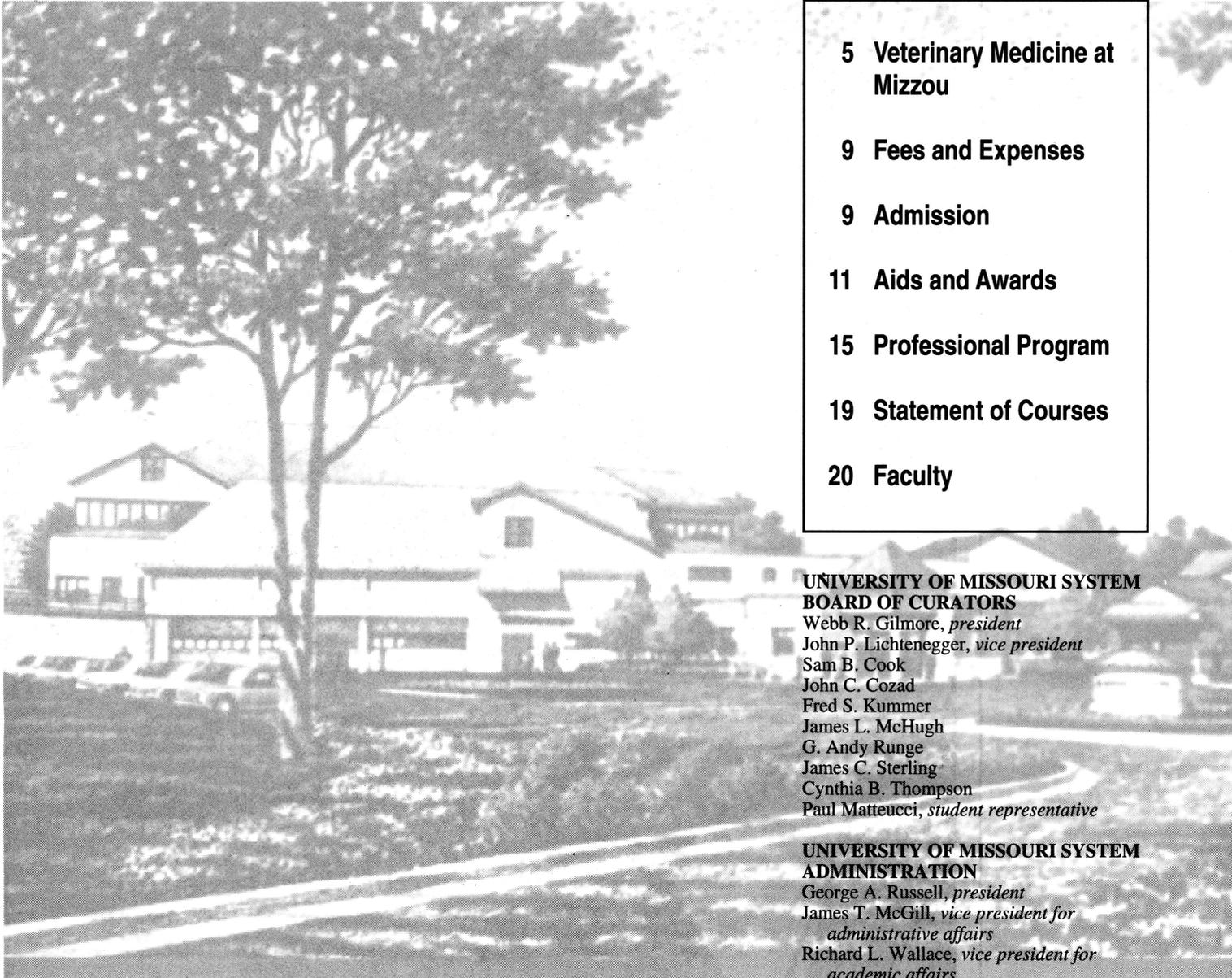
Veterinary Medicine *Catalog*

with course descriptions



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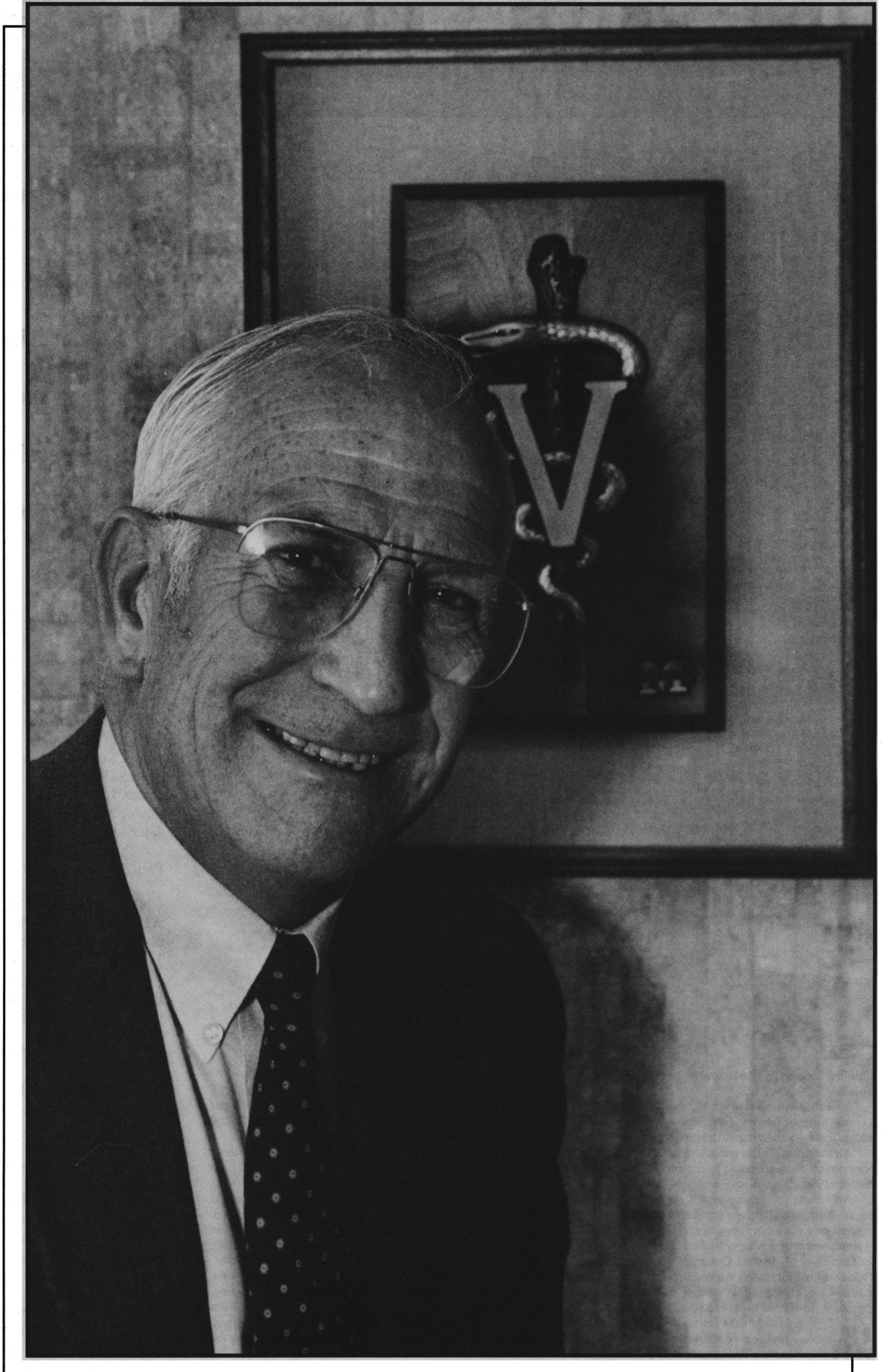
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YOUR COLLEGE OF VETERINARY MEDICINE

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

The programs needed to meet these objectives fulfill many of the public's expectations of the state's only complete animal-health facility. The professional curriculum is integrated with college activities that provide statewide animal disease diagnostic services, extension and continuing education programs for animal owners, consultation services for all animals, research programs in animal and human diseases, and advanced specialized training for veterinarians, bioagricultural and biomedical scientists. These programs support Missouri's livestock industry and touch more than 1 million companion animal-owning households.

