

NEUROBIOLOGY AND BEHAVIOR (GRADUATE FIELD)

Program Website (<http://nbb.cornell.edu/>)

Field Description

Requirements for the Ph.D. degree include a minimum one semester of teaching experience, a survey course in neurobiology behavior, and an annual meeting of the Special Committee. The field has no formal language requirement, but one can be imposed by the student's Special Committee. The field also requires each student to give a publicly announced seminar as part of the dissertation defense.

Data and Statistics

- Doctoral Program Statistics (<https://gradschool.cornell.edu/about/program-metrics-assessments-and-outcomes/doctoral-program-statistics/?SelectGradField=55>)

Field Manual

- Manual (<https://nbb.cornell.edu/graduate-student-handbook/>)

Subject and Degrees

Behavioral Biology

- Behavioral Biology (Ph.D.) ([*\(Ithaca\)*](https://catalog.cornell.edu/programs/behavior-biology-phd/))

Neurobiology

- Neurobiology (Ph.D.) ([*\(Ithaca\)*](https://catalog.cornell.edu/programs/neurobiology-phd/))

Concentrations by Subject

Behavioral Biology

- behavioral ecology
- chemical ecology
- ethology
- neuroethology
- sociobiology

Neurobiology

- cellular and molecular neurobiology
- neuroanatomy
- neurochemistry
- neuropharmacology
- neurophysiology
- sensory physiology

Faculty

Carolyn E. Adler (<http://adlerlab.vet.cornell.edu/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology:* cellular and molecular neurobiology; neuroanatomy; *Behavioral Biology:* neuroethology
- **Research Interests:** Neural regeneration, Stem cells, Regeneration, Planaria

Andrew Howard Bass (<http://nbb.cornell.edu/andrew-bass/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology:* neuroanatomy; neurophysiology; *Behavioral Biology:* neuroethology
- **Research Interests:** animal communication, especially production and encoding of vocal signals; evolution and sexual differentiation of brain and behavior

Richard A Cerione (<http://www2.vet.cornell.edu/research/faculty/richard-cerione-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology:* cellular and molecular neurobiology
- **Research Interests:** understanding the signaling cues that direct cell proliferation, differentiation and development

Thomas A. Cleland (<http://psychology.cornell.edu/thomas-cleland/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology:* cellular and molecular neurobiology; neuropharmacology; neurophysiology; sensory physiology; *Behavioral Biology:* neuroethology
- **Research Interests:** olfactory perception as a complex system; coordinating behavioral; physiological, pharmacological, and computational studies of sensory sampling; learning and memory; biological neural networks

Itai Cohen (<http://physics.cornell.edu/itai-cohen/>)

- **Campus:** Ithaca
- **Concentrations:** *Behavioral Biology:* neuroethology; *Neurobiology:* neurophysiology; sensory physiology
- **Research Interests:** animal movement and the motor control of flight

Ruth N Collins (<http://www2.vet.cornell.edu/research-departments/faculty/ruth-collins-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology:* cellular and molecular neurobiology; neuropharmacology
- **Research Interests:** examination of how the chemical reactions of biology are organized in time and space, and how this organization is harnessed by cells to generate distinct outcomes

Robin Dando (<http://cals.cornell.edu/robin-dando/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology:* cellular and molecular neurobiology; neurophysiology; sensory physiology
- **Research Interests:** utilizes techniques from physiology, molecular biology and behavioral science to study the neuroscience of the mammalian taste system

David Lawrence Deitcher (<http://nbb.cornell.edu/david-deitcher/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology:* cellular and molecular neurobiology
- **Research Interests:** mechanisms of neurotransmitter and neuropeptide release; synaptic development

Ian Ellwood (<http://nbb.cornell.edu/ian-ellwood/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology*: cellular and molecular neurobiology; neuroanatomy; neurochemistry; neuropharmacology; neurophysiology; *Behavioral Biology*: neuroethology
- **Research Interests:** understanding how neuromodulators regulate the prefrontal cortex in behaviors requiring cognitive flexibility using imaging, optogenetics and electrophysiology

Cole Gilbert (<http://cals.cornell.edu/cole-gilbert/>)

- **Campus:** Ithaca
- **Concentrations:** *Behavioral Biology*: neuroethology; *Neurobiology*: neurophysiology; sensory physiology
- **Research Interests:** invertebrate neuroethology; sensory guidance; neural evolution in arthropods

Jesse H. Goldberg (<http://www.bme.cornell.edu/faculty-directory/jesse-h-goldberg/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology*: cellular and molecular neurobiology; neuroanatomy; neurochemistry; neuropharmacology; neurophysiology; sensory physiology; *Behavioral Biology*: ethology; neuroethology
- **Research Interests:** how basal ganglia control motor learning and behavior

