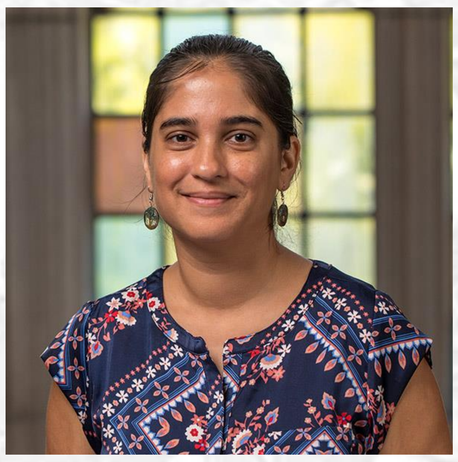
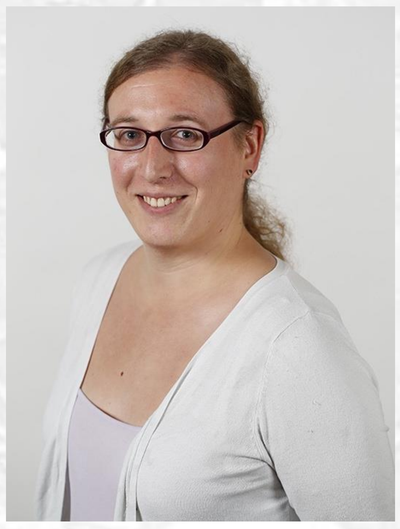
The Interdisciplinary Major in Neuroscience

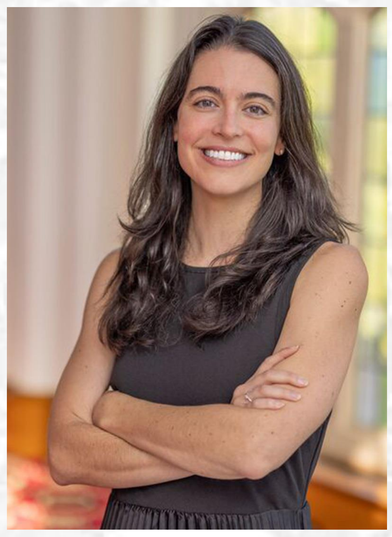
Bridging the fields of Biology, Psychology, Chemistry, and Philosophy



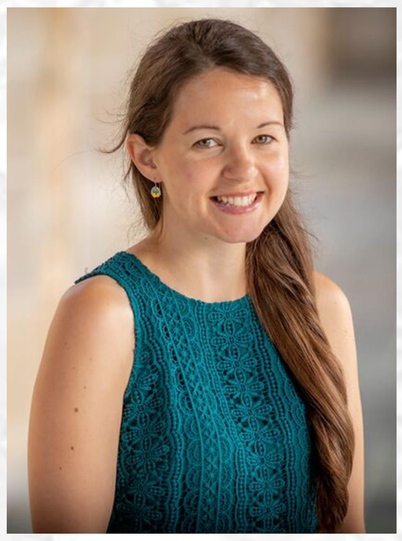
Dr. Tanushree Pandit
examines signaling mechanisms contributing to neural fate patterning and neural circuit formation during embryonic development.



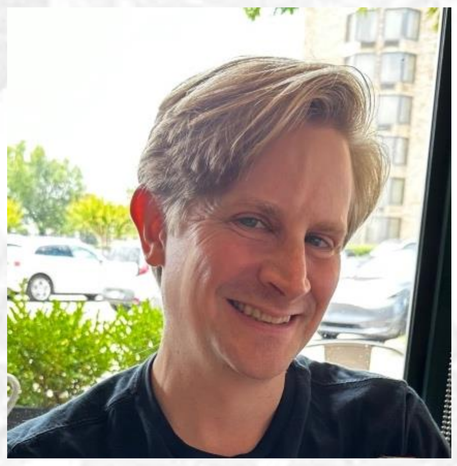
Dr. Kelly Dougherty
investigates the biophysical mechanisms of antiepileptic drug (AED) action. She uses electrophysiological techniques to understand how AEDs directly influence the ionic currents flowing across the neuronal membrane.