Annually, the college graduates about 64 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 with hands-on experience in the diagnosis, treatment and prevention of animal disease.

Our graduates are animal-health experts, complete veterinarians who, after graduation and licensing, are ready for any phase of veterinary medicine. Most focus on some restricted professional activity; some seek additional training in a 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 domestic animals. This responsibility requires the total energies of a highly trained and dedicated faculty, and about 50 postdoctoral 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 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 livestock export industry and responds to infectious or toxic emergencies involving animals, the environment and the food chain. Each year faculty respond to thousands of queries on all aspects of animal health.

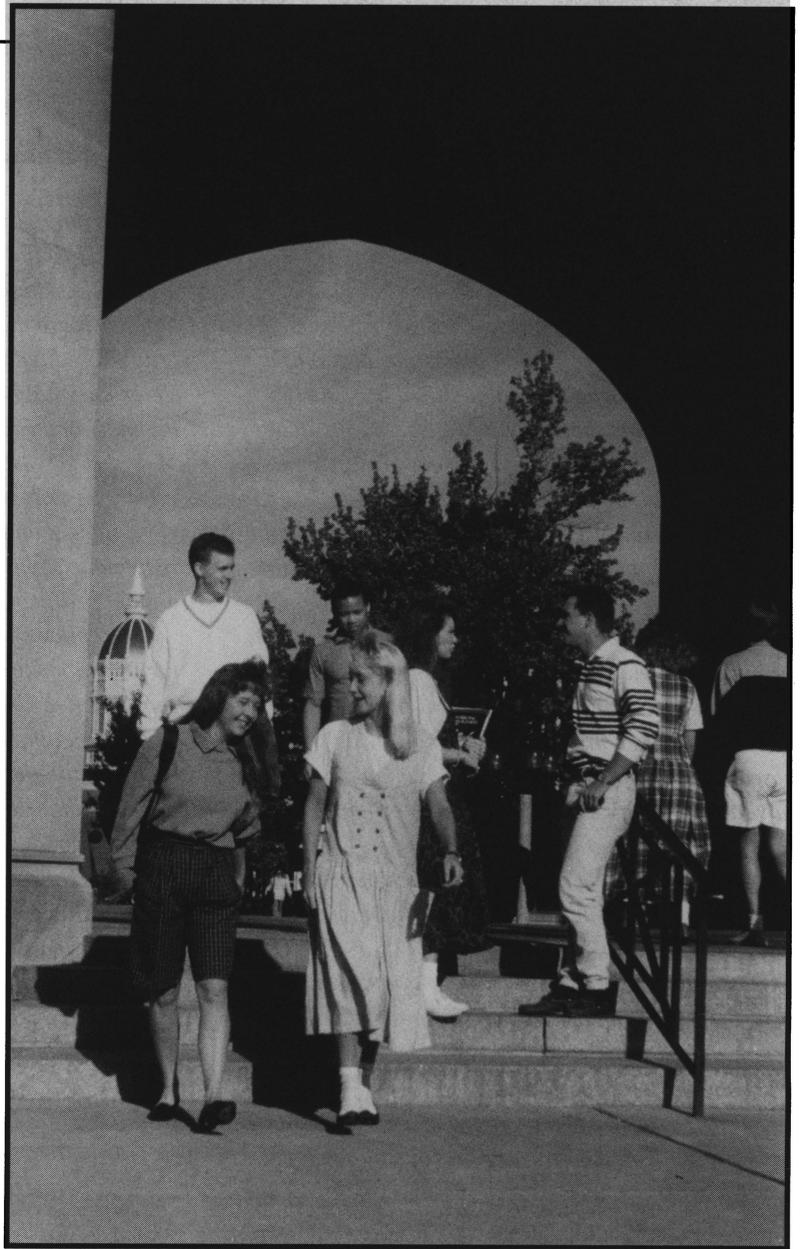
The college has attained prominence for its contributions to knowledge about infectious and reproductive diseases of livestock, small-animal surgery, equine lameness, bloodborne infections and blood clotting disorders, cardiovascular physiology of animals and man, procedures for diagnosing animal diseases and 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, public presentations and telephone responses.

The college is proud of its heritage and seeks to meet the challenges of the future and expand on its 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, DVM
Dean



The college's admission and scholarship committee seeks students with a high scholastic ability, a wide range of interests, strong leadership abilities and a willingness to work toward a worthwhile goal.

Lower right, the historic Columns are a familiar landmark on MU's Francis Quadrangle.



Brief History

Established in 1839, the University of Missouri-Columbia is the first state university west of the Mississippi River. Designated a land-grant university in 1870, it conducts traditional teaching, outreach and research programs on campuses and throughout Missouri. Today, MU is part of University of Missouri System with other institutions in Kansas City, Rolla and St. Louis. University System Programs are administered by the president and governed by a board of curators. The chancellors are the chief academic and administrative officers at their respective campuses.

Veterinary medicine at the University began in 1884. It 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, 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 veterinary science faculty who taught courses to agricultural students, investigated animal and poultry diseases, performed diagnostic and extension work and produced animal vaccines.

The professional curriculum leading to the DVM degree was established in 1946 to offer educational opportunities to World War II veterans. In 1950, 26 new veterinarians graduated in the first class.

From 1946-1965 there were 30 students, all Missouri residents, in each of the four classes studying for the DVM degree. In 1965, class size doubled and non-residents were admitted in response to federal funding incentives. These federal "capitation" funds offered to alleviate a national shortage of veterinarians and stimulated another class size increase (to 76 students) in 1976. In the early '80s, the national need for veterinarians stabilized, federal funding was withdrawn and enrollment was lowered in the interest of quality education and efficient space planning. The college has graduated more than 2,000 veterinarians since 1946.

A teaching hospital was built in 1961, and a diagnostic laboratory and a teaching-research building were added in 1977. Advancing technology, changing animal populations and new medical and surgical techniques have required frequent modifications to the teaching hospital. The 1961 version is now slated for replacement by a three-clinic facility designed for classes of 60 students. The new hospital is scheduled for completion in 1992. A long-range facilities plan has been developed to assure that Missouri's animal-health needs will continue to be met in the future.

Careers in Veterinary Medicine

Veterinary medicine is a proud profession attractive to those interested in animals and the biological sciences. It offers challenging and rewarding career opportunities in private practice, government, industry, education and the military.

PRACTICE OPPORTUNITIES IN VETERINARY MEDICINE. Today, most veterinarians are self-employed or work for private practitioners in individual or group practices. Successful practitioners work long and 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 people. The type of practice selected is usually based on the area or population center in which veterinarians choose to reside, 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 near rural areas. They are called general practitioners and work in mixed practices. General practice is a rigorous, physically demanding activity. It provides opportunity to become a dedicated public servant and earn a modest income. It requires no formal training beyond the DVM degree. It presents the challenge of keeping abreast of developments in medical or surgical approaches to all diseases of animals through constant reading and attendance at continuing education programs.

LARGE-ANIMAL PRACTICE. Some veterinarians work only with livestock 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 understanding of the economic constraints and management conditions under which they are raised.

