NEUROSCIENCE

The Neuroscience Joint Area of Concentration (AOC) at New College enables students to learn a wide set of technical skills in the laboratory, design experiments to test ideas about the brain, and discuss and critically assess cutting edge science. Some of the course offerings include “Advanced Topics in Cognitive Neuroscience,” “Sex, Gender, Mind, and Brain,” “Neuroscience of Sport and Exercise,” and “Neuroethology”. With labs in Neurobiology, Comparative Brain Connectivity, and functional Neuroimaging, students will get hands-on experience and develop career-ready skills.

The Neuroscience faculty are scientists and scholars who study a variety of topics across different model systems—e.g., how the brains and vocal organs of frogs solve the complex task of courtship, the impact of environmental toxins on sea lion brain networks, and endocrine correlates of human social behavior. Neuroscience students have unique opportunities to work collaboratively with faculty in their labs to be a part of the ongoing science. In the process, students develop skills and experiences necessary to pursue graduate research and other careers, including the opportunity to present the results of their research at conferences and through scientific publications. Our students have had numerous internships and prestigious summer research opportunities at laboratories and research stations far and wide.

Faculty in Neuroscience

Kathleen Casto (https://www.ncf.edu/directory/kathleen-casto/), Assistant Professor of Psychology (On Leave)
Peter Cook (https://www.ncf.edu/directory/peter-cook/), Associate Professor of Psychology
Elizabeth Leininger (https://www.ncf.edu/directory/elizabeth-c-leininger/), Associate Professor of Biology (On Leave)

Requirements for the Joint AOC in Neuroscience

A minimum of six (6) academic units.

Code	Title
Introductory Neuroscience Course	
BIOL 2600	Introduction to Neuroscience*
or PSYC 3560	Biological Psychology
Intermediate and Advanced Neuroscience Courses	
Select **four** intermediate or advanced neuroscience-related courses that span at least two disciplines (such as Biology and Psychology):	
BIOL 2360	Animal Behavior
BIOL 3200	Neurobiology
BIOL 4750	Neuroethology
BIOL 3650	Sensory Biology of Fishes Lecture/Lab
BIOL 3150	Sex, Gender, Mind and Brain
PSYC 3000	Behavioral Endocrinology
PSYC 4100	Neuroscience of Sport and Exercise
PSYC 4510	Biopsychology of Sex, Gender, and Sexual Behavior
PSYC 4475	Advanced Topics in Cognitive Neuroscience
INST 2650	Dance, Brain, and Parkinson's
Neuroscience Laboratory Course	
Select **one** from the following examples:	
BIOL 3210	Neurobiology Laboratory
PSYC 4200	Laboratory in Comparative Brain Connectivity
PSYC 4115	Advanced Experimental Research and Data Analysis
Highly Recommended	
Statistics and writing-intensive coursework if not already required by primary AOC	
Optional	
Senior Thesis and Baccalaureate Exam may include neuroscience but not required	

Representative Theses in Neuroscience

- Animal Behavior Education and Anthropomorphism
- Overlapping Biopsychological Underpinnings and Brain Regions that Mediate Neurocognitive Processes Relevant to Entrepreneurship and Parenting
- Physiological Indicators of Menstrual Cycle Phase: A Two-Part Study on Developing a Method of Menstrual Cycle Phase Determination and Assessment of Menstrual Cycle Impacts on Brain Activation
- Pediatric Heavy Metal Toxicity: A Systematic Review of the Association Between In-Utero Exposure to Heavy Metals and Behavioral/Neurological Problems in Affected Children
- Case Study of Domoic Acid Toxicosis in a California Sea Lion: Diffusion Imaging Analysis of Anterior Thalamus and Connectivity
- Understanding Yourself as a Learner (UYL): An Educational Intervention to Help Students Articulate Their Learning
- An Illustrated Guide to Some of the Neuroscience of Post-Traumatic Stress Disorder
- Holding One's Own: The Impact of Body Awareness on the Experience of Embodiment and the Neural Correlates of Embodiment Integrity in the Face of Multimodal Mismatch
- Prefrontal and Auditory Cortex Activity During Music Listening in Musicians Compared to Non-Musicians
- Neuroimaging of Mild Traumatic Brain Injury