Azahara Oliva Gonzalez (<http://nbb.cornell.edu/azahara-oliva/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology*: neurophysiology; sensory physiology
- **Research Interests:** neurophysiology, sensory physiology

Chun Han (<http://cals.cornell.edu/chun-han/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology*: cellular and molecular neurobiology; neuroanatomy
- **Research Interests:** Dendrite development and degeneration regulated by intrinsic mechanisms and by the neuronal environment

Ronald Morgan Harris-Warrick (<http://nbb.cornell.edu/ronald-harris-warrick/>)

- **Campus:** Ithaca - (Graduate School Professor)
- **Concentrations:** *Neurobiology*: cellular and molecular neurobiology; neurochemistry; neuropharmacology; neurophysiology
- **Research Interests:** neuromodulation of neural networks in lobster and mouse spinal cord; molecular manipulation of ion channels in neurons

Andrew Hein (<http://cals.cornell.edu/andrew-hein/>)

- **Campus:** Ithaca
- **Concentrations:** *Behavioral Biology*: behavioral ecology; ethology
- **Research Interests:** Animal Behavior, Social Behavior

Ronald Raymond Hoy (<http://nbb.cornell.edu/ronald-r-hoy/>)

- **Campus:** Ithaca - (Graduate School Professor)
- **Concentrations:** *Behavioral Biology*: neuroethology; *Neurobiology*: neurophysiology; sensory physiology

- **Research Interests:** animal communication; behavior genetics of invertebrates; regeneration and development in invertebrate nervous systems

Walter D. Koenig (<http://www.birds.cornell.edu/home/staff/walter-koenig/>)

- **Campus:** Ithaca - (Graduate School Professor)
- **Concentrations:** *Behavioral Biology*: behavioral ecology
- **Research Interests:** social behavior, particularly cooperative breeding; reproductive strategies of trees; spatial synchrony

Alex Kwan (<http://alexkwanlab.org/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology*: cellular and molecular neurobiology; neurochemistry; neuropharmacology; neurophysiology
- **Research Interests:** Neural mechanisms of behavior, multiphoton imaging, pharmacology

David Ming Lin (<http://www2.vet.cornell.edu/research-departments/faculty/david-lin-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology*: cellular and molecular neurobiology
- **Research Interests:** axon guidance and target formation during the development of the mouse olfactory system, using genetic, in vitro, and genomic approaches

Christiane Linster (<http://nbb.cornell.edu/christiane-linster/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology*: neurophysiology
- **Research Interests:** neural coding and memory in the olfactory system; emphasis on neuromodulatory influences; combined approach using behavior, electrophysiology, and computational modeling

Irby J Lovette (<http://lovette.eeb.cornell.edu/>)

- **Campus:** Ithaca
- **Concentrations:** *Behavioral Biology*: behavioral ecology; sociobiology
- **Research Interests:** behavioral ecology, sociobiology

Eirene Chloe Markenscoff-Papadimitriou (<http://cals.cornell.edu/eirene-markenscoff-papadimitriou/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology*: cellular and molecular neurobiology
- **Research Interests:** My research probes gene regulatory mechanisms that control neuronal identity and function during brain development and how they misfunction in autism and other neurodevelopmental disorders.

Nozomi Nishimura (<http://www.bme.cornell.edu/faculty-directory/nozomi-nishimura/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology*: neurophysiology; sensory physiology
- **Research Interests:** Alzheimer's Disease, Neural Circuits, 2 photon imaging, Memory, hippocampus

Linda M Nowak (<http://www2.vet.cornell.edu/research-departments/faculty/linda-nowak-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology*: cellular and molecular neurobiology; neuropharmacology; neurophysiology
- **Research Interests:** molecular and electrophysiological analysis of glutamate receptors, ion channels, and response mechanisms in synaptic transmission

Ned J. Place (<http://www2.vet.cornell.edu/research/faculty/ned-place-phd-md/>)

- **Campus:** Ithaca
- **Concentrations:** *Behavioral Biology*: ethology
- **Research Interests:** mammalian reproductive biology with a focus on the life history trade-offs associated with hormones, behavior and aging

Robert A. Raguso (<http://nbb.cornell.edu/robert-raguso/>)

- **Campus:** Ithaca
- **Concentrations:** *Behavioral Biology*: behavioral ecology; chemical ecology; ethology; *Neurobiology*: sensory physiology
- **Research Interests:** chemically-mediated plant/animal interactions; biosynthesis, physiology and evolution of fragrance; insect olfaction, behavior and pollination ecology

Hudson Kern Reeve (<http://nbb.cornell.edu/hudson-kern-reeve/>)

- **Campus:** Ithaca
- **Concentrations:** *Behavioral Biology*: behavioral ecology; sociobiology
- **Research Interests:** theoretical sociobiology; evolution of cooperation and conflict in animals and plants; behavioral ecology; plasticity in insect social behavior