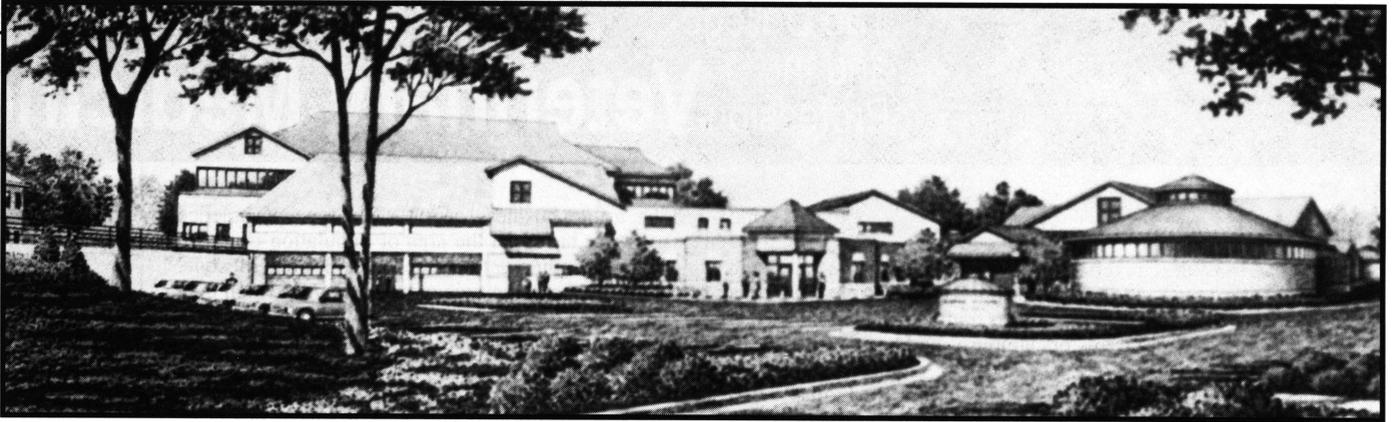
Usually large-animal practitioners travel to farms. They spend many hours on the road and sometimes must function under challenging field conditions, where restraint facilities and sanitary conditions are less than optimal. Economic realities and the value of the patient are prime factors in medical decisions in large-animal practice and are major determinants of practitioners' 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.

SMALL-ANIMAL PRACTICE. Small-animal practitioners minister to the health needs of dogs, cats and pet birds. The veterinarians 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. Small-animal veterinarians function in an environment conducive to practicing high-quality medicine and surgery with equipment and supplies comparable to a physician's office or a 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. General practitioners 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 problems of one species. There are equine practitioners, bovine practitioners, feline practitioners and poultry practitioners. Equine practices are the most numerous of these species-limited practices. Equine practitioners 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 profitable. The species specialists usually develop their expertise without formal training beyond the DVM degree, but some use a residency at a college or with another specialist to develop their skills.



The college's new veterinary teaching hospital, completed in 1992. Students and faculty treat companion and farm animals in three modern clinics.

VETERINARY CLINICAL SPECIALISTS. A small number of practicing veterinarians become specialists in radiology (X-ray diagnosis and therapy), dermatology, internal medicine, small-animal or equine surgery, theriogenology (reproductive diseases) or ophthalmology. These may have general practices or limit their activities to certain types of diseases. Some travel to several practices, others are specialists within multiveterinarian practices. Others are solo practitioners handling special cases referred by other veterinarians. Some clinical specialists develop their expertise through on-the-job study and experience, but most gain their training in formal residency programs at universities offering a veterinary medicine curriculum. Specialty status is granted by specialty boards or colleges that grant diplomat status by examination. Diplomats are board certified. 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 manufacturers, government agencies, feed companies or other organizations needing professional advice. Consulting veterinarians can be practitioners, former practitioners or employees of corporations, government agencies or universities. The opportunity to serve as a consultant is usually based on expertise or national prominence developed through years of activity and achievement 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 because they must make a name for themselves to be in demand.

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 or teaching. Many assume administrative roles.

For the most part, new graduates work in private practice for a few years before employment in government and industry. Veterinarians seeking academic and research careers some-

times 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 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 Institutes of Health, which involve DVM's in research and in laboratory animal medicine, the Food and Drug Administration, the U.S. Public Health Service, the U.S. Air Force and the Agency for International Development. These positions involve a variety of scientific, professional and managerial activities, sometimes with international assignments.

CORPORATE EMPLOYMENT. Drug and pharmaceutical manufacturers, feed manufacturers, pet food manufacturers and corporate farms and feedlots utilize veterinarians in research and development, management consultation, herd-health programming, 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 United States, more than 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 seek residency training leading to board certification in a clinical specialty.

Facilities of the College

MU's College of Veterinary Medicine has administrative and academic support offices, four academic departments and a diagnostic laboratory. These units are in four buildings in the southeast corner of the campus.

The veterinary complex includes Connaway Hall, the Vet-

erinary Diagnostic Laboratory, the Veterinary Medicine Building, which is an addition to the Veterinary Medical Teaching Hospital, and the Veterinary Science Building.

THE VETERINARY MEDICAL DIAGNOSTIC LABORATORY. The Veterinary Diagnostic Laboratory houses mammalian and avian post-mortem examination rooms 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. The Veterinary Medicine Building houses teaching facilities for the departments of Veterinary Biomedical Sciences, Veterinary Pathology and Veterinary Medicine and Surgery. It houses teaching laboratories, classrooms, seminar rooms, a clinical pathology laboratory and the veterinary library.

The library, a branch of Ellis Library, contains more than 42,000 volumes and receives about 500 periodicals. It has two learning centers designed for individual audiotutorial carrels. Open daily, it is designed to serve veterinary medical and graduate students, and the teaching and research needs of the college. It supplements the libraries in the University's system.

Teaching laboratories facilitate the use of visual aids and demonstration materials, and provide work and storage space for each student. Students are 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 professional and non-professional 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 aca-

demical affairs, associate dean for research and graduate studies and the assistant to the dean. Student, faculty and alumni records, and the college's 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 in the Veterinary Medicine Building.

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

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

VETERINARY SCIENCE BUILDING. This building provides teaching and research laboratories for the physiology-pharmacology section of the Department of Veterinary Biomedical Sciences. It houses research laboratories for faculty assigned to the diagnostic laboratory and carrels for graduate students.

VETERINARY MEDICAL TEACHING HOSPITAL. The Veterinary Medical Teaching Hospital is the center for teaching clinical medicine. 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 specializes 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



The college's veterinary teaching hospital is the only place in the state that uses operating microscopes to perform delicate eye surgery on pets.

professional veterinary services for area livestock farmers. Operating with fully equipped, radio-dispatched 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 more than 100 patients.

In September 1989, the Board of Curators approved plans for construction of a new Veterinary Medical Teaching Hospital. It will contain a small-animal clinic, a food-animal clinic and equine clinic, and central support service areas.

MIDDLEBUSH FARM. The 288-acre farm south of Columbia houses the Equine Center, where students are instructed in equine medicine and surgery. Medical, obstetrical and surgical services are provided for local animals and those referred by practicing veterinarians. Space is provided for sophisticated research projects. A center for studying of infectious diseases is being developed. When the new veterinary teaching hospital is completed, the equine clinic will move to campus and the Middlebush Farm will become the Center for Animal Health and Welfare Technology.

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

LOW-LEVEL RADIATION LABORATORY. This labora-

tory, owned by the College of Agriculture, Food and Natural Resources, contains a low-level, whole-body radiation counter, which measures 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, shops, offices and a specialized branch of Ellis Library. Interdisciplinary projects in cardiovascular physiology and related technology are coordinated by the center.

