Neuroscience, Ph.D.

For information about predoctoral training opportunities in neuroscience, contact the Neuroscience Program or visit its website.

Requirements

The Doctor of Philosophy program in neuroscience requires a minimum of 72 s.h. of graduate credit. The program’s curriculum is designed around three tracks: molecular/cellular, developmental/systems, and cognitive/behavioral. Following broad-based instruction in a core curriculum, students specialize in one of the tracks.

Within a framework of core, track-specific, and elective courses, students pursue a program of study individually designed according to their undergraduate training and graduate research goals. After enrolling in the Neuroscience Program, entering students consult with the advisory committee regarding their level of preparation for the program’s required courses.

The Student Advisory Committee meets with all first- and second-year graduate students once each semester, helping students explore their research interests and select faculty mentors for the required laboratory rotations. Each student is expected to complete three rotations in faculty laboratories before selecting a thesis advisor. Rotations ordinarily last 12 weeks but may last from 8 to 16 weeks. Under special circumstances, two rotations may be in the same laboratory, an arrangement that permits a student to learn a variety of techniques and approaches before settling down to work on the dissertation project. Students usually choose a dissertation lab at the end of their first year.

Background Requirements

Students are expected to demonstrate competency, through prerequisites or coursework, in each of four fields: biochemistry, general physiology, cell biology, and statistics. These requirements ordinarily should be fulfilled by the end of the first year of graduate study. Waivers of background course requirements may be requested by students who have taken equivalent courses before entering the Neuroscience Program.

Neuroscience Core

The following courses form the core of the neuroscience graduate curriculum.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSCI:5653</td>
<td>Fundamental Neurobiology</td>
<td>3</td>
</tr>
<tr>
<td>ACB:6252</td>
<td>Functional Neuroanatomy</td>
<td>arr.</td>
</tr>
<tr>
<td>BMED:7270</td>
<td>Scholarly Integrity/ Responsible Conduct of Research I</td>
<td>0</td>
</tr>
<tr>
<td>BMED:7271</td>
<td>Scholarly Integrity/ Responsible Conduct of Research II</td>
<td>0</td>
</tr>
<tr>
<td>PSY:6370</td>
<td>Principles of Neuropsychology</td>
<td>3</td>
</tr>
</tbody>
</table>

In addition, students register for the following two courses each semester:

NSCI:6265 Neuroscience Seminar 0-1
NSCI:7305 Neuroscience Research arr.

Electives

Elective requirements may be met by completing 8 s.h. from a list of courses offered by the Departments of Anatomy and Cell Biology, Biology, Molecular Physiology and Biophysics, Pharmacology, Psychological and Brain Sciences, and other departments as appropriate. With permission of the Student Advisory Committee, students may satisfy the elective requirement wholly or in part by registration in the following course.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSCI:7301</td>
<td>Directed Study in Neuroscience</td>
<td>arr.</td>
</tr>
</tbody>
</table>

Combined Programs

Ph.D./M.D.

Students may work toward the Doctor of Medicine degree and a Ph.D. in neuroscience in a combined degree program offered by the Graduate College and the Carver College of Medicine. Applicants must be admitted to both programs before they may be admitted to the combined degree program. See the Medical Scientist Training Program (Carver College of Medicine) in the Catalog.

Admission

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College on the Graduate College website.

Financial Support

All students receive a financial stipend of $30,500 plus tuition for the 2020-21 academic year. Financial support comes from training grants, research assistantships, teaching assistantships, scholarships, individual research grants, or other departmental or college funds. All students are required to teach as part of their development as future scientists and faculty members.

The Neuroscience Program is committed to supporting its graduate students for their entire training period. Students normally are supported in the first year by the program. After that, support is expected to come from a student’s primary research mentor. Occasionally, advanced students are supported through teaching assistantships.

See Financial Assistance on the Interdisciplinary Graduate Program in Neuroscience website and Finances on the Graduate Admissions website for more information.

NIH Training Grant

The Neuroscience Program is supported by a training grant from the National Institutes of Health. The grant provides stipend and tuition support for a select group of first- and second-year graduate students.