

Graduate Program in Physiology and Integrative Biology PhD Degree Learning Goals and Assessment

The doctoral program in Physiology and Integrative Biology trains students at the highest level to assume leadership roles in studies of physiology at organism, system, organ, cell and molecular levels.

Learning Goal 1 for Students: Attain marked ability, scholarship, research and leadership skills concerning physiology and integrative biology

Assessment of student achievement of Goal 1:

- Grades in graduate courses
- Qualifying examinations assessing depth and breadth of knowledge
- Review by faculty of student progress with close advising and mentoring
- Placement in positions and careers that require ability and scholarship in biology, particularly in aspects of molecular endocrinology, cardiovascular research, cancer biology, membrane structure and signal transduction, host-microbial interaction and the physiological bases of diseases.

Role of the program in helping students to achieve Goal 1:

- Close advising to assure that students are being prepared in a coherent and academically rigorous fashion
- Effective monitoring of student progress
 - Includes annual review on research progress from both the student and the student's advisory committee
- Evaluations of teaching effectiveness of instructors in graduate courses
 - If effectiveness is below expectations, work with instructors to improve effectiveness
- Periodic review of curricular offerings and assessment tools
 - By program faculty
 - In consultation with the office of the dean of the graduate school and/or the unit dean

Learning Goal 2 for Students: Engage in and conduct original research

Assessment of graduate student achievement of Goal 2:

- Preparation of and defense of Ph.D. dissertation proposal
- Assessment of quality of Ph.D. dissertation:
 - Public defense of dissertation
 - Critical reading of dissertation by committee of graduate faculty members and a committee member outside of the PIB graduate program.
 - Submission and acceptance of peer-reviewed articles and conference papers based on the dissertation
- Achievement of students as evidenced by professional placements, selection for conference presentations, peer-reviewed publications and individual grant attainment

Role of the graduate program in helping students achieve Goal 2:

- Provide early introduction to research methods and opportunities for research

- Provide opportunities to present research and receive feedback
- Maintain adequate funding levels through the research phase 2
- Provide comprehensive advising and assist in the identification of mentors

Learning Goal 3 for Students: Prepare to be professionals in careers that require training at the highest levels in biology, particularly in aspects of molecular endocrinology, cardiovascular research, cancer biology, membrane structure and signal transduction, host-microbial interaction and the physiological bases of diseases.

Assessment of graduate student achievement of Goal 3:

- Review evidence of papers presented, publications and professional networking
- Evaluations of teaching effectiveness of graduate student instructors
- Collection of placement data
- Review by external advisory committees, both inside of and external to the academy.
- Survey alumni/ae

Role of the program in helping students achieve Goal 3:

- Encourage participation in professional development programs in interview skills, presentation skills, development of CVs, use of research tools, training in the responsible conduct of research, and proposal writing
- Host discipline-specific training when appropriate
- Teach students how to do assessments in their future professional capacities
- Provide flexible options for students with interdisciplinary interests related to physiology
- Develop or enhance programs related to job and networking skills, including activity in professional societies and preparation for necessary certifications
- Acquaint students with non-academic career opportunities

The leadership of the PIB program will regularly review the structure and content of the program and the feedback received from assessments and surveys. These reviews will be used to provide the best possible education to students in order to meet the needs for highly trained individuals in physiology, particularly in aspects of molecular endocrinology, cardiovascular research, cancer biology, membrane structure and signal transduction, host-microbial interaction and the physiological bases of diseases.