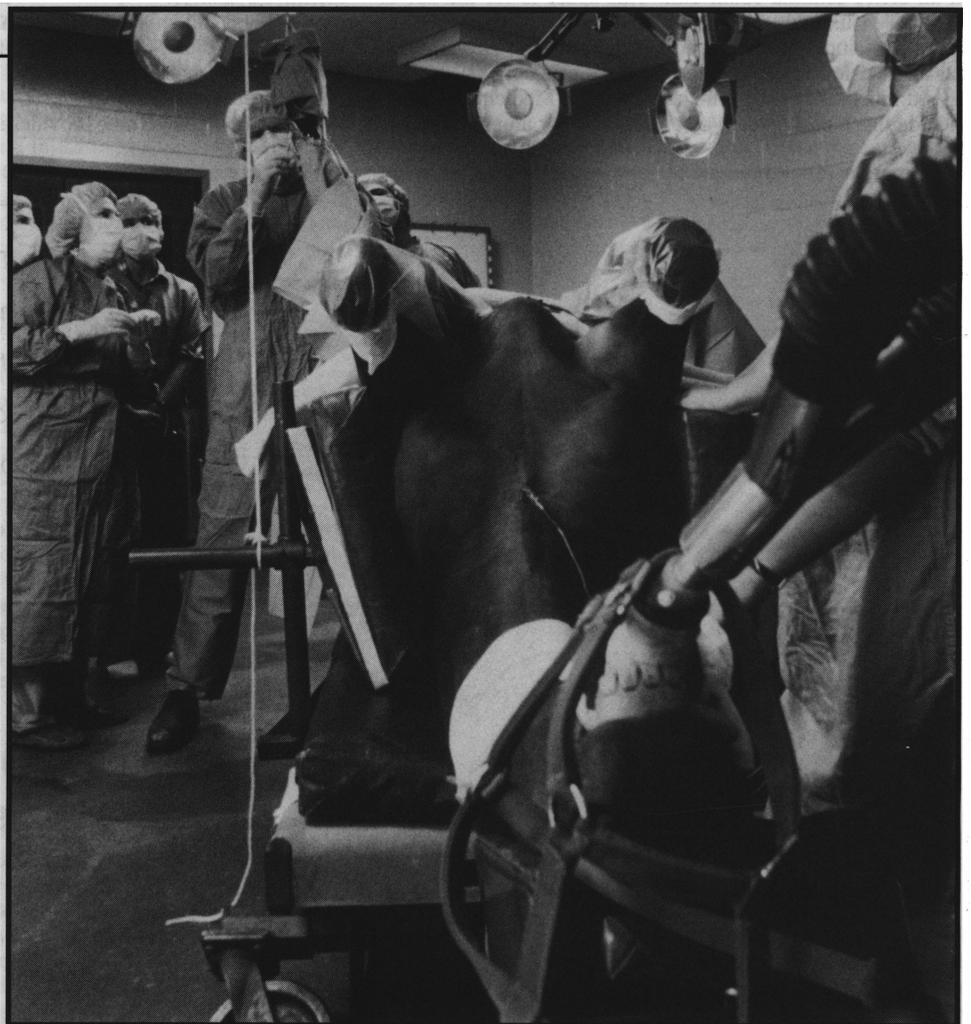
NUCLEAR REACTOR RESEARCH FACILITY. One of the most powerful nuclear reactors at a university nationwide is in Research Park near the stadium. The College of Veterinary Medicine has access to this facility to conduct radiobiological experiments.

ELLIS LIBRARY. One of the largest university libraries in the United States, Ellis houses more than 2.5 million volumes and 17,500 serials and journals every year in the main and branch libraries.

MISSOURI AGRICULTURAL EXPERIMENT STATION. Certain research activities in the School of Natural Resources, and the colleges of human environmental sciences, veterinary medicine and agriculture, food and natural resources are coordinated through the experiment station.

CAMPUS COMPUTER NETWORK. This network has developed necessary computing facilities to assist the educational and research programs of all divisions at Mizzou.

Surgeons and students perform orthopedic surgery at the college's Equine Hospital, where more than 2,000 horses are treated annually.



The following schedule lists fees and estimated expenses of an unmarried student living off campus for the year 1991-92.

Fees and Expenses*

FIRST YEAR (AUGUST-JULY)

Fees	\$5,478
includes Mizzou educational fee, veterinary medicine supplemental fee and student activity fee.	
Supplies, books, instruments	\$682
Living expenses	\$8,750
includes off-campus rent, utilities, food, transportation, clothing and personal items, insurance and recreation.	
Total estimated fees and expenses	\$14,910
Non-resident tuition (additional)	\$4,522

SECOND YEAR (AUGUST-JULY)

Fees	\$5,478
Supplies, books, instruments	\$1,372
Living expenses	\$10,500
Total estimated fees and expenses	\$17,350
Non-resident tuition (additional)	\$4,522

THIRD YEAR (JULY-JULY)

Fees	\$5,478
Supplies, books, instruments	\$1,032
Living expenses	\$11,340
Total estimated fees and expenses	\$17,850
Non-resident tuition (additional)	\$4,522

FOURTH YEAR (JULY-MAY)

Fees	\$5,478
Supplies, books, instruments	\$1,364
Living expenses	\$10,398
includes expenses for job interviews	
Total estimated fees and expenses	\$17,240
Non-resident tuition (additional)	\$4,522

Detailed information on fees and expenses, including supplemental fees, is furnished in the Schedule of Courses. Upon request, the Registrar's Office, 123 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.

*Fees are subject to change

REFUND OF ACADEMIC FEES. Students leaving the college may receive a refund of fees. Subject to certain exceptions and because of the nature of the curriculum, refunds will be calculated after the Cashier's Office receives a written request from the student. Fee refunds are paid in accordance with the following schedule:

100 percent refund before first day of class less \$10 for processing enrollment; 70 percent within 1/8 of fee period completed, 50 percent refund within 3/8 of fee period completed, and zero percent refund after 3/8 of fee period completed. With questions, write or call the Cashier's Office, 15 Jesse Hall, Columbia, Mo. 65211, (314) 882-7728.

REFUND OF HOUSING FEES. University room-and-board charges and the contract deposit are refunded in accordance with the terms of the contract.

ADMISSION

High-School Study

Although 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.

A working knowledge of computers is advised.

Preprofessional Study

A minimum of 61 hours of preprofessional courses are required for admission to the professional program leading to the 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 write the Office of Admissions, 130 Jesse Hall, Columbia, Mo. 65211.

Preprofessional Curriculum

Students must satisfactorily complete at least 61 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 program 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 below D is made in a required course, the course must be repeated. Correspondence courses are not accepted for admission purposes.

The following courses are required for those entering the college.

English or communication: 6 hours

10 Composition; 50 Creative Writing; 20 Exposition; 20GH 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: 5 hours (including laboratory)

115 Organic Chemistry

Biochemistry: 3 hours

193 Biochemistry

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 or humanistic studies: 10 hours

Can include courses from history, economics, political science, geography, literature, mythology and philosophy.

Animal or human nutrition: 3 hours

202 or 212 Animal Nutrition; 234 Human Nutrition. (chemistry prerequisite)

Electives: 8 hours

Total: 61 hours

Admissions Guidelines

Since the College is state-supported, 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.
4. Applicants must have a cumulative GPA of 2.5 on a 4.0 scale.

5. International students cannot be given consideration for the professional program.

Application Procedure

It is recommended that all students interested in veterinary medicine write or call the college's associate dean for academic and alumni affairs for advisement during the fall semester preceding the year of application.

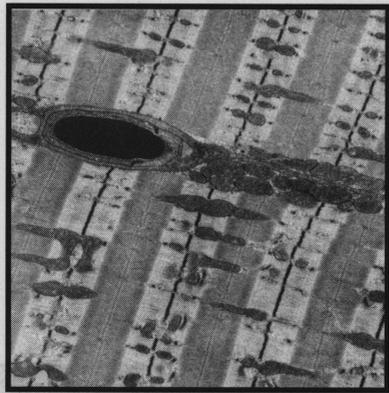
Students must enter the college at the beginning of the fall semester. Application forms must be requested, completed and submitted no later than Dec. 15 of the year before admission is sought. Students seeking admission should follow this procedure:

1. Request admission forms from the office of the associate dean for academic and alumni affairs, College of Veterinary Medicine, W203 Veterinary Medicine Bldg., Columbia, Mo. 65211. Application materials are available Sept. 1 through Dec. 1.

