NEUROSCIENCE, M.S.

The Neuroscience Training Program (NTP) was established in 1971. Currently, it comprises more than 80 faculty members whose research interests range from molecular neurobiology to integrative systems. The program is designed to prepare students for careers in research and teaching. On average the number of students in the program is approximately 55. The program is best suited for students who are independent and wish to take a direct role in determining their graduate education. Training leads to the Ph.D. degree in neuroscience or the M.D./Ph.D. degree in cooperation with the School of Medicine and Public Health.

The doctoral program of each graduate student in the training program is tailored to meet individual needs. Each student’s program is supervised by an advisory committee of five faculty members selected by the student in consultation with the major professor. During the first year students complete three laboratory rotations and take one-semester courses in molecular/cellular neuroscience and systems neuroscience. Students also take one upper-level course in molecular/cellular and systems neuroscience. Additional advanced courses may be taken to complement individual research interests.

A preliminary examination is required of all Ph.D. degree candidates at the end of the second year of graduate study. The examination consists of two written papers that are presented orally to the student’s advisory committee. The first paper is a critical evaluation of a research topic outside the student’s major area of interest. The second paper is a thesis research proposal. Additional requirements for the Ph.D. degree are attendance at the weekly neuroscience seminar and completion of one semester of teaching.

The central forum for intellectual exchange in the program is the neuroscience seminar (NTP 900 Neuroscience Seminar: Current Topics in Neurobiology), which meets weekly and is attended by neuroscience students and faculty. During an academic year, members of the program choose six topics in current neuroscience research for consideration. Topics are reviewed intensively in study groups supervised by faculty sponsors. Critical summaries of each topic are then presented by students to participants in the seminar as a series of lectures and discussions. Each three- to four-week topic session concludes with a lecture by an outside invited speaker who is well known for his or her research in the topic area. In the course of every three- to four-year period, most of the major research areas in neuroscience are reviewed in the neuroscience seminar; consequently, students become familiar with the breadth of contemporary neuroscience.

The average time taken by students to complete the Ph.D. degree is five years. The program prepares students for careers primarily in research and teaching in universities and colleges and careers outside of academia. Of the more than 200 students who have earned the Ph.D. degree in the program, more than 95 percent have careers in biomedical science.

NEUROSCIENCE & PUBLIC POLICY PROGRAM

The Neuroscience & Public Policy Program (N&PP) offers three integrated degree tracks with the cooperation of the Neuroscience Training Program, the La Follette School of Public Affairs and the University of Wisconsin-Madison Law School. The N&PP is based on two strongly held beliefs: first, that sound science and technology policy and law are essential for the well-being of societies; second, that a step toward ensuring such policy is to train future scientists in the making of public policy or the law and prepare them to participate in bringing science and society closer together.

The program offers students the opportunity to earn a Ph.D. degree in neuroscience as well as a master of public affairs (MPA), a master of international public affairs (MIPA), or a juris doctorate (J.D.). In each of the degree tracks, the program brings together faculty from neuroscience, public policy, bioethics, sociology, and law and other related fields to train research neuroscientists who will be qualified to help shape public policy or the law. The cross-disciplinary training combines didactic and laboratory research training in neuroscience with a classroom-based and hands-on education in public policy or the law.

For more information about the double and dual degree tracks offered through the neuroscience & public policy program including admissions and program requirements please visit the program website (https://npp.wisc.edu).

ADMISSIONS

This master’s program is offered for work leading to the Ph.D. Students may not apply directly for the master’s, and should instead see the admissions information for the Ph.D. (http://guide.wisc.edu/medicine-public-health-school-wide/neuroscience-phd)

FUNDING

GRADUATE SCHOOL RESOURCES

Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information (https://grad.wisc.edu/funding) is available from the Graduate School. Be sure to check with your program for individual policies and processes related to funding.

PROGRAM RESOURCES

Each student receives a stipend that covers tuition, fees, living costs, and health insurance and is guaranteed for five years if progress is satisfactory. Financial support is provided from the program’s NIH training grant, fellowships, and faculty research grants. Limited support is available for international students.

Our program also works with students to submit proposals for fellowships. For more information on those funding opportunities please visit our website (https://npp.neuroscience.wisc.edu/funding-opportunities).

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (http://guide.wisc.edu/graduate/#policiesandrequirementstext), in addition to the program requirements listed below.
MAJOR REQUIREMENTS

MODE OF INSTRUCTION

Face to Face | Evening/Weekend | Online | Hybrid | Accelerated
---|---|---|---|---
Yes | No | No | No | No

Mode of Instruction Definitions

**Evening/Weekend:** These programs are offered in an evening and/or weekend format to accommodate working schedules. Enjoy the advantages of on-campus courses and personal connections, while keeping your day job. For more information about the meeting schedule of a specific program, contact the program.

