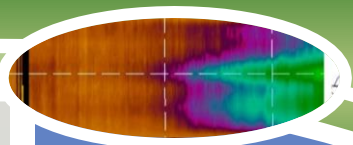


Neuroscience and ***Physiology*** are distinct but overlapping disciplines. Whereas ***Neuroscience*** investigates neural substrates of behavior, ***Physiology*** studies multiple functions. However, both seek to understand at an integrated level across molecules, cells, tissues, whole organism, and environment.

The workings of our brain and body define us. When problems occur, results can be devastating. According to the National Institutes of Health, neurological and heart disease are two of the largest world health concerns and more than 50 million people in this country endure some problem with the nervous system.

Our graduate sequences in ***Neuroscience*** and ***Physiology*** provide an exciting and challenging academic environment by combining research excellence with a strong commitment to education. We offer a comprehensive curriculum to graduate students interested in ***Neuroscience*** and ***Physiology***. Both M.S. and Ph.D. programs are also tightly integrated into laboratory research.

- M.S. and Ph.D. students take three core courses in neuroscience, physiology and biostatistics, and elective courses in more specific areas of these fields, as well as in related fields, such as cellular and molecular biology, behavior, chemistry and psychology

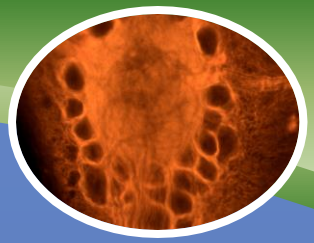
- The curriculum provides a canonical conceptual foundation for students pursuing master's and doctoral research in neuroscience and physiology

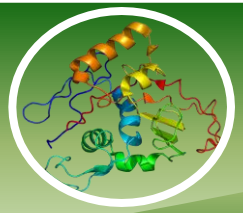
- Our sequences provide a "cohort" experience for new students, by offering a cohesive curriculum for those students interested in pursuing graduate study in neuroscience and physiology.

M.S. and Ph.D. Sequences in Neuroscience and Physiology

School of Biological Sciences
Illinois State University

For more information, contact Dr. Paul A. Garris (pagarri@ilstu.edu) or visit **bio.illinoisstate.edu/graduate and goo.gl/9YTs4X**





Neuroscience and Physiology Faculty & Research

Joe Casto, Ph.D.

Behavioral Neuroendocrinology

Physiology of host-parasite interactions, development of sex differences in brain and behavior, and neural mechanisms of motivated social behaviors.

Paul Garris, Ph.D.

Dopamine Neurobiology

Abused drugs, cognitive enhancers, Parkinson's disease, methamphetamine-induced neurotoxicity, and development of microsensors and instrumentation.

Craig Gatto, Ph.D.

Molecular Physiology

Employ modern approaches in molecular biology and protein biochemistry along with electrophysiology to study the structure-function, mechanism, biosynthesis, assembly and cellular trafficking of P-type ATPases or Ion pumps (e.g. Na,K-ATPase, Ca-ATPases).

Byron Heidenreich, Ph.D.

Behavioral Neuroscience

Neuropsychopharmacology of monoamine neurotransmitters. Neuropharmacology of drugs of abuse and psychotherapeutic medications.

Alysia Vrailas Mortimer, Ph.D.

Molecular Neuroscience and Genetics

Genetics, Genes and Behavior, and the Neurobiology of Aging.

Wolfgang Stein, Ph.D.

Cellular Neuroscience

Sensorimotor processing, motor pattern generation, and neuromodulation of neuronal networks. Combining computer modeling with optical imaging *in vitro* and *in vivo* electrophysiology.

Andrés Vidal-Gadea, Ph.D.

Molecular Neuroethology

Neural and genetic bases of behavior from an evolutionary perspective using the model nematode *Caenorhabditis elegans*.

More info: https://goo.gl/9YTs4X

Neuroscience & Physiology Curriculum

BSC 430 Neuroscience

BSC 435 Mammalian Physiology

BSC 490 Biostatistics and BSC 420.27 Biostatistics Lab

Graduate Seminars

BSC 420 Graduate Seminar in Biology

Thesis/Dissertation Research

BSC 499/599 Thesis/Dissertation Research

Elective Courses

BSC 411 Confocal Microscopy in Biology

BSC 415 Advanced Cell Biology I

BSC 418 Biological Microscopy

BSC 419 Molecular Biology of the Gene

BSC 425 Advanced Cell Biology II

BSC 450: Diverse Neuroscience and Physiology courses (Neurophysiology, Dopamine Neuroscience, Neuroethology, Computational Neuroscience, Biostatistics, Immunollogy etc.)

BSC 486 Ethology

BSC 470 Evolution

Not more than two of the following:

BSC 301 Entomology

BSC 325 Ecological Physiology of Animals

BSC 327 Hormones and Behavior

BSC 345 Introduction to Endocrinology

BSC 346 Developmental Biology of Animals

BSC 353 Biotechnology Lab I, BSC 354 Biotechnology Lab II

BSC 355 Genomics and Bioinformatics

BSC 367 Immunology, BSC 396 Avian Biology

CHE 442 Proteins, CHE 444 Lipids, CHE 464 Kinetics and Dynamics, PSY 418 Learning and Cognition, PSY 421 Advanced Behavior Modification, PSY 468 Advanced Psychopathology and Mental Health Diagnosis