Antonio Fernandez Ruiz (<http://braincomputation.org/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology*: neuroanatomy; neurophysiology
- **Research Interests:** Systems Neuroscience, Episodic Memory

Ben Sandkam (<http://nbb.cornell.edu/ben-sandkam/>)

- **Campus:** Ithaca
- **Concentrations:** *Behavioral Biology*: behavioral ecology; chemical ecology; ethology; sociobiology; *Neurobiology*: sensory physiology
- **Research Interests:** Behavioral Genetics

Chris B. Schaffer (<http://www.bme.cornell.edu/faculty-directory/chris-schaffer/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology*: neurophysiology
- **Research Interests:** advanced optical techniques used to observe and manipulate in vivo biological systems with the goal of developing a microscopic-scale understanding of normal and disease-state physiological processes; neurodegeneration caused by occlusion of microvessels in the brain

Madineh Sedigh-Sarvestani (<http://nbb.cornell.edu/madineh-sedigh-sarvestani/>)

- **Campus:** Ithaca
- **Concentrations:** *Behavioral Biology*: neuroethology; *Neurobiology*: neurophysiology; sensory physiology
- **Research Interests:** Systems Neuroscience, Vision

Kerry L. Shaw (<http://nbb.cornell.edu/kerry-l-shaw/>)

- **Campus:** Ithaca
- **Concentrations:** *Behavioral Biology*: behavioral ecology
- **Research Interests:** species and speciation; behavioral genetics; sexual selection and evolution; genetic architecture of behavior (QTLs); linkage analysis and genome evolution; genetics of diverging lineages; the conceptual nature of species; molecular systematics; comparative methods; orthopteroid insects

Michael Sheehan (<http://sheehanlab.weebly.com/>)

- **Campus:** Ithaca
- **Concentrations:** *Behavioral Biology*: behavioral ecology; chemical ecology; sociobiology; *Neurobiology*: sensory physiology
- **Research Interests:** Recognition systems; animal communication; evolution of social behavior; cooperation; comparative methods; genetic basis of signals and behaviors; population and comparative genomics; sensory systems; rodents; paper wasps

David M. Smith (<http://psychology.cornell.edu/david-m-smith/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology*: neurophysiology
- **Research Interests:** neural systems involved in learning and memory functions; multi-site neuronal recordings and neurochemical inactivation in behaving rodents used to identify brain circuitry involved in these functions

Weinan Sun (<http://nbb.cornell.edu/weinan-sun/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology*: cellular and molecular neurobiology; neurophysiology
- **Research Interests:** The Sun Lab examines how hippocampal-neocortical circuits influence intelligent behavior. Furthermore, by extracting algorithmic insights from these brain processes, we aim to foster the development of innovative AI algorithms

Katherine Anne Tschida (<http://psychology.cornell.edu/katherine-tschida/>)

- **Campus:** Ithaca
- **Concentrations:** *Behavioral Biology*: neuroethology; *Neurobiology*: neurophysiology
- **Research Interests:** Neural circuits for social communication

Maren N Vitousek (<http://ecologyandevolution.cornell.edu/maren-vitousek/>)

- **Campus:** Ithaca
- **Concentrations:** *Behavioral Biology*: behavioral ecology; ethology; sociobiology
- **Research Interests:** behavioral ecology, evolutionary endocrinology, mechanisms of behavior, stress responses, phenotypic flexibility, sexual selection and sexual signaling

Yuhan Wang (<http://www.human.cornell.edu/people/yw2526/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology*: cellular and molecular neurobiology; neuroanatomy; neurochemistry
- **Research Interests:** cellular and molecular neurobiology, neuroanatomy, neurochemistry

Michael S. Webster (<http://nbb.cornell.edu/michael-webster/>)

- **Campus:** Ithaca
- **Concentrations:** *Behavioral Biology*: behavioral ecology; sociobiology
- **Research Interests:** reproductive strategies and the evolutionary causes and consequences of variation in sexual signals, primarily using birds as a model system

Gregory Arthur Weiland (<http://www2.vet.cornell.edu/research-departments/faculty/gregory-weiland-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology*: cellular and molecular neurobiology; neurochemistry; neuropharmacology
- **Research Interests:** molecular neurobiology and neuropharmacology; receptor and ion channel mechanisms

Nilay Yapici (<http://nbb.cornell.edu/nilay-yapici/>)

- **Campus:** Ithaca
- **Concentrations:** *Neurobiology*: cellular and molecular neurobiology; neuroanatomy; neurochemistry; neurophysiology; sensory physiology
- **Research Interests:** neural circuits that regulate state dependent decision making, motivation and food intake using approaches ranging from high resolution quantitative measurements of behavior, functional imaging, neural tracking and genetics