

David S. Olton Behavioral Biology Program

The Behavioral Biology Program offers a specialized natural sciences area major (see page 46) for undergraduates wishing to study the natural and social sciences in relation to human and animal behavior. The program begins with the fundamental concepts of both the natural sciences and the social sciences. Then the interface between these two areas is explored through specialized courses and electives, as well as through additional study emphasizing a particular subject. Courses provide a broadly based yet integrated education focused in the field of behavioral biology, and are taught by instructors from the School of Arts and Sciences, the School of Medicine, and the Bloomberg School of Public Health.

The interaction between behavior and biology takes place in both directions. On the one hand, biology influences behavior. For example, psychopharmacology has demonstrated the importance of neurochemical substances in the brain, and sociobiology has emphasized the role of genetic factors in behavior. On the other hand, behavior also influences biology. An individual's perception and reaction to life events can have substantial effects on hormonal and physiological functions. In recognizing both of these interactions, behavioral biology seeks to establish a greater understanding of them through its interdisciplinary organization. The interdisciplinary characteristics of the behavioral biology major provide excellent preparation for postgraduate work in a variety of fields, including law and medicine. For those interested in the health professions, behavioral biology can be integrated into a premedical curriculum, providing a broad, humanistic perspective. For those who wish to pursue scientific careers in the neurosciences, especially psycho-pharmacology or behavioral neuroscience/physiological psychology, the program provides the appropriate preparation. It is also a major that students interested in the fields of organismal or integrative biology should consider.

Program and Affiliated Faculty

Gregory F. Ball, Professor (Director), Psychological and Brain Sciences.

Eric Fortune, Assistant Professor, Psychological and Brain Sciences.

Linda Gorman, Lecturer, Psychological and Brain Sciences.

Peter Holland, Professor, Psychological and Brain Sciences; Co-Director, Behavioral Biology.

Chris Kraft, Lecturer, Johns Hopkins Center for Marital & Sexual Health, Sexual Behaviors Consultation Unit, Johns Hopkins Medical Institutions.

Amy Wisniewski, Lecturer, Department of Pediatrics, Division of Pediatric Endocrinology, Johns Hopkins School of Medicine.

Undergraduate Program

The core program of the behavioral biology major provides breadth and background in five fundamental areas: (a) physics, chemistry, mathematics; (b) biology; (c) psychology, anthropology, sociology; (d) neuroscience; (e) history of science. In addition, students fulfill the requirements for the natural sciences area major. The exact courses to be taken are determined by the student in conjunction with the program director. Students should note that the university does not permit a double major in an area major and a related discipline. Only courses that fulfill the lower-level distribution requirements (15 H and S credits) may be used to fulfill the requirements of a second major or minor, and the second program must be outside of the natural sciences. Behavioral biology majors wishing to pursue a second major or a minor must first obtain the approval of the assistant dean.

Hopkins undergraduates may enter the Behavioral Biology Program at any time, provided all requirements can be completed before graduation. The program director, Dr. Gregory Ball, coordinates undergraduate advising for the program and should be consulted prior to declaring the major. Additional information regarding the Behavioral Biology Program is available through Aaron Williams, Program Coordinator, 204 Ames Hall, and on the Web at <http://behavioralbiology.jhu.edu>.

This curriculum is being reviewed. Please consult our website for the most recent updates.

Requirements for the B.A. Degree

- 030.101 and 030.105 Introductory Chemistry I and Lab
- *Either* 030.205 Organic Chemistry I *or* 030.204 Introductory Intermediate Chemistry II
- *Either* 030.225 Organic Chemistry Lab *or* 030.106 Introductory Chemistry Lab II
- 171.101 (or 171.103) and 173.111 General Physics I and Lab
- 171.102 (or 171.104) and 173.112 General Physics II and Lab
- 110.106 (or 110.108) Calculus I

- 110.107 (or 110.109) Calculus II
- 020.151 and 020.153 General Biology I and Lab
- 020.152 and 020.154 General Biology II and Lab
- 290.490 Senior Seminar in behavioral Biology (Required beginning with the class of 2008)
- Twelve additional credits of science and mathematics courses at any level
- Fifteen credits of science, mathematics, and psychology courses at 300-level or above, divided among at most two science departments and psychology
- A foreign language through the first year
- Fifteen credits of humanities and social science courses at any level

- Fifteen credits of humanities and social science courses at 300-level or above, divided among at most three departments
- Fifteen credits of electives at any level, in any department

The following courses must be included among those taken to fulfill the above requirements:

- 200.141 Physiological Psychology
- 200.146 Animal Behavior
- 080.101 Topics in Neuroscience
- 080.205 Systems Neuroscience
- One History of Science course
- Nine credits (total) in Anthropology, Sociology, and/or Social/Developmental Psychology

Courses

290.420 (S) Origins of Human Sexual Orientation and Variation

This course examines the historical and current theories of sexual orientation and sexual variation development. Sexual variations encompass sexual behavior that falls outside traditional heterosexual coital sexual activity. This course looks at various types of sexual variations, also known as sexual paraphilias. Sexual paraphilias can include sexual sadism/masochism, fetishism, voyeurism, pedophilia, and exhibitionism. This course examines the biological, psychological, and social contributing factors that influence the development of sexual orientations and variations along with treatment and modification of problematic sexual behaviors.

Kraft 3 credits

290.490 (N) Senior Seminar in Behavioral Biology

This course considers Great Ideas across the scope of Behavioral Biology, and includes discussion of classic and cutting edge articles in the original literature. Grades are

based on student presentations and weekly written reactions to assigned articles. This course serves as a capstone course for senior Behavioral Biology majors.

Holland 3 credits

360.236 Tropical Biology and Ecology in Ecuador and the Galapagos Islands

This course is an introductory field tropical biology course held in Ecuador and on the Galapagos Islands. The course concentrates on the flora and fauna of the Amazon rain forest, Ecuador, and the Galapagos Islands. Special attention is given to the consideration of the behavioral adaptations exhibited by various animal taxa. Final grade is based on a field notebook that the student keeps and a final paper due late January. There are no prerequisites other than a valid passport and approval of instructors. Spanish-speaking students are encouraged to apply. No S/U. Students are selected on a competitive basis by the instructors. Application required.

Staff 3 credits intersession