NEUROSCIENCE, PHD

for the degree of Doctor of Philosophy in Neuroscience

Because of the breadth of the fields in this program, the coursework is tailored to the student’s fields of interest as declared by a major and at least two minor areas of concentration from among those listed above. A faculty committee of representatives from the major and minor areas will then meet regularly with the student to plan coursework and research experience. The goal of this plan is to allow maximum flexibility while providing students with close guidance. Courses and laboratory research experience are supplemented by weekly seminars in neuroscience.

Graduate Degree Programs in Neuroscience

Neuroscience, PhD (p. 1)

The Neuroscience Program is an interdisciplinary and highly individualized Ph.D. program. Students have varied backgrounds but typically have undergraduate degrees in psychology, biology, electrical engineering, or computer science. The Neuroscience Program guides students to become productive, scholarly neuroscientists with access to careers in academic research, medicine, industry or non-research careers such as law, policy, or journalism. The faculty have broad and diverse research interests; areas of particular strength include aging, brain plasticity, cognitive functions, neurogenomics, molecular bases of development and disease and neuroengineering. Integrative and collaborative studies that bridge two or more labs are encouraged.

Admission

Applications are considered individually by the admissions committee, for the fall semester and subject to final approval by the Graduate College. Graduate Record Examination (GRE) scores are optional. International applicants must meet the minimum English Language requirements as set by the Graduate College at https://grad.illinois.edu/admissions/instructions/04c. Admission and financial aid are considered together.

Financial Aid

The Neuroscience Program is committed to supporting its students and makes every effort to ensure that students who remain in good academic standing receive full support including tuition waiver and stipend throughout their tenure in the program. Support may come in the form of fellowships, traineeships, research assistantships, or teaching assistantships according to the student’s qualifications.

For additional details and requirements refer to the department’s Program for Graduate Study (https://neuroscience.illinois.edu/academics/graduate-program/) and the Graduate College Handbook (http://www.grad.illinois.edu/gradhandbook/).

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>NEUR 520</td>
<td>Advanced Topics in Neuroscience (Section 1, Seminar - each of first 4 semesters)</td>
<td>4</td>
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<tr>
<td>NEUR 500</td>
<td>Topics in Neuroscience</td>
<td>2</td>
</tr>
<tr>
<td>NEUR 520</td>
<td>Advanced Topics in Neuroscience (Section 2, Professional Development Program.)</td>
<td>1</td>
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<tr>
<td>NEUR 599</td>
<td>Thesis Research (0 min applied toward degree)</td>
<td>0</td>
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<tr>
<td>Total Hours</td>
<td></td>
<td>96</td>
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Other Requirements

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<tr>
<th>Requirement</th>
<th>Description</th>
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<td>All students must complete a minimum of one semester of service as a teaching assistant (one semester @50% or 2 semesters @25% appointment) or the requirement may be met by education outreach activity under the supervision of a Neuroscience Program faculty member.</td>
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<tr>
<td>Masters Degree Required Before Admission to Ph.D.?</td>
<td>No</td>
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<tr>
<td>Qualifying Exam Required:</td>
<td>Yes</td>
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<td>Preliminary Exam Required:</td>
<td>Yes</td>
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<td>Final Exam/Defense Required:</td>
<td>Yes</td>
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Information listed in this catalog is current as of 10/2022
Disertation Deposit Required: Yes
Minimum GPA: 3.0

for the degree of Doctor of Philosophy in Neuroscience

1. **Knowledge of chosen research area:** Students are expected to be acquainted with the full breadth of neuroscience research, but for assessment purposes, each student chooses one major and two minor areas of concentration that form the core of their professional knowledge and are tested on the Qualifying Exam. We believe neuroscience is too broad for every student to master the same core knowledge and be successful; instead, students plan their own programs of study (with committee guidance) and develop independence in building their expertise.

2. **Mastery of experimental design and methods:** Students plan, design, carry out and interpret experiments; they are expected to be fully competent in the standard techniques of their field and to learn cutting-edge techniques where possible.

3. **Analytical and quantitative skills:** All students are encouraged to take statistics courses appropriate to their research area and to become experts in the treatment, analysis, and interpretation of data. Most students learn to code their own data management and statistical procedures.

4. **Writing and presentation skills:** All students must demonstrate strong skills in writing manuscripts for publication and grant proposals, and in giving oral presentations. Students are expected to communicate their research effectively to general scientific and to lay audiences.

5. **Teaching and mentoring:** Students are required to be Teaching Assistants for one semester at 50% (or two semesters at 25%). Some students are able to petition the program to waive the teaching requirement if they can demonstrate equivalent preparation time and direct contact time with another group of students. Most students mentor one or more undergraduate students, or more junior graduate students, during their time in the program.

6. **Professional skills and ethics:** The program requires completion of a course in Professional Skills and Ethics that covers grant writing and review, ethics, career development, and other professional development skills. We also require an additional course in ethics, as mandated by NIH and NSF.

7. **Citizenship and organizational skills:** Students are expected to have strong interpersonal and collegial skills for collaborations, networking, etc. Neuroscience students have an exceptional culture of participation, volunteering and organizing program events, including our Brain Awareness Day (annual public outreach event) and Open House for visiting recruits. The skills acquired in these experiences are not "scientific", but they have a major impact on students’ effectiveness in their varied roles and in the impression they make on visitors to the program and the university.

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program director: Martha Gillette
program coordinator: Michelle Tomaszycki
email: nsp@life.illinois.edu
overview of grad college admissions & requirements: https://grad.illinois.edu/admissions/apply
overview of program admissions requirements:
program website: http://neuroscience.illinois.edu
college website: https://las.illinois.edu/
program office: 2325 Beckman Institute, 405 North Mathews Avenue, Urbana, IL 61801
phone: (217) 300-7978