



EMORY
LANEY
GRADUATE
SCHOOL



NATURAL AND SOCIAL SCIENCES NEUROSCIENCE AND ANIMAL BEHAVIOR

The program in Neuroscience and Animal Behavior (NAB) emphasizes behavior as a biological phenomenon, approaching topics within the areas of neuroscience, behavioral endocrinology, learning and memory, cognition, and ethology.

Faculty members and students in NAB study:

- brain-behavior relationships, particularly regarding memory, cognition and social behavior;
- neuroendocrine influences on brain, behavior and cognition;
- how animals function in their natural environment; and
- the evolution of neural and cognitive mechanisms supporting behavior.

The blend of these topics demonstrates our conviction that a comprehensive understanding of behavior requires knowledge of how cognitive, neural, and physiological processes enable organisms to adapt to their natural environments. Our research is conducted primarily with non-human animal subjects, although studies on humans are also performed by some of our faculty. 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, learning and memory, animal cognition, behavioral endocrinology, sensory processes, social behavior, communication, and the interrelations among these areas are especially encouraged to apply for admission.

RESEARCH ENVIRONMENT

Our students conduct their research in laboratories, in semi-natural settings, and in the field. 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 and training in which students join a specific laboratory. Before you apply, please contact faculty whose work interests you.

PROFESSIONAL DEVELOPMENT

The Laney Graduate School offers a range of programs that encourages students to develop their professional skills, engage with broader professional communities, and prepare for their careers.

VISIT [GS.EMORY.EDU](https://gs.emory.edu) TO LEARN MORE.

EMORY'S THRIVING RESEARCH COMMUNITY

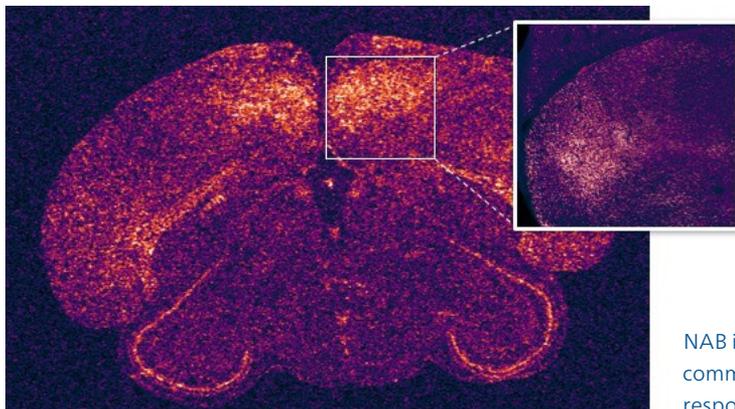
Faculty and students in our program collaborate with researchers at a host of centers and institutions at Emory and beyond. Among them are:

- **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 that is home to almost 2000 monkeys and apes housed in semi-natural social groups. Yerkes is also home to the **LIVING LINKS CENTER**, a group of researchers 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. These programs focus on the neural mechanisms underlying behavioral phenomena such as fear and affiliation.
- **EMORY'S GDBBS GRADUATE NEUROSCIENCE PROGRAM** has about 40 faculty members who conduct research in areas of behavioral neuroscience. Most NAB faculty hold joint appointments in the Neuroscience Graduate Program as well as NAB. Students may apply to both programs, and matriculation into one program does not preclude taking courses offered by the other. However, students should consider carefully which programs suit their training needs before applying.
- **NEUROIMAGING** Emory has state-of-the art facilities for neuroimaging in humans, non-human primates, dogs, and small animals. Each facility is located in close proximity to NAB laboratories.
- **ZOO ATLANTA** provides access to animal collections for behavioral research projects, and has an ongoing collaboration with NAB.

FACILITIES

The Department of Psychology occupies a 100,000 sq ft building that facilitates teaching as well as interaction among faculty and students. The five-story building is part of a Science Commons, located adjacent to Atwood Hall (chemistry) and across the street from the Mathematics and Science Center.

Our primary research facilities are the laboratories of the NAB faculty, located in the recently built Psychology building, in the O. Wayne Rollins Research Center and at the Yerkes National Primate Research Center's Main Station. Research on social groups of primates is conducted at the Yerkes Field Station, about 30 miles from the Emory campus.



NAB investigators study how the brain responds to communication signals. This photo shows neuronal responses in a female songbird listening to male song.

