

## PNI faculty research interests

**Michael Berry** Neural computation in the retina

**William Bialek** Interface between physics and biology

**Matthew Botvinick** Neural foundations of human behavior

**Carlos Brody** Quantitative and behavioral neurophysiology

**Lisa Boulanger** Neuronal functions of immune molecules

**Jonathan Cohen** Neural bases of cognitive control

**Jonathan Eggenschwiler** Mouse neural development

**Lynn Enquist** Neurovirology

**Liz Gavis** Neural development and mRNA localization in *Drosophila*

**Alan Gelperin** Learning, memory and olfaction

**Asif Ghazanfar** Neurobiology of primate social agents

**Elizabeth Gould** Neurogenesis and hippocampal function

**Michael Graziano** Sensorimotor integration

**Charles Gross** Functions of the cerebral cortex in behavior

**Uri Hasson** Temporal scales of neural processing

**Bartley Hoebel** Behavioral neuroscience

**Philip Holmes** Mathematical modeling

**Barry Jacobs** Brain monoamine neurotransmitters

**Sabine Kastner** Neural mechanisms for visual perception

**Mala Murthy** Neurophysiology of olfactory and auditory perception in *Drosophila*

**Coleen Murphy** Molecular mechanisms of aging

**Yael Niv** Reinforcement learning and decision making

**Ken Norman** Neural bases of episodic memory

**Daniel Osherson** How does the brain reason?

**David Tank** Neural circuit dynamics

**Samuel Wang** Dynamics and learning in neural circuits

A unique and intensive program of study followed by advanced research in a world class Princeton laboratory.

- Pioneer new experimental techniques
- Develop cutting-edge analytical tools
- Discover how the brain works

We seek highly motivated and creative students in our efforts to understand the brain.

<http://neuroscience.princeton.edu/PhD>

For more information on our doctoral program in Neuroscience, please contact the following:

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Princeton  
Neuroscience  
Institute

PNI

Neuroscience Ph.D.

Molecular | Developmental | Behavioral

Computational | Cognitive

Neurosciences

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# Princeton Neuroscience Institute — Ph.D. Program

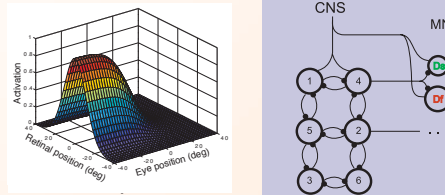
## A unique course of study

The core course in the new Princeton Neuroscience Ph.D. program is designed to give students a solid, hands-on grounding in advanced neuroscience before they specialize in their research. This in-depth course is unique in its emphasis on combining experiments and computation with lectures. All students carry out experiments themselves: from single neurons and patch clamp, to in vivo electrophysiology in behaving animals, to computational modeling, to human neurophysiology and functional MRI, this course guides and teaches students about the brain as they learn to design, perform, analyze, and critique their own experiments.



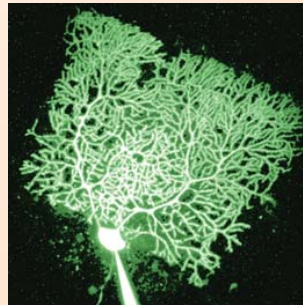
## Cutting-edge research

Coursework is followed by Ph.D. thesis research in one of the PNI faculty labs. (See overleaf for faculty listing.) Students rotate in up to three labs before choosing one in which to do their research.



## Quantitative/Computational Track

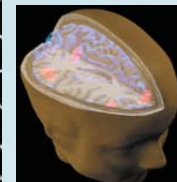
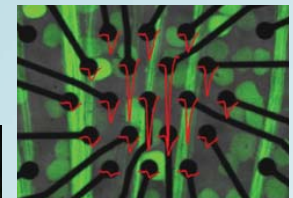
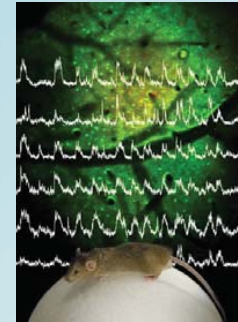
Across the board, from molecular biology to physics to psychology, and including neuroscience, Princeton research is particularly strong in theoretical and quantitative approaches. In recognition of this, a Quantitative and Computational Neuroscience track exists within the Neuroscience Ph.D. Students in this track take elective courses in quantitative disciplines, and perform PhD research in quantitative and/or computational neuroscience. Faculty within PNI and within Mathematics, Physics, Electrical Engineering, and Computer Science are part of the QCN track. Students from



quantitative fields wishing to enter neuroscience are strongly encouraged to apply to our Ph.D.

## Strong Financial Support

All admitted students receive full financial support for the duration of their Ph.D., including tuition, a competitive stipend, and health benefits. This support is made possible through a combination of funds from Princeton University, federal grants to PNI, private donations, and grants to faculty members.



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**PNI** Molecular Developmental Behavioral Computational Cognitive Neurosciences