**Online:** These programs are offered primarily online. Many available online programs can be completed almost entirely online with all online programs offering at least 50 percent or more of the program work online. Some online programs have an on-campus component that is often designed to accommodate working schedules. Take advantage of the convenience of online learning while participating in a rich, interactive learning environment. For more information about the online nature of a specific program, contact the program.

**Hybrid:** These programs have innovative curricula that combine on-campus and online formats. Most hybrid programs are completed on-campus with a partial or completely online semester. For more information about the hybrid schedule of a specific program, contact the program.

**Accelerated:** These on-campus programs are offered in an accelerated format that allows you to complete your program in a condensed time-frame. Enjoy the advantages of on-campus courses with minimal disruption to your career. For more information about the accelerated nature of a specific program, contact the program.

CURRICULAR REQUIREMENTS

Minimum Credit Requirement: 30 credits

Minimum Residence Credit Requirement: 16 credits

Minimum Graduate Coursework Requirement: Half of degree coursework (15 credits out of 30 total credits) must be completed graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university’s Course Guide (https://registrar.wisc.edu/course-guide/).

Overall Graduate GPA Requirement: 3.00 GPA required.

Other Grade Requirements: The Graduate School requires an average grade of B or better in all coursework (300 or above, not including research credits) taken as a graduate student unless conditions for probationary status require higher grades. Grades of Incomplete are considered to be unsatisfactory if they are not removed during the next enrolled semester.

Assessments and Examinations Requirement: Submit a manuscript suitable for publication or the equivalent of part two of the preliminary exam to their advisory committee for approval. Approval should occur once the student has presented either option at their advisory committee meeting.

Language Requirements: No language requirements.

REQUIRED COURSES

**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>NTP 900</td>
<td>Neuroscience Seminar: Current Topics in Neurobiology</td>
<td>2</td>
</tr>
</tbody>
</table>

**Electives**

Complete 30 credits, 15 of which must be completed in courses numbered 700 or higher or in one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>NTP/NEURODPT 610</td>
<td>Cellular and Molecular Neuroscience</td>
<td>4</td>
</tr>
<tr>
<td>NTP/NEURODPT/PSYCH 611</td>
<td>Systems Neuroscience</td>
<td>4</td>
</tr>
<tr>
<td>NTP/PHYSIOL 629</td>
<td>Molecular and Cellular Mechanisms of Memory</td>
<td>3</td>
</tr>
<tr>
<td>NTP/NEURODPT 630</td>
<td>Neuronal Mechanisms for Sensation and Memory in Cerebral Cortex</td>
<td>3</td>
</tr>
<tr>
<td>NTP 670</td>
<td>Stem Cells and the Central Nervous System</td>
<td>2-3</td>
</tr>
<tr>
<td>NTP 675</td>
<td>Special Topics</td>
<td>1-3</td>
</tr>
<tr>
<td>NTP/NEUROL 735</td>
<td>Neurobiology of Disease</td>
<td>2</td>
</tr>
<tr>
<td>NTP/ANATOMY/ZOOLOGY 765</td>
<td>Developmental Neuroscience</td>
<td>3</td>
</tr>
<tr>
<td>NTP 777</td>
<td>Basic Sleep Mechanisms and Sleep Disorders: from Neurobiology to Sleep Medicine</td>
<td>3</td>
</tr>
</tbody>
</table>

POLICIES

GRADUATE SCHOOL POLICIES

The Graduate School’s Academic Policies and Procedures (https://grad.wisc.edu/acadpolicy) provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

MAJOR-SPECIFIC POLICIES

GRADUATE PROGRAM HANDBOOK

The Graduate Program Handbook (https://ntp.neuroscience.wisc.edu/handbook) is the repository for all of the program’s policies and requirements.

PRIOR COURSEWORK

Graduate Work from Other Institutions

With program approval credits from former graduate institutions may be allowed to count toward degree. Coursework earned five or more years prior to admission to a master’s degree is not allowed to satisfy requirements.

UW–Madison Undergraduate

With program approval credits from graduate-level courses (numbered 300 or above) taken as an undergraduate at UW–Madison may be allowed to count toward degree up to 7 credits. Coursework earned five or more years prior to
admission to a master’s degree is not allowed to satisfy requirements.

**UW–Madison University Special**

With program approval, coursework numbered 300 or above taken as a UW–Madison Special student may be allowed to count toward the degree up to 15 credits. Coursework earned five or more years prior to admission to a master’s degree is not allowed to satisfy requirements.

