NEUROSCIENCE, MS

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 PhD degree in neuroscience or the MD/PhD 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 faculty members selected by the student in consultation with the major professor. During the first year, students complete three laboratory rotations.

The central forum for intellectual exchange in the program is a neuroscience seminar, which meets weekly and is attended by neuroscience students and faculty. During an academic year, members of the program choose 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 PhD 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 PhD degree in the program, more than 95% have careers in biomedical science.

NEUROSCIENCE & PUBLIC POLICY PROGRAM

The Neuroscience & Public Policy Program (N&PP) offers three integrated degree pathways 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 PhD degree in neuroscience as well as a master of public affairs (MPA), a master of international public affairs (MIPA), or juris doctorate (JD). In each of the degree tracks, the program brings together faculty from neuroscience, public policy, bioethics, sociology, 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 and public policy program, including admissions and program requirements, please visit the program website (https://npp.wisc.edu/).

ADMISSIONS

ADMISSIONS

Students may not apply directly for the master's degree, and should instead see the admissions information for the PhD. (https://guide.wisc.edu/graduate/medicine-public-health-school-wide/neuroscience-phd/)

FUNDING

FUNDING

GRADUATE SCHOOL RESOURCES

The Bursar's Office provides information about tuition and fees associated with being a graduate student. Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information is available from the Graduate School. Be sure to check with your program for individual policies and restrictions 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://ntp.neuroscience.wisc.edu/ntp-resources/).

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum degree requirements (https://guide.wisc.edu/graduate/#requirementstext) and policies (https://guide.wisc.edu/graduate/#policiestext), 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

Accelerated: Accelerated programs are offered at a fast pace that condenses the time to completion. Students typically take enough credits aimed at completing the program in a year or two.

Evening/Weekend: Courses meet on the UW–Madison campus only in evenings and/or on weekends to accommodate typical business schedules. Students have the advantages of face-to-face courses with the flexibility to keep work and other life commitments.

Face-to-Face: Courses typically meet during weekdays on the UW-Madison Campus.

Hybrid: These programs combine face-to-face and online learning formats. Contact the program for more specific information.

Online: These programs are offered 100% online. Some programs may require an on-campus orientation or residency experience, but the courses will be facilitated in an online format.

CURRICULAR REQUIREMENTS

Requirement	Detail
Minimum Credit Requirement	30 credits
Minimum Residence Credit Requirement	16 credits
Minimum Graduate Coursework Requirement	15 credits must be graduate-level coursework. Refer to the Graduate School: Minimum Graduate Coursework (50%) Requirement policy: https://policy.wisc.edu/library/UW-1244 (https://policy.wisc.edu/library/UW-1244/).
Overall Graduate GPA Requirement	3.00 GPA required. Refer to the Graduate School: Grade Point Average (GPA) Requirement policy: https://policy.wisc.edu/library/UW-1203 (https://policy.wisc.edu/library/UW-1203/).
Other Grade Requirements	n/a
Assessments and Examinations	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

