NEUROSCIENCE

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.

Neuroscience Ph.D.

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
Brieant, Alexis; Assistant Professor, Department of Psychological Science; PHD, Virginia Tech
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
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 Emerita, 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
Green, John Thomas; Professor, Department of Psychological Science; PHD, Temple University
Hammack, Sayamwong E; Professor, Department of Psychological Science; PHD, University of Colorado
Harraz, Osama F.; Assistant Professor, Department of Pharmacology; PHD, University of Calgary
Herrera, Gerald M.; Assistant Professor, Department of Pharmacology; PHD, University of Vermont
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
Jangraw, David; Assistant Professor, Department of Biomedical Engineering, PHD, Columbia University
Klug, Nicholas; Assistant Professor, Department of Pharmacology; PHD, University of California, Davis
Koide, Masayo; Research Assistant Professor, Department of Pharmacology; PHD (medicine) University of Hamamatsu School of Medicine; PHD (pharmacology), University of Shizuoka
Krementsov, Dimitry; Assistant Professor; Department of Biomedical and Health Sciences; PHD University of Vermont
Lavoie, Brigitte; Assistant Research Professor, Department of Neurological Sciences; PHD, Université Laval
Lounsbury, Karen M.; Professor, Department of Pharmacology; PHD, University of Pennsylvania
May, Victor; Professor, Department of Neurological Sciences; PHD, Northwestern University
Morelli, Kathryn; Assistant Professor, Department of Neurological Sciences; PHD, The Jackson Laboratory & University of Maine
Morielli, Anthony D.; Associate Professor, Department of Pharmacology; PHD, University of California Santa Cruz
Mughal, Amreen; Assistant Professor, Department of Pharmacology; PHD, North Dakota State University
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
Ricci, Anna; Assistant Professor, Department of Neurological Sciences; PHD, Penn State College of Medicine
Salogiannis, John; Assistant Professor, Department of Molecular Physiology and Biophysics; PHD, Harvard University
Schermerhorn, Alice C; Associate Professor, Department of Psychological Science; PHD, University of Notre Dame
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
Stanley, Molly; Assistant Professor, Department of Biology; PHD, Washington University
Teuscher, Cory; Professor, Department of Medicine-Immunobiology; PHD, University of New Mexico
Thrailkill, Eric A.; Research Assistant Professor, Department of Psychological Science; PHD, Utah State University
Todd, Travis; Research Assistant Professor, Department of Psychological Science, PHD, University of Vermont
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
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

Courses

NSCI 5220. Advanced Cellular Neurophysiol. 3 Credits.
Discusses in detail, on both the cellular and molecular level, the physiological properties of cells within the nervous system. Focuses not only on the specific details of neuronal physiology, but also on the scientist, hypothesis, and experimental paradigm that validated the foundational ideas and concepts of this field. Credit not awarded for both NSCI 5220 and NSCI 3220.

NSCI 5230. 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: Instructor permission.

NSCI 5300. Gr Comparative Neurobiology. 3 Credits.
Many biological adaptations involve unique sensory and/or motor system skills that enable successful prey detection, predator avoidance, or mate location. Explores ways in which the nervous systems of a wide variety of animals are uniquely adapted for their survival challenges. Credit not awarded for both NSCI 5300 and NSCI 3230.

NSCI 5990. Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

NSCI 6010. Intr Functional Neuroimaging 2. 3 Credits.
Part One will offer lecture-based technical background on in vivo brain-imaging techniques (e.g.MRI, PET; MEG; EEG; TMS). Part Two will focus on hands-on fMRI data processing including data collection at UVMMC research MRI unit and in-class analysis instruction. Pre/Co-requisites: Basic statistics and/or introductory physics helpful.

NSCI 6020. 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 Graduate student or Instructor permission.

NSCI 6030. 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: Six credits coursework, plus two credits lab in biology, general chemistry, organic chemistry and physics; Neuroscience Graduate student or Instructor permission.

NSCI 6071. Medical Neuroscience Part 1. 2-6 Credits.
Explores the nervous system through integrative study of behavior, cellular and systems neurobiology, neuroanatomy, neuroethics, neuropharmacology, neurophysiology, pathophysiology, and psychopathology. Several instructional methods support learning in this course, including lecture, online independent study modules, laboratory sessions, team-based learning and case and problem based discussions. Prerequisites: Neuroscience Graduate student; Instructor permission.

NSCI 6072. Medical Neuroscience Part 2. 2-6 Credits.
Explores the nervous system through integrative study of behavior, cellular and systems neurobiology, neuroanatomy, neuroethics, neuropharmacology, neurophysiology, pathophysiology, and psychopathology. Several instructional methods support learning in this course, including lecture, online independent study modules, laboratory sessions, team-based learning and case and problem based discussions. Prerequisites: Neuroscience Graduate student; Instructor permission.

NSCI 6270. 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 6391. Master's Thesis Research. 1-18 Credits.
Research for the Master's Thesis.

NSCI 6820. Seminar in Neuroscience. 1 Credit.
Research presentations and critical review of the literature in various areas of anatomical and neurobiological sciences.

NSCI 6990. Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles. Prerequisite: Instructor permission.

NSCI 6991. 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 6993. 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 6995. Graduate Independent 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 7491. Doctoral Dissertation Research. 1-18 Credits.
Research for the Doctoral Dissertation.

NSCI 7990. Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

NSCI 7991. 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 7995. Graduate Independent 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.