COLLOQUIA AND SEMINARS

A multitude of seminar series on campus provide opportunities for students to interact with eminent researchers both from outside and within Emory. The Psychology Department's Colloquium Series brings in scientists who are leaders in their fields to present their work to our department and to interact with our graduate students during two-day visits. Comparable series are hosted by Yerkes and the Neuroscience Program.

CURRICULUM

COURSEWORK

NAB students develop a course of study in consultation with their research advisers to tailor their curriculum to their individual interests and gain a basic foundation in psychological and neural science. NAB students take courses that survey the fields of neuroscience and animal behavior. Quantitative courses, including a department-wide statistics course prepare students to perform sophisticated analysis of data. Topical seminars are also offered by faculty across the department on focal research areas. Students may take advanced courses in psychology, neuroscience, genetics, biology, anthropology, or philosophy offered across the university. 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.

NAB students are eligible to apply to federally-funded T32 training programs in Mechanisms of Learning or Computational Neuroscience, which include curricula tailored to those research areas.

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 a comprehensive review paper, a qualifying exam, and proposing, writing and defending both 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. A primary goal of the Research Seminar is to provide students a structured opportunity to formally present 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 two 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. Students typically complete two teaching assistantships for undergraduate courses such as introductory psychology or statistics, and a teaching associateship, with greater responsibilities, in our experimental methods course for majors.

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. Thus, students graduate with a portfolio of teaching experience that makes them attractive on the job market.

DEGREE

The NAB program culminates in the Doctor of Philosophy (PhD) degree. We do not offer a terminal masters degree. All students in good standing are expected to continue to the PhD after receiving the masters. Note also that we currently do not offer distance learning courses or degrees. All coursework is normally completed on the Emory campus.

FACULTY

We 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
- **GREGORY BERNS:** human and canine cognitive neuroscience, fMRI
- **FRANS DE WAAL:** primate social behavior and social cognition
- **DAVID EDWARDS:** endocrine correlates of human competition and performance
- **HAROLD GOUZOULES:** animal behavior, primate communication
- **ROBERT HAMPTON:** memory, cognition and social behavior in primates
- **DONNA MANEY:** genetic and neuroendocrine mechanisms of social behavior
- **JOSEPH MANNS:** neurophysiology of memory
- **DARRYL NEILL:** drugs and behavior, neurotransmitters and behavior
- **HILLARY RODMAN:** visual and comparative neuroscience
- **KIM WALLEN:** neuroendocrinology of social and sexual behavior

Visit <http://psychology.emory.edu/home/graduate/nab/faculty.html>

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. All faculty are readily available for consultation and discussion. Beginning in the first year, each student receives formal advising and feedback on his or her work from a Faculty Advisory Committee including a least one member from another program in Psychology. Collaborations between laboratories, both within and outside Psychology, are encouraged.

Because we strive to understand both behavior and the neural mechanisms that underlie it, successful applicants to our program 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 <http://psychology.emory.edu/home/graduate/nab/students.html>

For more information on the NAB program, please explore our website, <http://psychology.emory.edu/home/graduate/nab/index.html>

CONTACT INFORMATION

Questions about the program may be directed to:
 Dr. Robert Hampton
 Program Director
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Questions about the mechanics of the application process may be directed to:
 Ms. Paula Mitchell
 Psychology Graduate Programs Academic Degree Coordinator
paula.mitchell@emory.edu



Requests for Additional Information:

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LANEY GRADUATE SCHOOL DEGREE PROGRAMS

Anthropology	<i>Genetics and Molecular Biology</i>	Biomedical Engineering	Development Practice	Health Services Research and Health Policy	Nursing
Art History	<i>Immunology and Molecular Pathogenesis</i>	Biostatistics	Economics	Hispanic Studies	Nutrition and Health Sciences
Behavioral Sciences and Health Education	<i>Microbiology and Molecular Genetics</i>	Business	English	History	Philosophy
Bioethics	<i>Molecular and Systems Pharmacology</i>	Chemistry	Environmental Health Sciences	Islamic Civilizations Studies	Physics
Biological and Biomedical Sciences	<i>Neuroscience</i>	Clinical Psychology	Environmental Sciences	Mathematics	Political Science
<i>Biochemistry, Cell and Developmental Biology</i>	<i>Population Biology, Ecology, and Evolution</i>	Cognition and Development (Psychology)	Epidemiology	MD/PhD	Religion
<i>Cancer Biology</i>		Comparative Literature	Film and Media Studies	Music	Sociology
		Computer Science and Informatics	French	Neuroscience and Animal Behavior (Psychology)	Women's, Gender, and Sexuality Studies