NEUROSCIENCE

http://www.uvm.edu/neurosciencegrad (http://www.uvm.edu/neurosciencegrad/)

OVERVIEW

The Neuroscience Graduate Program is a university-wide, multidisciplinary, Ph.D. granting program that has more than 50 faculty mentors across 13 departments and 5 colleges. This program emphasizes rigorous training in neuroscience-related research, educates students about human health, and encourages interdisciplinary research projects.

DEGREES

- Neuroscience M.S. (http://catalogue.uvm.edu/graduate/neuroscience/neurosciencems/)
- Neuroscience Ph.D. (http://catalogue.uvm.edu/graduate/neuroscience/neurosciencephd/)

FACULTY

Althoff, Robert; Associate Professor, Department of Psychiatry; PHD, University of Illinois Urbana-Champaign
Ballif, Bryan A.; Professor, Department of Biology; PHD, Harvard University
Barry, Jeremy; Assistant Professor, Department of Neurological Sciences; PHD, SUNY Downstate
Berger, Christopher Lewis; Professor, Department of Molecular Physiology and Biophysics; PHD, University of Minnesota Twin Cities
Bongard, Joshua C.; Professor, Department of Computer Science; PHD, University of Zurich
Bouton, Mark Earhart; Professor, Department of Psychological Science; PHD, University of Washington
Brewer, Matthias; Professor, Department of Chemistry; PHD, University of Wisconsin-Madison
Cannizzaro, Michael S.; Associate Professor, Department of Communication Sciences and Disorders; PHD, University of Connecticut
Cipolla, Marilyn Jo; Professor, Department of Neurological Sciences; PHD, University of Vermont
Coderre, Emily; Assistant Professor; Department of Communication Sciences and Disorders; PHD, University of Nottingham
Coutinho-Budd, Jaeda; Assistant Professor, Department of Biology; PHD The University of North Carolina at Chapel Hill
Dostmann, Wolfgang R. G.; Professor, Department of Pharmacology; PHD, University of Bremen, MD, University of Munich
Dumas, Julie Anna; Associate Professor, Department of Psychiatry; PHD, University of North Carolina
Ebert, Alicia; Associate Professor, Department of Biology; PHD, Colorado State University
Erdos, Benedek; Assistant Professor, Department of Pharmacology; MD, PHD, Semmelweis University, School of Medicine, Budapest, Hungary
Falls, William A.; Dean, College of Arts and Science, Professor, Department of Psychological Science; PHD, Yale University
Forehand, Cynthia Jean; Dean, Graduate College, Professor, Department of Neurological Sciences; PHD, University of North Carolina Chapel Hill
Francklyn, Christopher Steward; Professor, Department of Biochemistry; PHD, University of California Santa Barbara
Freeman, Kalev; Assistant Professor, Department of Surgery; MD, PHD, University of Colorado Boulder
Garavan, Hugh P.; Professor, Department of Psychiatry; PHD, Bowling Green State University
Green, John Thomas; Professor, Department of Psychological Science; PHD, Temple University
Hammack, Sayamwong E; Professor, Department of Psychological Science; PHD, University of Colorado
Hernan, Amanda; Assistant Professor, Department of Neurological Sciences; PHD, Dartmouth College
Higgins, Stephen Thomas; Professor, Department of Psychiatry; PHD, University of Kansas
Holmes, Gregory; Professor, Department of Neurological Sciences; MD, University of Virginia
Howe, Alan K; Associate Professor, Department of Pharmacology; PHD, Northwestern University
Hudziak, James Joseph; Professor, Department of Psychiatry; MD, University of Minnesota Twin Cities
Johnson, Abbie; Assistant Professor, Department of Neurological Sciences; PHD, University of Vermont
Krementsov, Dimitry; Assistant Professor; Department of Biomedical and Health Sciences; PHD University of Vermont
Lounsbury, Karen M.; Professor, Department of Pharmacology; PHD, University of Pennsylvania
Mackey, Michael Scott; Assistant Professor, Department of Psychiatry; PHD; McGill University, Montreal, Quebec
Mahoney, John Matthew; Assistant Professor, Department of Neurological Sciences; PHD, Dartmouth College
Mawe, Gary Michael; Professor, Department of Neurological Sciences; PHD, Ohio State University
May, Victor; Professor, Department of Neurological Sciences; PHD, Northwestern University
Mohapatra, Sambit; Assistant Professor; Department of Rehabilitation and Movement Science; PHD University of Illinois, Chicago
Morielli, Anthony D.; Associate Professor, Department of Pharmacology; PHD, University of California Santa Cruz
Nelson, Mark; Professor, Department of Pharmacology; PHD, Washington University in St Louis
Ou, Yangguang; Assistant Professor, Department of Chemistry; PHD, University of Pittsburgh
Peters, Denise; Assistant Professor; Department of Rehabilitation and Movement Science; PHD, DPT, University of South Carolina