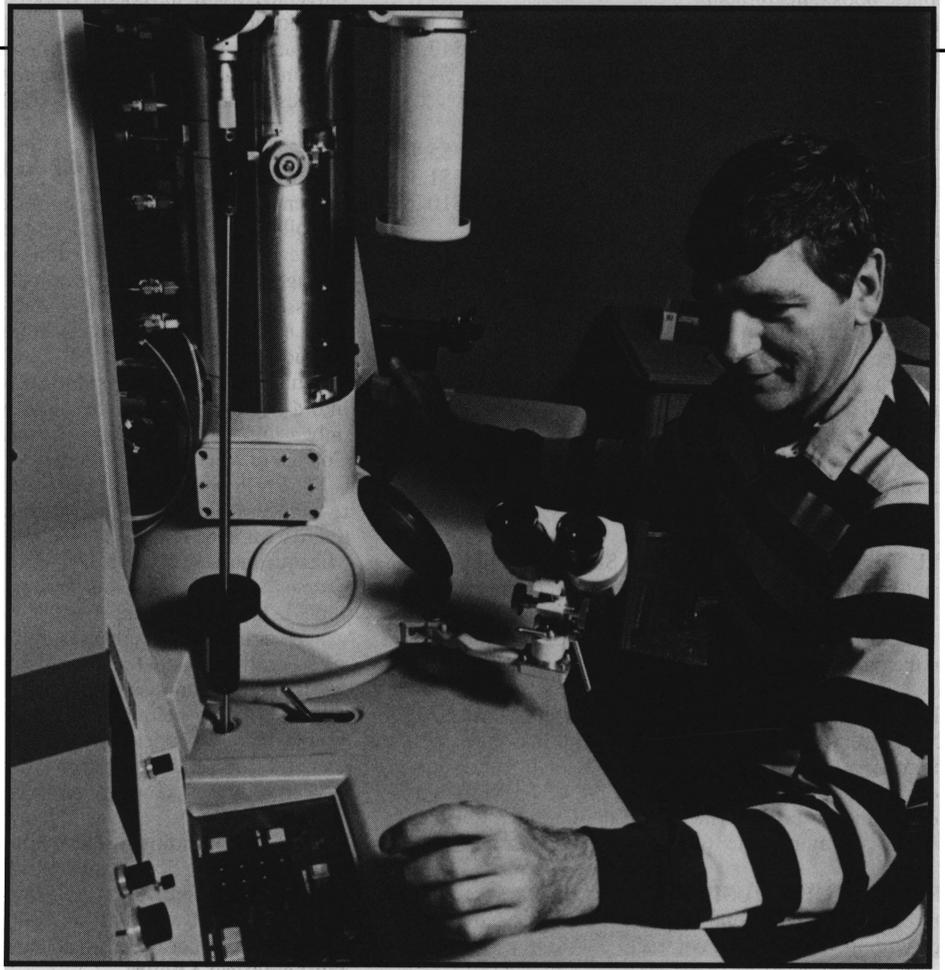
2. Return the completed forms to the office of the associate dean for academic and alumni affairs by Dec. 15.

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

The college's admissions and scholarship committee reviews all applications and determines an applicant's eligibility. 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.



Electron microscopes allow researchers and students to enlarge and photograph specimens, like the one above, which are sent to the college's laboratories. With this equipment, researchers can identify minute particles and viruses that are undetected by ordinary microscopes.



Aids, Scholarships and Awards

Mizzou has numerous scholarship and loan funds, described in detail in the Scholarships, Aids and Awards Profile. Additional information on these funds is available from the director of financial aid, 11 Jesse Hall, Columbia, Mo. 65211, or the associate dean for academic and alumni affairs, College of Veterinary Medicine, W203 Veterinary Medicine Building, Columbia, Mo. 65211.

Scholarships

Curators Scholars in Veterinary Medicine - These awards, based on scholarship, 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 - These scholarships are for fourth-year veterinary students. Applications can be obtained in the office of the associate dean for academic and alumni affairs, W203 Veterinary Medicine Building, Columbia, Mo. 65211. 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 MU are eligible. Applications can be obtained in the office of the associate dean for academic and alumni affairs, W203 Veterinary Medicine Building, Columbia, Mo. 65211. 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. 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 who need financial support, or to a veterinary graduate student who needs 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 GPA of at least 3.0 and who 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. You should establish yourselves as professional students before applying for money from the funds available to veterinary medicine. To apply for the HPL, Perkins, Stafford Student Loan (SSL) or Supplemental Loan for Students (SLS) programs, you must complete the ACT Family Financial Statement (FFS).

Health Professions Student Loan Program (HPL) - HPL loans are federal loans and are borrowed directly from the College of Veterinary Medicine. The yearly maximum is set by the College of Veterinary Medicine. HPL's have a 5 percent interest rate and a 12-month grace period. You must include parental financial information on your FFS whether you file as independent or dependent.

Perkins Loan - This is a federal loan borrowed directly from the College of Veterinary Medicine. Yearly maximums are set by the College of Veterinary Medicine. The loans have a 5 percent interest rate and a nine-month grace period.

Stafford Student Loans - SSL's are federal loans borrowed from a private lender and are based on eligibility determined by the FFS. The yearly maximum is \$7,500, and for new borrowers the interest rate is 8 percent through the first four years of repayment and then 10 percent. The loan has a six-month grace period.

Supplemental Loan for Students - The SLS loan is a federal loan borrowed from a private lender and based on eligibility determined by the cost of education. It has a \$4,000 yearly maximum at a variable interest rate determined annually to a maximum of 12 percent. Interest accrues beginning 60 days after you receive the loan proceeds. There is a 60-day grace period for the principle.

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 in 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 also may be considered.

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 short-term emergency fund is 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 who are major-

Pets are treated by experts trained at the college's Companion Animal Hospital. To aid exotic and endangered animals, the college's veterinary clinics provide consultants to zoos throughout the country.



ing 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.

Rolf Memorial Award - This award is presented to a fourth-year student, who exemplifies ethical and professional integrity, has superior ability to relate to clients and excels in animal care. The recipient is nominated by classmates and selected by the clinical faculty.

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 give a senior student a cash award for the best 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.

Redhage Award - An award is presented to a resident who has demonstrated interest and proficiency in canine medicine and surgery and who has great concern in client relations.

Randolph Practitioner Award - This award is to a fourth-year student who, in the opinion of the clinical faculty, is most likely to succeed in the general practice of veterinary medicine.

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.

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, assistant to the dean of veterinary medicine, 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 first-, second- and third-year students 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 Co. 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 that hangs in the Veterinary Medicine Library.

Merck Awards - Merck and Co. 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.

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 college's prestige on 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.

Emmett McCune Avian Medicine Award - This cash award and certificate is given annually to a third- or fourth-year veterinary student or a graduate student who has shown outstanding interest and understanding of poultry production, medicine and disease prevention.

L.N. Atkinson, DVM, Memorial Fund - One or more annual awards shall be made to an intern, who has demonstrated interest and proficiency in canine medicine and surgery.

Food-Animal Student Assistance Award - One or more annual awards shall be made to third- or fourth-year professional students for advanced studies in food-animal medicine. The selection of recipients shall be by clinical faculty.

American College of Veterinary Surgeons Student Award -

Provides to a senior student a surgery award for academic and clinical proficiency. The award consists of a certificate and a one-year subscription to *Veterinary Surgery*.

IAMS Scholarship - This is presented to a student who submits the best paper on small-animal nutrition as defined by IAMS and judged by the clinical faculty.

Miss America Scholarship in Veterinary Medicine - The Miss America Pageant has endowed this scholarship in honor of Debbye Turner, Miss America 1990, a 1991 graduate of the college. The scholarship is given to a female student entering the third year of study who demonstrates leadership in college organizations and activities, and promotes the veterinary profession through community service and academic achievement.

Theriogenology Award - This award, sponsored by the student bookstore, is presented to the outstanding student in theriogenology.

Radiology Award - This award, sponsored by the student bookstore, is presented to the outstanding student in radiology.

Anesthesiology Award - This award, sponsored by the student bookstore, is presented to the outstanding student in anesthesiology.

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 that 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 Aid, 11 Jesse Hall, provides information and assistance to students seeking part-time work. With questions, call (314) 882-7506.

Student Activities

CODE OF ETHICS (HONOR CODE) Honesty is an essential part of professionalism. The Code of Ethics 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 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 graduates.

Members of the student chapter of the AVMA elect a president, vice president, secretary and treasurer who, along with several members 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 led by a fourth-year member.

CLASS OFFICERS Annually, each class elects a president, vice president, secretary-treasurer and a class representative. Each class president 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. Spouses of faculty members serve as sponsors of the group, which meets monthly.

