BIOLOGICAL SCIENCES - INTEGRATIVE PHYSIOLOGY AND NEUROBIOLOGY - PH.D.

College of Sciences and Humanities
Department of Biological Sciences
www.kent.edu/biology/graduate

About This Program

Explore how the body's systems integrate — from neural signaling to whole-organism function — while conducting original, high-impact research in physiology and neurobiology. This Ph.D. program combines advanced coursework with intensive laboratory and collaborative investigation, preparing you to design and lead innovative scientific studies. Graduating with deep expertise in experimental design, data analysis and interdisciplinary science, you'll be ready for leadership roles in academia, biomedical research and beyond. Read more...

Contact Information

- **Oscar Rocha** | bscigrad@kent.edu | 330-672-2297
- Connect with an Admissions Counselor

Program Delivery

- **Delivery:**
  - In person
- **Location:**
  - Kent Campus

Examples of Possible Careers and Salaries*

Biological scientists, all other

- 2.2% slower than the average
- 44,700 number of jobs
- $85,290 potential earnings

Biological science teachers, postsecondary

- 9.3% much faster than the average
- 64,700 number of jobs
- $85,600 potential earnings

Medical scientists, except epidemiologists

- 6.1% faster than the average
- 138,300 number of jobs
- $91,510 potential earnings

* Source of occupation titles and labor data comes from the U.S. Bureau of Labor Statistics' Occupational Outlook Handbook. Data comprises projected percent change in employment over the next 10 years; nation-wide employment numbers; and the yearly median wage at which half of the workers in the occupation earned more than that amount and half earned less.

For more information about graduate admissions, visit the graduate admission website. For more information on international admissions, visit the international admission website.

Admission Requirements

- Bachelor's degree or higher from an accredited college or university in the natural sciences
- Strong background in biology and related subjects such as chemistry and mathematics[1]
- Minimum 2.750 GPA on a 4.000-point scale
- Official transcript(s) - copies of official transcripts can be submitted for initial review of application
- Résumé or curriculum vitae
- Personal statement that clearly explains why the applicant wishes to pursue an advanced degree and describes research experience and interest; statement must include a list of potential faculty mentors
- Three letters of recommendation that comment on chance of success in an advanced degree program, with minimum one from someone who can comment on research aptitude
- English language proficiency - all international students must provide proof of English language proficiency (unless they meet specific exceptions to waive) by earning one of the following:[2]
  - Minimum 94 TOEFL iBT score
  - Minimum 7.0 IELTS score
  - Minimum 65 PTE score
  - Minimum 120 DET score

[1] Student deficiencies in these areas at the time of admission shall be rectified during the first year of graduate study.

[2] International applicants who do not meet the above test scores will not be considered for admission.

Application Deadlines

- **Fall Semester**
  - Priority deadline: November 15

All application materials (including applicable fee, transcripts, recommendation letters, etc.) submitted by this deadline will receive the strongest consideration for admission.

Program Requirements

Major Requirements

Code	Title	Credit Hours
Major Requirements		
BSCI 70104	BIOLOGICAL STATISTICS	4
BSCI 70184	RESPONSIBLE CONDUCT IN RESEARCH AND TEACHING-BIOLOGICAL SCIENCES [1]	2
BSCI 70191	SEMINAR IN BIOLOGY (taken 2-4 times)	2-4
or BSCI 70491	SEMINAR IN PHYSIOLOGY	
Major Electives, choose from the following		20-52
BMS 70462	NEUROBIOLOGY: SYSTEMS AND BEHAVIOR	
BMS 70729	CELLULAR AND MOLECULAR NEUROSCIENCE	
Any Biological Sciences (BSCI) Doctoral Courses (70000 level or higher)		
Other graduate courses as approved by guidance committee		
Culminating Requirement		

BSCI 80199	DISSERTATION I [2]	30
Minimum Total Credit Hours for Post-Baccalaureate Students		**90**
Minimum Total Credit Hours for Post-Master's Students		**60**

1 Students are required to enroll in BSCI 70184 their first semester (or the following fall semester for those starting their studies in the spring semester).

2 Upon admission to candidacy, students must register for BSCI 80199 for a total of 30 hours. It is expected that doctoral candidates will continuously register for BSCI 80199, and thereafter BSCI 80299, each semester, until all requirements for the degree have been met. Credit hours for BSCI 80299 do not count toward the degree. Candidates will present the results of their research in a defense open to students and faculty, at which the dissertation will be presented and defended before the dissertation committee.

Graduation Requirements

Minimum Major GPA	Minimum Overall GPA
-	3.000

- Post-master's students must complete a minimum of 30 credit hours prior to enrolling in BSCI 80199. They should consult with their guidance committee to determine how many courses are required beyond BSCI 80198.
- Students are required to present at least one departmental seminar about their work.

Candidacy for the Degree

Candidacy Exams: Students are admitted to doctoral candidacy following successful completion of both written and oral candidacy examinations. These exams are based on prior coursework and coursework taken in this graduate program as determined by students' academic guidance committee, which must consist of at least three eligible faculty members. The advisor(s) and a majority of members of the guidance committee must be members of the appropriate graduate program. This committee is responsible for determining the student's academic curriculum and for administering the candidacy exams.

Prospectus: Following completion of the candidacy exam, doctoral students must successfully prepare, present and defend a formal prospectus of the research project before their dissertation committee.

Dissertation and Final Defense: Doctoral candidates must complete a dissertation. It is expected that candidates will present the results of their research in a defense open to students and faculty, during which they will present and defend their dissertation before their dissertation committee, with not more than one negative vote, in order to be recommended to the department and College of Sciences and Humanities for degree conferral.

Program Learning Outcomes

Graduates of this program will be able to:

1. Synthesize complex biological theories and empirical findings in physiology and neurobiology beyond the master's level.
2. Formulate and test novel hypotheses using advanced research techniques.
3. Produce original research that contributes new knowledge to the biological sciences and defend findings.
4. Disseminate scientific research through professional presentations and publications for diverse audiences with colleagues as well as with those outside their research field.

Full Description

The Ph.D. degree in Biological Sciences - Integrative Physiology and Neurobiology is the study of a broad range of topics, including endocrinology, neuroscience, immunology, reproductive biology and other regulatory systems. Students have access to resources for physiological research, including a vivarium, tissue culture facility, confocal microscope/visualization facility, laser capture microscope, genomics and proteomics facilities.