Potter, Alexandra S.; Associate Professor, Department of Psychiatry; PHD, University of Vermont
Prelock, Patricia; Provost and Senior Vice President; Professor, Department of Communication Sciences; Professor, Department of Medicine-Pediatrics; PHD, University of Pittsburgh
Quénet, Delphine; Assistant Professor, Department of Biochemistry, PHD; University of Strasbourg, France
Schermerhorn, Alice C; Associate Professor, Department of Psychological Science; PHD, University of Notre Dame
Scott, Rodney; Professor, Department of Neurological Sciences; PHD, University of London
Sibold, Jeremy S.; Associate Professor, Department of Rehabilitation and Movement Science; EDD, West Virginia University
Spees, Jeffrey; Professor, Department of Medicine-Cardiovascular; PHD, University of California Davis
Stafford, James; Assistant Professor; Department of Neurological Sciences; PHD Oregon Health and Science University
Teuscher, Cory; Professor, Department of Medicine-Immunobiology; PHD, University of New Mexico
Toufexis, Donna J.; Associate Professor, Department of Psychological Science; PHD, McGill University
Vizzard, Margaret A.; Professor, Department of Neurological Sciences; PHD, Thomas Jefferson University
Wellman, George C.; Professor, Department of Pharmacology; PHD, University of Vermont
Weston, Matthew; Assistant Professor, Department of Neurological Sciences; DHSC, Baylor College of Medicine
Whitaker, Emmett; Assistant Professor; Department of Anesthesiology; MD, University of Rochester School of Medicine and Dentistry
White, Sheryl Lynne; Assistant Professor, Department of Neurological Sciences; PHD, University of Vermont

Graduate Medical Courses

GRMD 396. Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

GRMD 496. Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

Neuroscience Courses

NSCI 222. Cellular Neurophysiology. 3 Credits.
Fundamentals of cellular neurophysiology through lecture, independent student reading and faculty-led group discussions of journal articles. Prerequisites: NSCI 110 or, NSCI 111 and NSCI 112, or Instructor Permission.

NSCI 225. Human Neuroanatomy. 0 or 3 Credits.
Functional anatomy of the human nervous system on both the microscopic and macroscopic scales. Focuses on the structures of the peripheral nervous system, spinal cord, and brain, and how they work together to achieve behavior. Lectures and a required laboratory (gross and microscopic anatomy). Prerequisite: NSCI 111.

NSCI 230. Comparative Neurobiology. 3 Credits.
Examination of the cellular mechanisms that underlie selective motor and sensory abilities, and unique behaviors that have evolved in various species. Discussion and student presentations. Prerequisite: ASCI 141 or BIOL 106 or NSCI 111 or PSYS 115 or Instructor permission.

NSCI 280. Glia: Not Just Neuron Glue. 3 Credits.
Interdisciplinary course in which students engage in a focused, in-depth exploration of how glial cells contribute to neurological and psychiatric disorders. Prerequisites: NSCI 111; Course director approval. Pre/Co-requisites: NSCI 111; Course Director permission.

NSCI 300. Intro Functional Neuroimaging. 3 Credits.
Functional neuroimaging may be the most exciting recent development in cognitive neuroscience. Students will learn about neuroimaging, and work in small groups to develop experiments, acquire and analyze functional MRI data an MRI scanner.

NSCI 301. Intro Functional Neuroimaging. 3 Credits.
Part 1 will offer lecture-based technical background on in vivo brain-imaging techniques (e.g.MRI, PET; MEG; EEG; TMS). Part 2 will focus on hands-on fMRI data processing including data collection at UVMMC research MRI unit and in-class analysis instruction. Prerequisites: Graduate standing or Senior standing with Instructor permission. Pre/Co-requisites: Basic statistics and/or introductory physics helpful.

NSCI 302. Neuroscience. 3 Credits.
Functional anatomy of the human nervous system. Lectures and laboratory providing learning experience with dissected specimens, gross and microscopic anatomy. Incorporates clinical information from physician-scientists. Prerequisite: Physical Therapy major or Instructor permission.

NSCI 303. Human Gross and Microanatomy. 3 Credits.
Combination of gross anatomy, histology, embryology, physiology and medical imaging to present an integrated overview of the human body. Emphasis on peripheral nervous system including autonomic nervous system and cranial nerves. Cadaver dissection laboratory combined with lecture and/or content modules and research and teaching presentations. Pre/Co-requisites: Graduate standing; Neuroscience Graduate Program or others with Instructor permission; six credits coursework, plus two credits lab in biology, general chemistry, organic chemistry and Physics.

NSCI 323. Neurochemistry. 3 Credits.
Biochemistry of the nervous system. Topics include ion channels, synaptic function, neurotransmitters and neuropeptides, signal transduction, and hormones in brain function. Prerequisite: Permission of the Instructor.

NSCI 327. Resp Conduct in Biomed Rsch. 1 Credit.
Topics in Scientific Integrity surrounding responsible conduct and practices in biomedical research. Prerequisites: Advanced Graduate students, postdoctoral fellows and assistant professors in the biological or biomedical sciences.

NSCI 381. Seminar in Neuroscience. 1 Credit.
Research presentations and critical review of the literature in various areas of anatomical and neurobiological sciences.

NSCI 382. Seminar in Neuroscience. 1 Credit.
Research presentations and critical review of the literature in various areas of anatomical and neurobiological sciences.

NSCI 390. Internship. 1-18 Credits.
On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

NSCI 391. Master's Thesis Research. 1-18 Credits.

NSCI 392. Independent Study. 1-18 Credits.
A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

NSCI 394. Independent Graduate Research. 1-18 Credits.
Graduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

NSCI 395. Advanced Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles. Prerequisite: Instructor permission.

NSCI 490. Internship. 1-18 Credits.
On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

NSCI 491. Doctoral Dissertation Research. 1-18 Credits.

NSCI 494. Independent Graduate Research. 1-18 Credits.
Graduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

NSCI 496. Advanced Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.