PREVETERINARY MEDICINE CLUB Students engaged in preveterinary medical study qualify to join this club. A faculty member acts as adviser. At regular meetings, guest speakers discuss 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

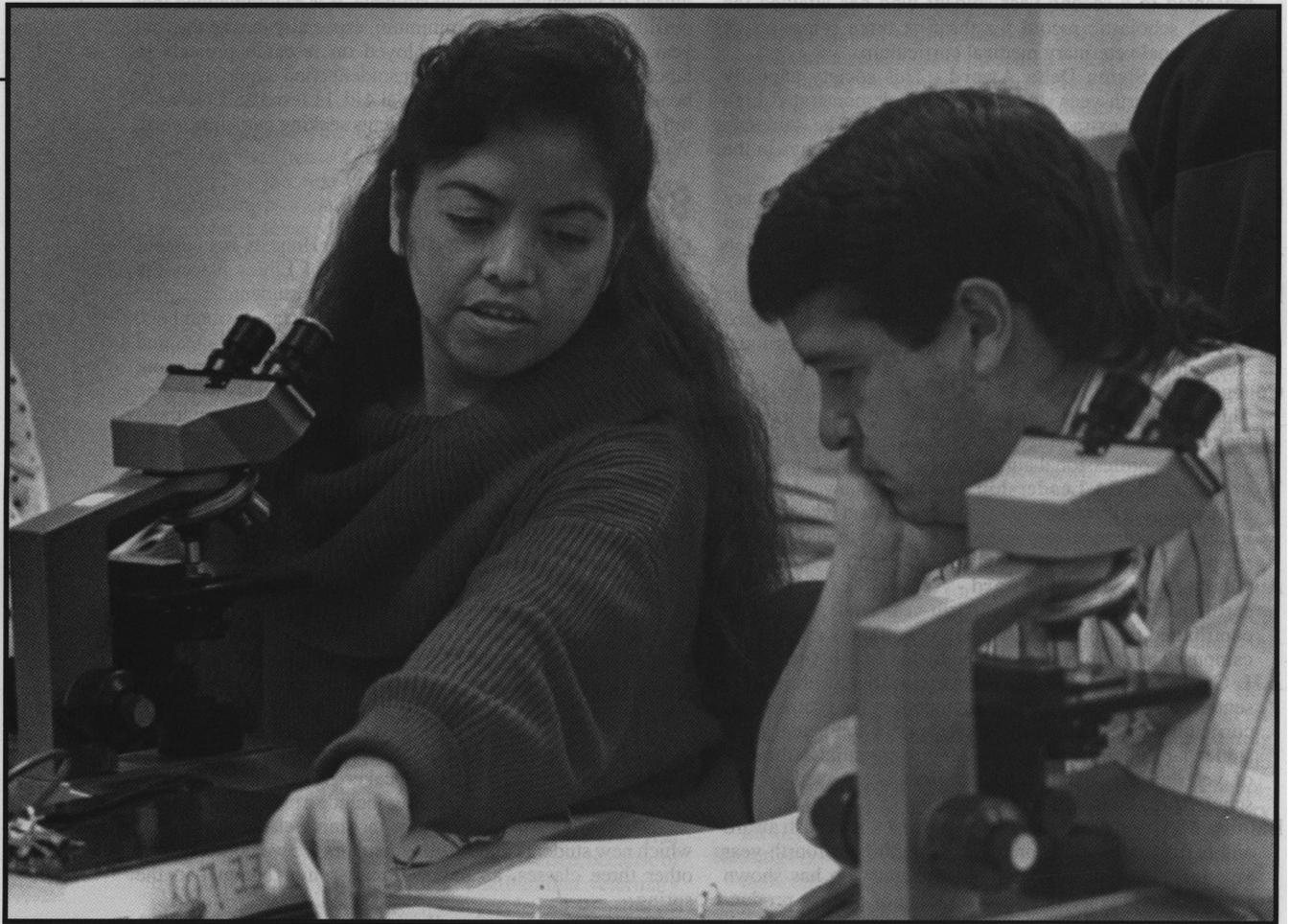
All students are members of the Missouri Students Association and have a voice in campus affairs. They are offered opportunities to fulfill their responsibilities to the student community through participation in a system of student self-government, with emphasis at the divisional level. There are social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

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, Food and Natural Resources, Veterinary Medicine, Human Environmental Sciences, and the School of Natural Resources, who have shown exceptional ability during undergraduate or graduate work and also recognizes alumni and faculty members who have rendered significant 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.



Lab manuals and lecture notes aid students in a histology laboratory, where slides of normal and diseased tissues are studied. The laboratory is a required course for all first-year veterinary medicine students.

Program and Departments

The 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, molecular biology, 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. Other areas use problem-based teaching methods. After successfully completing 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 successfully complete 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 (3)
- VBMS225V Veterinary Cellular Molecular Biology (2)

Period 2

- VBMS211V Veterinary Anatomy (2.5)
- VBMS213V Veterinary Microscopic Anatomy (1.5)
- VBMS220V Veterinary Physiology (3)
- VBMS225V Veterinary Cellular Molecular Biology (2)

Period 3

- VBMS212V Veterinary Anatomy (4)
- VBMS214V Veterinary Microscopic Anatomy (2)
- VBMS221V Veterinary Physiology (2.5)

Period 4

- VBMS212V Veterinary Anatomy (4)
- VBMS221V Veterinary Physiology (2.5)
- VM241V Veterinary Immunology (2)

SECOND YEAR (INSTRUCTIONAL PERIODS 5-9)

Period 5

- VP231V General Pathology I (3)
- VM240V Professional and Public Relations (1)
- VM242AV Veterinary Bacteriology I (3)
- VM244V Introduction to Epidemiology and Biostatistics (2)

Period 6

- VP232AV Systemic and Special Pathology I (3)
- VM242BV Veterinary Bacteriology II (3)
- VM243V Veterinary Virology (1.5)

VM245AV Veterinary Parasitology I (3)

Period 7

- VBMS226V Veterinary Pharmacology (3)
- VP232BV Veterinary Systemic & Special Pathology II (3)
- VM243V Veterinary Virology (1.5)
- VM245BV Veterinary Parasitology II (3)

Period 8

- VBMS229V Veterinary Pharmacology (2)
- VP233V Veterinary Clinical Pathology (3)
- VM248V Veterinary Meat Hygiene, Zoonosis and Preventative Medicine (2)
- VMS273V Veterinary Radiology (2)
- VMS276V Lab Animal Medicine (1.5)

THIRD AND FOURTH YEARS

Period 9

- VBMS228V Veterinary Toxicology (3)
- VMS270V Companion Animal Medicine (4)
- VMS271V Small-Animal Surgery (2)
- VMS277V Veterinary Anesthesiology (2)

Period 10

- VMS272V Small-Animal Surgery (2.5)
- VMS274V Small-Animal Medicine (2.5)
- VMS275V Food-Animal Medicine and Surgery (4)
- VMS279V Veterinary Ophthalmology (1)

Period 11

- VMS278V Equine Medicine & Surgery (3)
- VMS280V Theriogenology (3)
- VMS281V Small-Animal Critical Care (1) Elective(s), Optional (not required) (3)

Required Clinical Blocks

- VMS251V Food-Animal Medicine and Surgery I (8)
- VMS253V Small-Animal Medicine I (8)
- VMS255V Equine Medicine and Surgery I (8)
- VMS257V Small-Animal Surgery I (8)
- VMS261V Medical Services I (8)
- VP263V Diagnostic Pathology and Special Species Medicine I (10)
- VMS267V Theriogenology (4 weeks) (4) Clinical Ophthalmology (2 weeks) (2) Student Vacation (2 weeks)

CONTINUATION BLOCKS (REQUIRE SPECIAL CONSENT)

- VMS252V Food-Animal Medicine and Surgery II* (1-10)
- VMS254V Small-Animal Medicine II* (1-10)
- VMS256V Equine Medicine and Surgery II* (1-10)
- VMS258V Small-Animal Surgery II* (1-10)
- VMS260V Theriogenology II* (1-10)
- VMS262V Medical Services II* (1-10)
- VP264V Diagnostic Pathology and Special Species Medicine II* (1-10)
- VMS266V Laboratory Animal Medicine and Management II* (1-10)
- VMS268V Herd-Health Management and Nutrition II** (1-10)
- VM270V 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 GPA in the required professional curriculum is less than 2.0 will be placed on academic



The College of Veterinary Medicine's food-animal clinic provides herd-health services to cattle owners throughout Missouri.

probation. Probation must be removed by the end of the next two successive grading periods. Any student whose term GPA 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 that such lectures, demonstrations, exercises and experiences using live animals, cadavers or clinical patients 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 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 versatility of the veterinary profession permits its members to work in a variety of research areas. Some areas investigated include: infectious and noninfectious 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 associations and other groups.

