

Neuroscience and Animal Behavior



EMORY
LANEY
GRADUATE
SCHOOL



The program in Neuroscience and Animal Behavior (NAB) studies behavior as a biological phenomenon, approaching topics within the areas of neuroscience, physiological psychology, behavioral neuroendocrinology, cognition, and ethology as a unified entity.

Our program integrates:

- research in neuroscience and physiological psychology exploring brain-behavior relationships modulating behavior and cognition;
- research on neuroendocrine influences on behavior and cognition; and
- ethological studies investigating how animals function in their natural environment and evolutionary factors influencing individual adaptations.

The blend of these concerns represents our conviction that a comprehensive understanding of behavior requires knowledge of the why and how of natural behavior, the manner in which the current environment influences behavior, and the neural and physiological processes underlying both. Our research is conducted primarily with animal subjects, although human studies are also performed by some of our faculty, and we seek to apply findings to understanding human as well as animal behavior and cognition.

Students with strong interests in the neural and evolutionary bases of behavior, animal cognition, behavioral endocrinology, sensory processes, social behavior and communication, and the interrelations between these areas are especially encouraged to apply for admission.

Research Environment

Our program is strongly oriented towards laboratory and field research. Students are engaged in research starting in their first year and throughout their entire period of residence. We employ a mentor model of student recruitment where students join a specific laboratory. Contacting faculty whose work interests you is strongly recommended.

Our primary research facilities are the laboratories of the NAB faculty, located on the Emory campus in the Rollins Research Building and at the Yerkes National Primate Research Center's Main Station. In addition, research on social groups of primates is conducted at the Yerkes Field Station, 30 miles from the Emory campus.

DISCOVER

the unexpected

Emory's Thriving Research Community

Faculty and students in our program collaborate with researchers at a host of centers and institutions at Emory and beyond. Among the more important are:

- **THE YERKES NATIONAL PRIMATE RESEARCH CENTER** is one of nine National Institutes of Health-designated national primate research centers. Yerkes maintains a 115 acre field station 30 miles from the Emory campus that is home to almost 2000 monkeys and apes housed in semi-natural social groups. Yerkes is home to the **LIVING LINKS CENTER**, studying human evolution by investigating our close genetic, anatomical, cognitive, and behavioral similarities with great apes.
- **THE CENTER FOR BEHAVIORAL NEUROSCIENCE (CBN)**, a National Science Foundation Science and Technology Center, is an award-winning, interdisciplinary research consortium composed of more than 100 neuroscientists spanning seven institutions in the metro Atlanta area.
- **THE DEPARTMENT OF PSYCHIATRY AND BEHAVIORAL SCIENCES** at the Emory School of Medicine is home to a number of research programs that intersect with the work of NAB faculty, such as the Molecular Neurology of Fear lab that focuses on the molecular and cellular mechanisms of fear learning.
- **EMORY'S GDBBS DOCTORAL PROGRAM IN NEUROSCIENCE (NTP)** has about 30 faculty members who conduct research in areas of behavioral neuroscience. Most NAB faculty hold joint appointments in the NTP of the GDBBS as well as NAB. Students may apply to both programs.

- **THE BIOMEDICAL IMAGING TECHNOLOGY CENTER (BITC)** is a core facility of the School of Medicine at Emory University, supporting researchers in and around the Emory community.

New Facilities

In 2009 the Department of Psychology moved into a new 100,000 sq ft building housing human labs and all graduate programs including the graduate program in Neuroscience and Animal Behavior.

The new building takes advantage of the latest approaches to teaching and research with technology seamlessly integrated into learning spaces, laboratories designed to fit faculty research needs, and informal spaces designed for interaction among faculty and students. It will include a **BRAIN IMAGING CENTER**, providing Emory scholars and students a new tool to make great strides in research involving mind-brain initiatives.

The five-story building is part of a Science Commons, located adjacent to Atwood Hall (chemistry) and a stone's throw from the Mathematics and Science Center. Find out more at www.college.emory.edu/sciencecommons.

Visitors

A multitude of other talk and seminar series on campus provide other opportunities for students to interact with eminent researchers both from outside and within Emory. The Psychology Department's Colloquium Series brings in yearly at least six scientists who are leaders in their fields to present their work to our department and to interact with our graduate students during two-day visit, and comparable series are hosted by Yerkes, the Center for Behavioral Neuroscience, and other entities.

