

NEUROSCIENCE

Overview

The Neuroscience Training Program and the Neuroscience Department were among the first neuroscience-focused academic centers established in the United States, dating back to 1980. Our faculty have trained over 250 PhD and MD/PhD students and 500 postdoctoral fellows in just the past ten years, partnerships that have led to fundamental discoveries in the organization of the cerebral cortex, neurotransmitter signaling, neuronal and glial cell development, and circuit function using a variety of approaches, including molecular biologic, biophysical, biochemical, neurophysiological, and anatomical strategies.

The goal of the Program is to ensure that our students obtain broad training in the neurosciences. Our curriculum spans the breadth of modern neuroscience, from molecular/cellular underpinnings to systems/ cognitive integration, and offers a rich training experience that brings students to the forefront of research in their particular area of interest, in preparation for a rewarding, independent career in the sciences.

Program Requirements

Code	Title	Credits
Neuroscience		
ME.440.800	Neuroscience Research	1 - 18
ME.440.801	Readings in Neuroscience (Journal Club)	1
	or ME.440.810 Readings In Systems Neuroscience	
ME.440.802	Current Topics in Neuroscience (Research Seminar)	1
	or AS.080.630/Bodian Seminar Series	
ME.440.811	Neuroscience Cognition I	4.5
ME.440.812	Neuroscience Cognition II	4.5
ME.440.819	Rigor, Reproducibility, and Responsibility in Science	2
ME.440.820	Circuits and Brain Disorders	2
ME.440.724	Neuroscience Career Skills	1
ME.440.823	Grant Writing Skills	1
ME.440.730	Submitting Your First Paper	0.5
ME.440.803	Teaching in Neuroscience	1
ME.440.825	Quantitative Neurogenomics	3
	or AS.200.659 Quantitative Methods for Brain Sciences	
Other Courses and Elective Opportunities ¹		
ME.440.705	Cellular and Molecular Basis of Neural Development II	1.5
ME.440.707	Molecular Mechanisms in Synaptic Transmission	2
ME.440.709	Neuropharmacology	1.5
ME.440.711	Cellular and Molecular Basis of Neural Development I: Neuronal Differentiation	1.5
ME.440.715	Trends in the Neurobiology of Aging	.5
ME.440.808	Physiology of Visual and Olfactory Transductions	1.5
ME.440.824	Cell Physiology of Visual and Olfactory Transductions	1
ME.440.818	Bioenergetics, Neuroplasticity and Brain Health	1
ME.440.817	Psychedelics	0
ME.440.818	Bioenergetics, Neuroplasticity and Brain Health	1

ME.440.822	Computational Principles of Biological Vision	3
ME.440.804	Directed Readings in Neuroscience	0

¹ In addition to the listed core courses, each student will complete statistics and quantitative methods courses. Each student also selects advanced electives offered by members of the Neuroscience Training Program or other departments at the Medical School. Students in the Neuroscience Training Program are required to complete six elective courses by the end of their second year. These may be a combination of small seminar-style elective courses in neuroscience, listed below, and advanced courses in other fields relevant to their research interests, such as molecular biology, genetics, immunology, biochemistry, biomedical engineering, biostatistics, pharmacology, physiology, anatomy and computer science.