RESIDENCY PROGRAMS Residencies are available in small-animal internal medicine, small-animal surgery, equine medicine ophthalmology, anesthesiology, radiology, toxicology, pathology, clinical pathology, theriogenology and neurology.

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 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. Students are urged to consult with appropriate faculty about prerequisites and a special degree program.

DEPARTMENTS Veterinary Biomedical Sciences

PROFESSIONAL PROGRAM During the first year, students in veterinary medicine study the gross and microscopic anatomy of food-producing animals, companion animals and selected laboratory animals. They study normal functions of cells, tissues, organs and body systems in physiology and in cellular and molecular biology. 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 or 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 Graduate 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 and Neurobiology in the 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.

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

Graduate students in veterinary physiology survey knowledge of normal function in animals and become familiar with research in the field. Work for the PhD degree in veterinary physiology can be accomplished in the department.

Individuals interested in doctoral research should consult and work with faculty members in the department who hold doctoral faculty appointments in the Graduate School.

Veterinary Microbiology

PROFESSIONAL PROGRAM Courses offered in the department provide 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 autotutorial 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 Graduate Catalog and in a brochure provided through the departmental office.

Veterinary Pathology

PROFESSIONAL PROGRAM The primary function of the veterinary pathology department is to teach professional courses 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. Second-year veterinary medical students study general, systemic and special pathology and veterinary clinical pathology and laboratory animal medicine in lecture and laboratory courses taught by faculty in the Department of Veterinary Pathology. The extensive and varied case loads in 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 in the first semester of residence. Students should rank in the upper third of their class. Further details for requirements of the degree are listed in the Graduate Catalog available through the Graduate School, 205 Jesse Hall, University of Missouri, Columbia, Mo. 65211.

The PhD area program in pathology is staffed jointly and presented by the departments of Pathology in the School of Medicine, Veterinary Pathology in the College of Veterinary Medicine, and Plant Pathology in the College of Agriculture, Food and Natural Resources. PhD candidates may choose their research areas to take advantage of the interests and specialties of advisers in the departments. Research is conducted in areas such as 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. Two didactic blocks in the VMIII year provide instruction in clinical subjects not addressed earlier. Practical application of basic principles of medicine and surgery to diagnosis, prevention and treatment of disease in all animals presents a challenge to the student's mental and physical resources.

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 Teaching Hospital. Through the patient-care method of study, professional students are given considerable responsibility for the total health requirements of animals assigned to their care. Discussion periods, formal lectures, rounds and laboratory training guide the clinical student's progress in systematic medicine and surgery. Broad exposure to clinical practice is gained through curriculum design.

GRADUATE PROGRAM Programs 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 and acceptance to Mizzou's Graduate School are required of all applicants. A minimum of 30 hours credit from graduate courses must be completed for the master's degree. An acceptable thesis, based upon original research, is generally required for all degree candidates. Completion of degree requirements must be approved by the student's adviser, director of graduate studies and department chairman.

Veterinary Medical Diagnostic Laboratory

The Veterinary Medical Diagnostic Laboratory is interdisciplinary, with responsibility for diagnostic service, teaching, continuing education, extension and research. Two blocks of instruction titled diagnostic pathology and special species medicine I and II are offered.

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

as 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 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 25,000 accessions are received by the laboratory annually, including 12,000-13,000 necropsies, and a 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.

Various services are performed in the laboratory for 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. The laboratory is accredited by the American Association of Veterinary Laboratory Diagnosticians as a full-service veterinary medical diagnostic laboratory.

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 conduct biomedical research in universities, research centers and other institutions. The program is designed to prepare trainees for certification by the American College of Laboratory Animal Medicine 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 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 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 and the Dalton Research Center assist with the program.

Veterinary Medical Extension and Continuing Education

University Extension (MU) serves the people and institutions of the state. As part of this division, the extension activities in the College of Veterinary Medicine are planned by the director of continuing education and other full- and part-time staff veterinarians.

Two principal objectives of veterinary medical continuing education are continuing professional training for veterinarians and cooperative extension activities. The first increases the professional competence of veterinarians and improves the quality of veterinary medicine offered to clients in preventing and controlling 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 the 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 also are 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 area and state extension specialists. Participants are encouraged to ask questions and to relate their experiences and problems. Local practicing veterinarians also are invited to attend and participate in these programs.

Statement of Courses

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 (6)**. Instructional periods 1 and 2. Prerequisite: enrollment in the College of Veterinary Medicine.
- 221V — **Veterinary Physiology (5)**. Instructional periods 3 and 4. Continuation of 220V. Prerequisite: same as for 220V.
- 222 — **Fundamentals of Animal Physiology (3)**. For students not enrolled in the professional veterinary medicine curriculum. w.
- 225V — **Veterinary Cellular Molecular Biology (4)**. 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 — **Historical 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)**.
- 328 — **Principles of Toxicology (3)**. Prerequisite: biochemistry and instructor's consent. f.
- 400 — **Problems (cr. arr.)**
- 405 — **Membrane Structure and Function (3)**. Prerequisite: Biochemistry 272 or equivalent and instructor's consent.
- 409 — **Advanced Microscopic Anatomy (cr. arr.)**. Prerequisite: graduate standing and instructor's consent.
- 410 — **Seminar (1)**. Prerequisite: departmental consent.
- 418 — **Correlative Neuroanatomy (4)**. Prerequisite: graduate standing and instructor's consent.
- 420 — **Veterinary Physiology (5)**. Prerequisite: Biochemistry 270 and Biochemistry 272 or equivalent and instructor's consent. 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 and instructor's consent.
- 435 — **Microvascular Circulatory Function (3)**
- 450 — **Research (cr. arr.)** Consent.
- 490 — **Research (cr. arr.)** Consent.

VETERINARY MEDICINE AND SURGERY

- 200V — **Problems (cr. arr.)**
- 251V — **Food Animal Medicine and Surgery I (8)**. Six times per year.
- 252V — **Food Animal Medicine and Surgery II (1-10)**. Prerequisite: 251V.
- 253V — **Small Animal Medicine I (8)**. Six times per year.
- 254V — **Small Animal Medicine II (1-10)**. Prerequisite: 253V.
- 255V — **Equine Medicine and Surgery I (8)**. Six times per year.

- 256V — **Equine Medicine and Surgery II (1-10)**. Continuation of 255V.
- 257V — **Small Animal Surgery I (8)**. Six times a year.
- 258V — **Small Animal Surgery II (1-10)**. Prerequisite: 257V or equivalent.
- 260V — **Theriogenology II (1-10)**. Continuation of the prerequisite 267V.
- 261V — **Medical Services I (8)**. Six times a year.
- 262V — **Medical Services II (1-10)**. Continuation of 261V.
- 266V — **Laboratory Animal Medicine and Management II (1-10)**.
- 267V — **Theriogenology/Ophthalmology (6)**. Six times a year.
- 268V — **Herd Health Management and Nutrition II (1-10)**. Prerequisite: 251V and 259V and VMIV status.
- 270V — **Fundamentals of Clinical Medicine (4)**. Instructional period 9.
- 271V — **Small Animal Surgery (2)**. Instructional period 9.
- 272V — **Small Animal Surgery (2.5)**. Instructional period 10.
- 273V — **Radiology (2)**. Instructional period 8.
- 274V — **Small Animal Medicine (2.5)**. Instructional period 10.
- 275V — **Food Animal Medicine and Surgery (4)**. Instructional period 10.
- 276V — **Laboratory Animal Medicine (1.5)**. Instructional period 8.
- 277V — **Veterinary Anesthesiology (2)**. Instructional period 9.
- 278V — **Equine Medicine and Surgery (3)**. Instructional period 11.
- 279V — **Veterinary Ophthalmology (1)**. Instructional period 10.
- 280V — **Theriogenology (3)**. Instructional period 11.
- 281V — **Small Animal Critical Care (1)**. Instructional period 11.
- 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 Technique in Radiology (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