Curriculum

Coursework

NAB students develop a course of study in consultation with their research adviser to tailor their curriculum to their individual interests as well as gain a common foundation. Required coursework consists of four core classes that survey the field of neuroscience and animal behavior and department-wide courses in statistics and in the history and philosophy of psychology.

All other coursework is drawn from a large set of electives both within and outside the Department of Psychology. These electives include topical seminars taught by NAB faculty on focal research areas as well as more advanced courses within psychology, neuroscience, biology, anthropology, and philosophy.



This curriculum encourages students to acquire breadth of understanding as well as to develop expertise and in-depth training in their chosen area of specialty.

Research

Research is the centerpiece of graduate training in the NAB program. Although our students and faculty engage in diverse research, our shared interest in the *mechanisms* of behavior sets us apart from other graduate programs of comparable scope.

Most of our students participate in a variety of research projects during their tenure in the program. Formal research requirements include writing and defending a comprehensive review paper, called the Qualifying Exam, and proposing, writing and defending a master's thesis and a dissertation.

As researchers we must also communicate our results to others in the field and beyond. An important component of our training is the weekly NAB Research Seminar in which all students and faculty participate. In the Research Seminar, faculty, students, and outside investigators present research, discuss central issues and controversies in their fields, and explore practical topics related to careers in science. In addition, a primary goal of the Research Seminar is to provide students a structured opportunity to practice formally presenting their work and ideas in a supportive atmosphere.

We strongly encourage students to attend and present their research at national and international meetings, and financial support is available to defray expenses.

Training in Teaching

Training in teaching is based on the Teaching Assistant Training and Teaching Opportunity (TATTO) Program, administered by the Laney Graduate School. The program provides a mentored introduction to teaching, where students assume progressively greater responsibilities. Training includes a three day teacher training course with faculty drawn from across the University and a Psychology teaching practicum which supports students as they begin their first teaching experiences as teaching assistants for the Psychology department's undergraduate statistics course. Following the teaching practicum and teaching assistantship, students complete a one-semester teaching associateship, teaching a lab section of the department's undergraduate experimental methods course. After completing the teaching associateship, students may apply for an appointment as a Dean's Teaching Fellow, or pursue other opportunities to serve as a teaching assistant or to teach independently.

Faculty

We currently have a core faculty of eleven. All have appointments in the Psychology department. Many of us also have joint appointments in related departments, programs, and centers.

- JOCELYNE BACHEVALIER: development of memory and emotion in primates
- MICHAEL DAVIS: neurobiology of learning, memory and stress
- FRANS DE WAAL: primate social behavior and social cognition
- DAVID EDWARDS: psychobiology of motivation, human competition
- HAROLD GOUZOULES: animal behavior, primate communication
- ROBERT HAMPTON: memory systems and cognition in primates
- JOSEPH MANNS: neurophysiology of memory
- DONNA MANEY: genetic and neuroendocrine mechanisms of communication, brain plasticity, and reproduction
- DARRYL NEILL: drugs and behavior, neurotransmitters and behavior
- HILLARY RODMAN: visual and comparative neuroscience
- KIM WALLEN: neuroendocrinology of social and sexual behavior

Visit www.psychology.emory.edu/nab/faculty.html.



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Students

We are committed to strong one-on-one mentoring relationships with graduate students. Students are typically admitted into the program as a member of a specific professor's research group. However, all faculty are readily available for consultation and discussion, and collaborations between laboratories are encouraged. We strive to understand both behavior and the brain mechanisms that underlie it; successful applicants to our program admission generally have extensive college-level coursework in neuroscience and/or animal behavior, and ideally a strong background in other basic science as well.

We typically have about 20 students in residence. Our website has information about all of them, with contact information and descriptions of their research interests. Please visit www.psychology.emory.edu/nab/students.html.

For more information on the NAB program, please explore our website, www.psychology.emory.edu/nab.

Contact Information

Questions about the program may be directed to:

Dr. Kim Wallen
NAB Program Director
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Questions about the mechanics of the application process may be directed to:

Ms. Paula Mitchell
Psychology Graduate Programs Specialist
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Requests for Additional Information:

RECRUITMENT AND ADMISSIONS

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department)
Fax: 404-727-4990

<http://www.graduateschool.emory.edu>
<http://www.psychology.emory.edu/nab>