



The Curriculum in Neurobiology University of North Carolina at Chapel Hill



Program website address: <http://www.med.unc.edu/neurobiology/>
Director of Graduate Studies: **Bob Rosenberg** (robert_rosenberg@med.unc.edu)
Graduate Student Coordinator: **Denise Kenney** (denise_kenney@med.unc.edu)
Student Liaison: **Tiffany Wills** (twills@med.unc.edu)

Program Overview

The Curriculum in Neurobiology is an interdepartmental, interdisciplinary training program leading to a PhD degree in Neurobiology. We represent 15 different departments and research centers, but are united in our interest in understanding the brain, neurons, glia, nervous systems, behavior, neurological disease, and neuropsychiatric disorders. Our program has outstanding courses, broad training in scientific communication skills, and diverse research areas to pursue during rotations and dissertation research. Currently we have 61 faculty and 34 students.

Program of Study

The Neurobiology training program requirements:

- Cellular and Molecular Neurobiology (NBIO 722 and NBIO 723)
- Developmental Neurobiology (NBIO 724)
- Biological Basis of Behavior (PSYC 701 or PSYC 702)
- Two seminars in scientific communication skills (e.g. NBIO 850)
- Two elective courses (any graduate-level biomedical courses)
- Attend weekly Neuroscience seminars (talks by leading neuroscientists from around the world)
- Present a poster each year at the Annual Research Day
- Pass a written qualifying examination after completion of the core curriculum, usually at the end of year 2
- Pass an oral qualifying examination (defense of the dissertation proposal), usually during year 3
- Publish at least one first-author paper from your dissertation research
- Write and defend a dissertation.

Qualifying Exams

The **written qualifying exam** is usually taken at the end of the 2nd year. The exam is administered by a committee of faculty selected by the Director. Students answer three of the four questions posed. The exam is open-book and is due no later than three weeks after distribution. The exam requires evaluation of the primary literature, critical thinking, and experimental designs.

The **oral qualifying exam** consists of a written dissertation proposal and an oral examination based on the proposal. The written proposal is ~15 pages and has a format of an NIH grant proposal. For the oral examination, students prepare a formal presentation of approximately 15 minutes that is presented to the dissertation committee, which will have received and read the written proposal beforehand. The committee's questions focus on whether the proposed work is feasible, and whether the student has an adequate grasp of the literature and the skills to accomplish the work in a timely fashion.

Annual events of scientific significance to the neuroscience community

- **Pierre Morell Research Day** (one outside speaker and all-student poster session)
- **Neuroscience Symposium** (with four international leaders in neuroscience)
- **Perl Prize** (to one international luminary, who often goes on to win the Nobel Prize)

Neurobiology Faculty

Cell & Molecular Physiology

Manzoor Bhat
Richard Cheney
Michael Goy
P. Kay Lund
Carol Otey
Edward Perl
Ben Philpot
Robert Sealock
Ann Stuart
Mark Zylka

Cancer Center

Al Baldwin
Jenny Ting

Biochemistry & Biophysics

Steve Crews
Patricia Maness

Neurology

C.J. Malanga
Rick Meeker

Pharmacology

Ken Harden
Bill Maixner
Ken McCarthy
Rob Nicholas
Bob Rosenberg
Bryan Roth
R. Jude Samulski
David Siderovski

Chemistry

R. Mark Wightman

Genetics

Terry Van Dyke

Otolaryngology

Paul Manis

Physics & Astronomy

Paul Tiesinga

Psychology

Charlotte Boettiger
Regina Carelli
Linda Dykstra
Rita Fuchs-Lokensgard
Kelly Giovanello
Joe Hopfinger
Don Lysle
Todd Thiele

Psychiatry

Aysenil Belger
John Gilmore
Joey Johns
Joe Piven

Biology

Sabrina Burmeister
Ken Lohmann
Keith Sockman

Neuroscience Center

Eva Anton
Jay Brenman
Mohanish Deshmukh
Anthony LaMantia
Glenn Matsushima
Larysa Pevny
Franck Polleux
Bill Snider

Center for Alcohol Studies

George Breese
Fulton Crews
Clyde Hodge
Leslie Morrow
Donita Robinson

Cell & Developmental Biology

Aldo Rustioni
Kathy Sulik
Juli Valtschanoff
Richard Weinberg
Ellen Weiss

Neurobiology Areas

Developmental Neurobiology	Behavior and Addiction	Molecular and Genetic Neurobiology	Ion Channels, Receptors, and Signal Transduction
Synaptic Structure and Function	Animal Models of Human Disease	Imaging and Cognitive Function	Sensory Systems
Regeneration and Myelination	Neuroimmunology	Comparative Neurobiology	Computational Neurobiology

Typical Neurobiology training program

Year 1

Courses:

Cellular and Molecular Neurobiology (NBIO 722 & 723)
Elective?
First-year focus group
Three research rotations

Deadlines:

Select a dissertation advisor

Year 2

Courses:

Developmental Neurobiology (NBIO 724 or equivalent)
Behavior and its Biological Basis (PSYC 701 or 702 or equivalent)
Elective(s)
Communicating Science (presentation skills) (NBIO 850)

Deadlines:

Form a preliminary committee in January.
Meet with preliminary committee in February.
Take qualifying exam in June.

Year 3

Courses:

Electives (if necessary)

Deadlines:

Form a full dissertation committee one month after passing the written qualifying exam.
Submit dissertation proposal in December-January.
Defend proposal (oral exam) 2-4 weeks after submitting the proposal.

Years 4-5

Meet with your committee at least once per year, maybe twice per year.
Write and publish at least one first-author journal article.
Write and defend dissertation. *Get a great post-doctoral position.*

Deadlines:

Meet with dissertation committee as requested by your committee.
Satisfy the requirements of the Graduate School for the completion of the dissertation.

For more information: <http://www.med.unc.edu/neurobiology/>