

Biopsychology

Academic Learning Compact

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*Biopsychology sits at the interface of Biology and Psychology. It uses principles of evolution, genetics, physiology, neurobiology, and endocrinology to explain behavior, cognition, learning, perception, memory, attention, emotion, motivation, mental disorders, and other areas of the psychology of whole organisms. Hence, students in this area integrate information from these areas of study. Common paths for students who graduate in biopsychology include animal training, veterinary school, graduate school in biology or psychology, zoo or aquarium technicians or managers, animal lab technicians, or medical school.

*Typically, a student concentrating in Biopsychology emphasizes biology or psychology but takes a significant number of courses in the second discipline. The AOC requires 12 courses and activities. While some of these are specific courses, students also have the flexibility to make choices based on their needs. Course choices should provide the student with the skill sets most relevant for doing their own research work in their area of interest, typically animal behavior and cognition, sensation and perception, neuroscience, &/or neuroendocrinology. Students work with Biopsychology faculty to determine their specific course of study. The requirements are: (1) Foundations of Biology I or II (I preferred if whole animal-oriented, II preferred if neuro-oriented), (2) Introductory Psychology (animal, endocrine, or neuro-oriented preferred), (3) Biological Psychology, (4) Statistics (ask for direction based on your path), (5) Research Methods in an appropriate area (psychology, biology), (6) a lab course in an appropriate area (likely with your probable thesis sponsor), (7) an internship/REU/activity (on- or off-campus) in a relevant area, (8) one (or more) intermediate elective (Cognitive Psychology, Behavioral Endocrinology, Neurobiology), (9-11) 3 more advanced/intermediate electives (whole-animal-oriented examples: Comparative Cognition, Animal Behavior, Goldfish Learning Lab, Invertebrate Zoology, Wellbeing of Humans and Other Animals courses; neuro-oriented examples: Cognitive Neuroscience, Neurobiology, Psychobiology of Sport and Exercise, Lab in Comparative Brain Connectivity), and (12) a thesis-oriented seminar or tutorial.

***Representative Senior Theses:**

- Optimal Metacontrast Masking of Chromatic Stimuli with and without Luminance Cues
- Sex and Age-based Differences in the Hunting Behaviors of Schizocosa Spiders (*Araneae: Lycosidae*)
- Whistle Production Rates in a Group of Male Bottlenose Dolphins (*Tursiops truncatus*) Over Changes in Composition

- Tool Use in River Otters (*Lutra Canadensis*)
- Vocal Productions of Rhythms by the Bottlenose Dolphin (*Tursiops truncatus*)

(*These sections are also the Catalog description.)

Measures to track student progress:

Beginning and continuing students in courses are evaluated on the basis of homework assignments, exams, lab reports, and participation in class discussions. Evaluative comments are summarized at the end of each semester in a narrative course evaluation. Two faculty members review all aspects of a student's previous work and the student's proposed plan of additional work in the fifth term before a student is allowed to declare Biopsychology as the area of concentration. Three faculty members review and approve students' progress toward meeting the requirements for a Biopsychology area of concentration when they submit a Thesis Prospectus in their sixth term.

Specific measures to demonstrate each graduate's competencies:

All students with a concentration in Biopsychology develop and implement a research thesis or project under the direct supervision of a member of the faculty and defend that research project or thesis in a public oral baccalaureate exam. Theses and projects are judged according to the comprehensiveness of the research, the strength and originality of the interpretation, and the clarity and elegance of the writing style. Performance on the oral exam is judged by how well the student presents the thesis research in a prepared talk, responds to questions, demonstrates knowledge of the field, and defends their own interpretation.

Biopsychology Student Learning Outcomes

- Gain and integrate information from neuroendocrine, neuroscience, biological, comparative, and psychological scientific literature
- Comprehend, analyze and critique contemporary scientific literature in biopsychology
- Develop hypotheses related to a scientific question in biopsychology, and design experiments to test the hypotheses
- Analyze, interpret, and present quantitative data in biopsychology
- Clearly communicate scientific information in both written and oral forms