**PROBATION**

The Graduate School regularly reviews the record of any student who earned grades of BC, C, D, F, or Incomplete in a graduate course (300 or above), or grade of U in research credits. This review could result in academic probation with a hold on future enrollment or in being suspended from the Graduate School.

**ADVISOR / COMMITTEE**

An advisory committee of five or more tenure-track or tenured faculty members will oversee your graduate education. During the first year, before an advisory committee has been formed and a major professor selected, the First-Year Advisory Committee will serve as your advisor. The First-Year Advisory Committee will help you select courses, laboratory rotations, and your major professor, and they can assist you with other issues that may arise during the first year.

After you have chosen a lab, your major professor will help you in choosing the other members of your advisory committee. Choose this committee carefully, taking time to discuss potential members with faculty and other students. Selection of a major professor and the additional four members of the advisory committee should be completed by the end of March of the first year. At least five members of the committee must be tenure-track or tenured professors at UW–Madison. At least three members of the committee should be members of the program. To ensure that advisory committees reflect a broad perspective, at least three different areas of neuroscience or approaches to neuroscience must be represented on the committee. Examples of different areas include behavior/cognition, development, synaptic transmission/membrane excitability. Examples of different approaches include electrophysiology, genetic/model organisms, biochemistry/pharmacology, human brain imaging, stem cells. The student is responsible for describing how the proposed committee represents at least three areas/approaches. The composition of each student’s advisory committee will be reviewed and must be approved by the First-Year Advisory Committee. All changes to the makeup of your advisory committee, must be approved by the First-Year Advisory Committee. N&PP students are required to have at least one member of the N&PP Steering Committee represented on their thesis advisory committee.

In order to have your committee approved you must fill out and turn in the NTP Advisory Committee Approval Form (https://ntp.wiscweb.wisc.edu/wp-content/uploads/sites/81/2017/02/NTP-ADVISORY-COMMITTEE-APPROVAL-FORM.doc), which is found on the NTP website (https://ntp.neuroscience.wisc.edu/forms). After you return the form to the NTP office, the First-Year Advisory Committee will review your proposed committee and approve your committee or make suggestions for additional members to ensure a broad perspective.

The advisory committee will meet with you once each semester before you become a dissertator (during the first four or five academic semesters) and once each year after you become a dissertator to review your progress. At least four members of the committee must be present at each meeting. Your major professor chairs the advisory committee and will write a report (https://ntp.wiscweb.wisc.edu/wp-content/uploads/sites/81/2017/10/Advisory-Committee-Report-12.12.14.doc) that summarizes each meeting. You should review each report and discuss it with your major professor. Every report must be signed by you and your major professor and becomes part of your permanent record. The summary reports are used by the steering committee, program faculty, and director to monitor progress. If you believe the report does not describe your progress accurately or is in error in some other respect, you should bring these concerns to the attention of your major professor immediately. If a satisfactory resolution cannot be achieved, you should inform the First-Year Advisory Committee, which will assist you in deciding whether to ask for a review by the steering committee. The First-Year Advisory Committee can handle any issues or problems that arise after the first year and are not resolved by your advisory committee. An Advisory Committee Report form (https://ntp.wiscweb.wisc.edu/wp-content/uploads/sites/81/2017/10/Advisory-Committee-Report-12.12.14.doc) is shown in the appendix of the Handbook (https://ntp.wiscweb.wisc.edu/handbook) and can be found on the NTP website (https://ntp.neuroscience.wisc.edu/forms).

Once a committee is formed you are required to have a committee meeting every semester.

For each meeting you have there is a required form you must fill out to find those forms see this link (https://ntp.neuroscience.wisc.edu/forms).

**CREDITS PER TERM ALLOWED**

12 credits

**TIME CONSTRAINTS**

Master’s degree students who are absent for five or more years will not be given credit for prior work.

**OTHER**

All admitted students are funded and receive a stipend. The stipend rate is set by the program.

**PROFESSIONAL DEVELOPMENT**

**GRADUATE SCHOOL RESOURCES**

Take advantage of the Graduate School’s professional development resources (https://grad.wisc.edu/pd) to build skills, thrive academically, and launch your career.

**LEARNING OUTCOMES**

1. Develop the knowledge base necessary for a career as an independent, professional scientist.
2. Receive training in responsible conduct of research, and will learn and foster principles of ethical and professional conduct.
Faculty: Professor Mary Halloran (director). For a comprehensive faculty list, visit the program website (https://ntp.neuroscience.wisc.edu/faculty-trainers).