- 240V — **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.
- 244V — **Introduction to Epidemiology and Biostatistics (2)**. Instructional period 5.
- 245AV — **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.
- 248V — **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 and one in general biochemistry. f. odd years.
- 343 — **Animal Virology (4)**. Prerequisites: general microbiology, general biochemistry. f. odd years.
- 345 — **Veterinary and Human Parasitology (4)**. Prerequisites: Biological Sciences 210 or equivalent and instructor's consent. w. even years.
- 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. w. even years.
- 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. f. odd years.
- 443 — **Viral Infection and Immunity (3)**. Prerequisite: graduate standing and instructor's consent. w. even years.
- 445 — **Advanced Veterinary Parasitology (3)**. Prerequisite: one course in general parasitology and graduate standing. w. odd years.
- 446 — **Cellular Function in Immunity (2)**. Prerequisites: graduate standing and instructor's consent. f. even years.
- 447 — **Oncogenic Animal Viruses (3)**. Prerequisite: general microbiology, virology, general biochemistry and instructor's consent. f. even years.
- 448 — **Molecular Methods in Nucleic Acids (3)**. w. odd years.
- 449 — **Epidemiology of Zoonoses (3)**. (same as Family and Community Medicine 449). Prerequisite: epidemiology and medical microbiology or instructor's consent. w. even years.
- 490 — **Research (cr. arr.)**

VETERINARY PATHOLOGY

- 200 — **Problems (cr. arr.)** Prerequisite: departmental consent.
- 230 — **Animal Sanitation and Disease Prevention (3)**. f. even years.
- 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.
- 233V — **Veterinary Clinical Pathology (3)**. Instructional period 8.
- 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.
- VP356 — **Advanced studies of Poisonous Plants and Toxicology (cr. arr.)** f. even years.
- VP401 — **Topics (cr. arr.)**
- VP401 — **Topics-Intro to Scientific Photography (1)**. w. even years.
- LAM401 — **Topics (cr. arr.)**
- 410 — **Seminar (1)**. f.w.
- LAM410 — **Seminar (1)**. f.w.
- 431 — **Advanced Veterinary Pathology (1-5)**. Prerequisite: departmental consent.
- 432 — **Advanced Histopathology (1-5)**. Prerequisite: departmental consent. w. odd years.
- 433 — **Veterinary Oncology (3)**. Prerequisite: departmental consent. f. odd years.
- 434 — **Advanced Clinical Pathology (4)**. Prerequisite: departmental consent. f. even years.
- 437 — **Pathology of Laboratory Animals (4)**. (same as Laboratory Animal Medicine 437). Prerequisite: departmental consent. w. even years.
- 450 — **Research (cr. arr.)**
- 452 — **Transmission Electron Microscopy (3)**. Prerequisite: departmental consent. w.
- 453 — **Scanning Electron Microscopy (3)**. Prerequisite: departmental consent. f.
- LAM468 — **Laboratory Animal Biology (4)**. Prerequisite: departmental consent. f. odd years.
- LAM469 — **Laboratory Animal Resource Management (3)**. Prerequisite: departmental consent. w. odd years.
- LAM475 — **Methodology of Animal Experimentation (3)**. f. even years.
- 490 — **Research (cr. arr.)** Prerequisite: departmental consent.

Faculty

VETERINARY BIOMEDICAL SCIENCES

H. Richard Adams, DVM, PhD, professor and chairman; director of graduate studies; professor, pharmacology, School of Medicine; research investigator and associate director, Dalton Research Center

J. Alan Allert, DVM, instructor

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Olén Brown, PhD, professor; professor, microbiology, School of Medicine; research investigator, Dalton Research Center

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Harold Laughlin, PhD, professor, physiology, School of Medicine; research investigator, Dalton Research Center

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Chada S. Reddy, BVSc, PhD, associate professor; associate professor, pharmacology, School of Medicine

Leona J. Rubin, PhD, assistant professor

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George E. Rottinghaus, PhD, assistant professor, veterinary diagnostic laboratory

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Esther M. Brown, PhD, professor emeritus

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Homer E. Dale, DVM, PhD, professor emeritus

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

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Harlan E. Jensen, DVM, professor emeritus

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Louis G. Tritschler, DVM, MS, professor emeritus

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Juan Aveiro, DVM, intern

Agnes Benamou, DVM, intern

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Francisco Pena, DVM, intern

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Diana K. Stuckey, DVM, resident veterinarian

Manoel A.M. Tamassia, DVM, resident veterinarian

VETERINARY MICROBIOLOGY

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Gerald M. Buening, DVM, PhD, professor and associate dean for research

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William H. Fales, MS, PhD, professor

Theodore J. Green, MS, PhD, associate professor

Robert F. Kahrs, DVM, PhD, professor and dean

Carol W. Maddox, MS, PhD, assistant 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, MS, PhD, professor

James G. Thorne, DVM, PhD, MPVM, professor

Adjunct Faculty

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E. Thomas Satalowich, DVM, adjunct professor

Faculty Emeriti

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Donald C. Blenden, DVM, MS, professor emeritus

Harold McDougle, DVM, AM, professor emeritus

VETERINARY PATHOLOGY

Joseph E. Wagner, DVM, PhD, professor and chairman

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Stan Casteel, DVM, PhD, assistant professor

Linda L. Collier, DVM, PhD, associate professor

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Margaret Miller, DVM, PhD, associate professor

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Lela K. Riley, PhD, assistant professor

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Liz Terril, DVM, instructor

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Faculty Emeriti

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Loren D. Kintner, DVM, MS, professor emeritus

Lawrence G. Morehouse, DVM, PhD, professor emeritus

Bonnard Moseley, DVM, MS, associate professor, extension veterinarian

Stuart Nelson, DVM, PhD, professor emeritus

Residents, Postdoctoral Fellows and Research Associates

Dave Besselsen, DVM

Greg Boivin, DVM

Guy Bouchard, DVM

John Bradford, DVM

Donna Clemons, DVM

Diane Cundiff, DVM

Julio Figueroa, DVM

John Fischer, DVM

Craig Franklin, DVM

Brett Hopkins, DVM

Joe Kendall, DVM

Michael Koch, DVM

Grace Lidl, DVM

Jocelyn Penner, DVM

Louis Pittman, DVM

Hisashi Shibuya, DVM

Susan Turnquist-Kreeger, DVM

Cho-Hua Wan, DVM

VETERINARY MEDICAL DIAGNOSTIC LABORATORY

Participating Faculty

Harvey S. Gossler, DVM, PhD, professor of veterinary pathology; director, veterinary medical diagnostic laboratory

Alex J. Bermudez, DVM, MS, assistant professor, veterinary pathology (avian diagnostic medicine)

Stan W. Casteel, DVM, PhD, assistant professor, veterinary pathology; diplomate ABVT

William H. Fales, PhD, associate professor, microbiology

Gayle C. Johnson, DVM, PhD, assistant professor, veterinary pathology; diplomate, ACVP

John M. Kreeger, DVM, PhD, assistant professor, veterinary pathology

Carol W. Maddox, PhD, assistant professor, veterinary microbiology

Margaret A. Miller, DVM, PhD, associate professor, veterinary pathology; diplomate, ACVP

Lanny W. Pace, DVM, PhD, assistant professor, veterinary pathology; diplomate ACVP

Audrey A. Rottinghaus, MS, instructor, veterinary microbiology (virology)

George E. Rottinghaus, PhD, associate professor, veterinary biomedical sciences (analytical chemistry)

Robert F. Solorzano, PhD, professor, veterinary microbiology (virology)

James R. Turk, DVM, PhD, associate professor, veterinary pathology; diplomate, ACVP

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Joe D. Kendall, DVM

Louis L. Pittman, DVM

Sue E. Turnquist-Kreeger, DVM



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