

# COMPARATIVE MEDICINE

Courses offered by the Department of Comparative Medicine are listed under the subject code COMPMED on the Stanford Bulletin's ExploreCourses web site.

The Department of Comparative Medicine at Stanford is an academic, basic science department, the department is comprised of eleven faculty, eight of whom are veterinarians. All of our faculty members are immersed in laboratory animal science and translational research. They teach at the undergraduate, graduate, professional and post-graduate levels. Our clinical and basic science faculty welcome, review and accept student candidates for participation in research projects. The Department of Comparative Medicine was established at Stanford in 1990.

The Department's faculty are also engaged in collaborative and comparative research, with animal model expertise and programs in veterinary pathology, pain and anesthesia, rodent reproductive biology, infectious disease, cancer, bioengineering, animal welfare and neuroscience. In addition, the veterinary faculty in the Department of Comparative Medicine have oversight responsibility for the campus-wide animal research program and provide clinical service in the Veterinary Service Center. Our mission is to advance human and animal health through outstanding research, veterinary care and training.

## Master of Science in Laboratory Animal Science

This degree is designed for individuals who wish to undertake in-depth study of biomedical research focusing on animal modeling and biotechnology, laboratory animal science, organizational management and facility design, regulation and compliance, and animal welfare.

The first year involves acquiring concepts and tools through course work and research project involvement. All first- and second-year students are expected to devote 50 percent or more of their time participating in research projects. Research rotations are not required, but can be done with approval of the academic adviser or training program director. This degree requires a master's thesis project to be approved by two faculty members.

### Admissions Requirements

Applicants must have a bachelor's degree from an accredited U.S. college or University or an equivalent international institution. Applicants should have completed courses in at least two of the following areas:

- Genetics
- Molecular Biology
- Chemistry
- Physiology

Official transcripts from all postsecondary institutions where courses were attempted or completed are also required. Applicants must submit GRE scores obtained within the last five years and three letters of reference must be provided with at least one from a science professor.

### Degree Requirements:

1. At least 45 units of academic work, all of which must be in courses at or above the 100 level, 36 units of which must be at or above the 200 level.
2. At least 3 quarters of graduate research, COMPMED 399.
3. Completion of a biostatistics course.

4. Students must complete a master's thesis, which may take the following form:
  - a. Original analysis of original data
  - b. A comprehensive literature review with a meta-analysis of data or a critical reanalysis of data.
  - c. Evaluation of a methodological problem using real data
  - d. A comprehensive literature review with a grant proposal (NIH style format) for a new study to bridge a gap in the existing knowledge.
5. Participation in the Comparative Medicine journal club, and attendance at the Laboratory Animal Medicine seminar series.

## Master of Science in Laboratory Animal Science (Coterminal)

The coterminal degree program allows Stanford University undergraduates to study for a master's degree while completing their bachelor's degree(s) in the same or a different department. See the "Coterminal Degrees" section of this bulletin for additional information.

The coterminal Master of Science program follows the same program requirements as the Master of Science. The coterminal degree is available only to current Stanford undergraduates. Coterminal students are enrolled full-time and courses are taken on campus. Their added year focuses on biostatistics, the research laboratory experience, and animal modeling. The specific curriculum is tailored to the students' needs. This degree requires a written research paper to be approved by two faculty members.

Programs of at least 45 Stanford units that meet the following guidelines are normally approved:

1. Completion of the core requirements with overall GPA of 3.0.
2. Students are expected to participate regularly in Comparative Medicine journal club, and attendance at the Laboratory Animal Medicine seminar series.
3. Electives: additional courses to bring the total to 45 or more units taken at Stanford to fulfill the University's residency requirement.

### University Coterminal Requirements

Coterminal master's degree candidates are expected to complete all master's degree requirements as described in this bulletin. University requirements for the coterminal master's degree are described in the "Coterminal Master's Program (<http://exploreddegrees.stanford.edu/cotermdegrees>)" section. University requirements for the master's degree are described in the "Graduate Degrees (<http://exploreddegrees.stanford.edu/graduatedegrees/#masterstext>)" section of this bulletin.

After accepting admission to this coterminal master's degree program, students may request transfer of courses from the undergraduate to the graduate career to satisfy requirements for the master's degree. Transfer of courses to the graduate career requires review and approval of both the undergraduate and graduate programs on a case by case basis.

In this master's program, courses taken three quarters prior to the first graduate quarter, or later, are eligible for consideration for transfer to the graduate career. No courses taken prior to the first quarter of the sophomore year may be used to meet master's degree requirements.

Course transfers are not possible after the bachelor's degree has been conferred.

The University requires that the graduate adviser be assigned in the student's first graduate quarter even though the undergraduate career may still be open. The University also requires that the Master's Degree Program Proposal be completed by the student and approved by the department by the end of the student's first graduate quarter.

*Chair:* Sherril Green

*Professors:* Donna M. Bouley, Paul Buckmaster, Sherril Green, Shaul Hestrin

*Associate Professors:* Corinna Darian-Smith, Stephen Felt, Joseph Garner

*Assistant Professors:* Megan Albertelli, Jennifer Johns, Claude Nagamine, Cholawat Pacharinsak

*Courtesy Professor:* Hannes Vogel

*CourtesyAssociate Professor:* Mehrdad Shamloo