

MS in Biomedical Sciences with Emphasis in Comparative Medicine (post DVM)

About This Degree

The University of Missouri Comparative Medicine Program provides advanced graduate training to veterinarians who wish to pursue careers in comparative medicine. Trainees may combine one year of residency training in clinical, administrative and diagnostic laboratory animal medicine with two or more years of research training. Training is designed to prepare individuals for a variety of careers including comparative medicine research and laboratory animal medicine/ collaborative research. Students may either pursue an MS or PhD. Research opportunities are available in several areas including infectious disease, reproductive biology, genetics, metagenomics, biomedical engineering, cancer and cardiovascular physiology. Resources available include the University of Missouri Office of Animal Resources (OAR), the Laboratory of Infectious Disease Research (LIDR), Mutant Mouse, Rat and Swine Resource and Research Centers, MU's Metagenomics Center and Animal Modeling Core, and IDEXX BioAnalytics, an internationally known research animal diagnostic laboratory.

Programmatic Strengths

- The opportunity for comparative studies in a joint veterinary and human medical environment
- The multidisciplinary nature of the faculty participating in the training program
- The potential to couple training in research with residency training in laboratory animal medicine, comparative pathology, diagnostics, and training toward board certification
- Strong research resources including AAALAC-accredited research animal facilities, a full-service, internationally-recognized research animal diagnostic laboratory, a BSL-3 infectious disease research facility and NIH-funded research resource centers for mice, rats and swine
- A long history of successful training in comparative medicine

Class Size and Resources

Typically there are 10-12 postdoctoral trainees in the program at a given time. Networking and sharing of experiences and cooperation among trainees is an important factor in the success of the program.

Degree Requirements

The CMP emphasizes comparative medicine research training and includes graduate course work. The minimum number of credit hours required is 30 for the MS.

Research training is performed under an established investigator in one of several life science departments on the MU campus. Research typically deals with the application of an animal model in the investigation of human diseases or the study of naturally occurring diseases of

laboratory animals. Requirements for elective course work, residency and teaching experience are determined with the student's advisory committee. Trainees also participate in teaching and instructional programs offered to veterinary students and research personnel.

The five required core courses for this program are listed below. Trainees also participate in weekly seminar and rounds. Elective courses can be taken to supplement the trainee's interests.

LAB_AN 9468	Laboratory Animal Biology	4
LAB_AN 9437	Pathology of Laboratory Animals	4
LAB_AN 9469	Laboratory Animal Resource Management	4
LAB_AN 9476	Grant and Manuscript Writing for Biomedical Researchers	3
BIO_SC 8060	Ethical Conduct of Research	1

The MS degree requires the completion of a significant first author manuscript suitable for publication in a refereed journal, or an approved equivalent scholarly effort as judged by their MS graduate committee. For board certification eligibility, the manuscript must meet criteria established by the American College of Laboratory Animal Medicine (ACLAM).

Residency

For trainees enrolled in the combined graduate/residency program, residency rotations are performed during the first year of training and research training occurs in years two and three.

Residency rotations include:

- clinical medicine and animal resource management in the Office of Animal Resources (OAR)
- colony management, diagnostic, comparative and research pathology in the Mutant Mouse Resource & Research Center (MMRRC) and Rat Resource and Research Center (RRRC)

Moving to a PhD Program

Trainees desiring to change to a PhD program have the opportunity to do so in a variety of programs including the **Pathobiology Area Program**.

Admission Criteria

- Candidates must have a DVM or VMD degree (or equivalent) from an accredited college of veterinary medicine or successful completion of the foreign equivalency examination.
- Candidate must have or be pursuing a license to practice veterinary medicine in the state of their choice. The majority of funded slots require US citizenship or permanent residency.
- Applicants to the MU CMP must first apply through the Veterinary Internship & Residency Matching Program (VIRMP). Requirements and deadlines are updated annually and can be found at <https://www.virmp.org/>
- Application to the VIRMP typically begins mid-October and ends in early December. However, PLEASE NOTE that Laboratory Animal Medicine (LAM) training programs require a deadline in early November. Deadline specifics can be found in LAM training program descriptions.
- The CMP reviews applications in mid-November and invites selected candidates for interviews in early December. For candidates invited

to interview with the MU CMP, it is highly recommended that you participate; therefore, you are encouraged to save these dates.

Conflicts for invited candidates who absolutely cannot attend the interview will be addressed on an individual basis.

- Candidates who match with the CMP through VIRMP process must then apply to the MU graduate school and thus must also meet all graduate school requirements.

Required Application Material

To the CMP Postdoctoral MS Program:

- The CMP uses the Veterinary Internship and Residency Matching Program (see above). Candidates must match through VIRMP before applying to the MU Graduate School.

To the Graduate School:

- All required Graduate School documents.

Admission Contact Information

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For more information, please visit our web page at: [http://
cmp.missouri.edu/](http://cmp.missouri.edu/)