Dr. Cameron Ogg
uses in vivo imaging techniques to explore the effects of neuromodulation (cholinergic, noradrenergic) on flexibility in the brain and behavior



Dr. Laura Shanahan
studies the neuroscience of sleep and its behavioral consequences. She examines the reciprocal connections between sleep and sensory processing in humans.



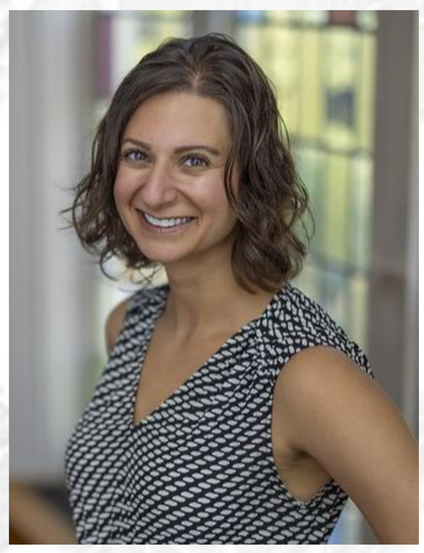
Dr. Jason Haberman
studies visual cognition and uses psychophysics to explore how the brain represents crowds of objects, such as faces. The visual system uses averages to derive information about the natural world.

Dr. Jared Milson investigates the nature of inquiry & includes investigating the nature of the norms governing psychological attitudes & speech acts associated with inquiry, developing formal & logical techniques for modeling these norms, & examining how the demands of inquiry shape the nature of scientific representation & explanation.

Neuroscience majors also get to learn with faculty who primarily teach in other departments, such as Chemistry, Philosophy, and Psychology:

Dr. Larryn Peterson

Dr. Katie White



Dr. Becky Klatzkin
examines the physiological and psychological mechanisms underlying stress-induced eating to understand why some people eat more and some people eat less when stressed.

Core Requirements *(take all)*

Chem 120&125L	Foundations of Chemistry & Lab
Biol 130&131L	Biology I & Lab
Biol 140&141L	Biology II & Lab
Psyc 150	Introduction to Psychological Science
Psyc 211 or Math 211	Statistical Methods
Neur 270	Neuroscience (prereq: Biol 130/40, or Psyc 150)
Neur 485 or 486	Senior Seminar

Depth Requirements *(take two from different categories)*

Biology (prereq: Biol 130 and 140)
Biol 376+Lab Molecular/Cellular Neuroscience
Biol 377+Lab Developmental Neuroscience

Neuroscience (prereq: Psyc 150, Biol 130, Biol140)
Neur 300 + Lab Topics in Neuroscience
Neur 319 + Lab Sensory Neurobiology

Psychology (prereq: Psyc 150)
Neur 344+Lab Neuroscience of Sleep
Neur 345+Lab Cognitive Neuroscience

Breadth Requirements *(take two, or one plus a third depth)*

Chem 411+Lab	Medicinal/Computational Chemistry (must choose Neuroscience-related independent project)
Neur 299	Topics in Neuroscience
Neur 451/452	Independent Research in Neuroscience (4 total credits required)
Neur 318	Clinical Neuroscience (prerequisite: Neur 270)
Phil 219	Foundations of Artificial Intelligence
Phil 312	Philosophy of the Cognitive Sciences
Psyc 317	Psychopathology & the Brain (prerequisite: Psyc 200)
Psyc 216	Perception
Psyc 327	Cognitive Processes (prerequisite: Psyc 150 and Psyc 211)
Psyc2xx	Memory and Memory Disorders

Electives *(take two, or substitute with extra depth or breadth courses)*

Biol 355	Animal Development (w/ lab)
Biol 321	Animal Behavior (w/ lab, F11 course)
Biol 303 or 304	Genetics (304 is w/ lab)
Biol 307	Cell Biology
Biol 325	Molecular Biology (w/ lab)
Biol 340	Animal Physiology (w/ lab)
Chem 315	Biochemistry
Chem 416	Pharmacology
Comp 141/142	Computer Science I or II
Psyc 218	Psychology of Addiction
Psyc 220	Psychology of Health
Psyc 224	Psychological Disorders
Psyc 231	Psychology of Aging
Xxxx 451/452	Independent Research (4 credits of research in another department/program as approved by the Neuroscience committee)

For more information, see the Rhodes College Neuroscience website here