

MOLECULAR AND INTEGRATIVE PHYSIOLOGY GRADUATE PROGRAM

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Program Overview

A strength of the Graduate Program in Molecular and Integrative Physiology is the focus on integrative genomics, which uses molecular genetics and cell biology to examine the physiologic function of genes in isolated cell systems and intact animals. Understanding experimental approaches to the study of functional biology will be critical in the post genome era where an emphasis will be on understanding the integrative function of the myriad of genes that have been identified. The faculty is engaged in advanced research in a wide spectrum of topics. Critical thinking and modern scientific techniques are learned in a highly interactive and supportive environment. The average time to complete a Ph.D. is five years.

Teaching Requirements

Physiology graduate students serve as teaching assistants (TA) in an undergraduate physiology class (PHYSIOL 201). Instruction in teaching methods is provided in a required class (PHYSIOL 615) taken while teaching.

Course Requirements

An emphasis on professional skill building in courses includes critical thinking, poster presentation, scientific speaking, grant writing, and teaching.

Molecular Genetics (HG 541) <i>or</i> Protein Biochemistry (BCHM 550)	3 credits each
Cellular Physiology (PHYSIOL 576, 577, 578) (Three modules)	1 credit each
Systems Physiology (PHYSIOL 510)	4 credits
Elective (<i>Choose one</i> : Integrative Genomics (PHYSIOL 555); Reproductive Physiology (PHYSIOL 541); Neurophysiology (PHYSIOL 693))	3 or 4 credits
Physiology Student Seminar (PHYSIOL 606) (Two semesters required)	1 credit each
Techniques in Physiology Instruction (PHYSIOL 615)	2 credits

Preliminary Exam Format

The prelim is taken in the second year on a topic of the student's choice. It can be identical to the student's thesis work, and is submitted in the form of a shortened version of an NIH grant application. The student gives a public seminar presentation of the proposal and then defends in front of a faculty committee chosen for each student.

Funding

Students are funded until they become candidates via Departmental funds or the Cellular and Molecular Approaches to Systems and Integrative Biology Training Grant; and in subsequent years, by their mentors' research grant or other fellowships.

Career Opportunities

Individuals with a Ph.D. in Molecular and Integrative Physiology have expanding opportunities for employment. Understanding how to examine gene function in isolated cell systems and in whole animals places physiology graduates in good standing for jobs in academics, research, and industry.

Special Events

Annual Research Forum (oral and poster presentations)
Center for Integrative Genomics Symposium
Regular lunches with visiting seminar speakers

Fall picnic
Holiday party
Spring and Summer softball