Code	Title	Credits
Core Courses		
NTP/ NEURODPT 610	Cellular and Molecular Neuroscience	4
NTP/NEURODPT/ PSYCH 611	Systems Neuroscience	4
NTP 700	Professional Development for Biomedical Graduate Students	1
NTP 701	Experimental Design and Statistical Methodology	1
One Mid-level Molecular/Cellular/Developmental Neuroscience Course		
Complete at least 1 credit from following:		1-4
B M E/ MED PHYS/ PHMCOL-M/PHYSICS/ RADIOL 619	Microscopy of Life	
NEUROL 735	Neurobiology of Disease	
NTP 675	Special Topics	
NEURODPT 629	Molecular and Cellular Mechanisms of Memory	
NEURODPT/ ZOOLOGY 765	Developmental Neuroscience	
PHMCOL-M 781	Molecular and Cellular Principles in Pharmacology	
ZOOLOGY 604	Computer-based Gene and Disease/Disorder Research Lab	
One Mid-level Systems/Behavioral Neuroscience Course		
Complete at least 1 credit from following:		1-4
B M E 601	Special Topics in Biomedical Engineering	
CS&D 850	Hearing Science I: Basic Acoustics and Psychoacoustics	
COMP SCI/B M I/ PSYCH 841	Computational Cognitive Science	
KINES 713	Neural Basis of Normal and Pathological Movement	
KINES 721	Neural Basis for Movement	
KINES 861	Principles of Motor Control and Learning	
NTP 677	Basic Sleep Mechanisms and Sleep Disorders: from Neurobiology to Sleep Medicine	
NTP 675	Special Topics	
MED PHYS 651	Methods for Neuroimaging Research	
PSYCH 711	Current Topics in Psychology [1]	
PSYCH 733	Perceptual and Cognitive Sciences [2]	
PSYCH 954	Seminar-Physiological Psychology	
PSYCH 918	Seminar-General Psychology	
Seminar		
Students in our program are expected to be enrolled in the following seminar every Fall/Spring semester; complete 4 credits.		4
NTP 900	Neuroscience Seminar: Current Topics in Neurobiology	
Research Credits		
Complete at least 8 credits of the following research course: [3]		8
NTP 990	Research and Thesis	
Additional Coursework		
Complete other advanced courses or additional research credits as recommended by the advisory committee to meet the minimum credit requirement.		6
Total Credits		**30**

[1] PSYCH 711 is a special topics course. The following topics under this course listing are approved to take and will count as a midlevel:
- Cognitive Neuroscience of Attention and Memory
- Introduction to Neural Network Modeling of Cognition

[2] Two PSYCH 733 courses (8 weeks each) must be taken to meet the Mid-level Systems/Behavioral Neuroscience requirement. The following course topics are approved:
- Cognitive Neuroscience of Reading and Dyslexia
- Knotty Problems in Psycholinguistics

[3] Students in our program are expected to be enrolled in NTP 990 every Fall/Spring/Summer semester. When students enroll in NTP 990, they should plan to enroll for the appropriate number of credits to reach the minimum required credits each semester to have full-time student status. See "Credits Per Term Allowed" policy (https://guide.wisc.edu/graduate/medicine-public-health-school-wide/neuroscience-phd/#policiestext) for further information on full-time registration.

POLICIES

GRADUATE SCHOOL POLICIES

The Graduate School's Academic Policies and Procedures (https://grad.wisc.edu/acadpolicy/) serve as the official document of record for Graduate School academic and administrative policies and procedures and are updated continuously. Note some policies redirect to entries in the official UW-Madison Policy Library (https://policy.wisc.edu/). Programs may set more stringent policies than the Graduate School. Policies set by the academic degree program can be found below.

MAJOR-SPECIFIC POLICIES

PRIOR COURSEWORK

Graduate Credits Earned at Other Institutions

With program approval, credits from former graduate institutions may be allowed to transfer. Coursework earned ten years or more prior to admission to a master's or doctoral degree is not allowed to satisfy requirements.

Undergraduate Credits Earned at Other Institutions or UW-Madison

With program approval, up to 7 credits from graduate level courses (numbered 500 or above and with the "Grad 50%" attribute) taken as an undergraduate at UW–Madison or another institution may be allowed to transfer. Coursework earned ten years or more prior to admission to a master's or doctoral degree is not allowed to satisfy requirements.

Credits Earned as a Professional Student at UW-Madison (Law, Medicine, Pharmacy, and Veterinary careers)

Refer to the Graduate School: Transfer Credits for Prior Coursework (https://policy.wisc.edu/library/UW-1216/) policy.

Credits Earned as a University Special Student at UW–Madison

With program approval, up to 15 credits in coursework numbered 500 or above taken as a UW–Madison University Special student may be allowed to transfer. However, these credits are not allowed to count toward the 50% graduate coursework minimum unless numbered 700 or above or are taken to meet the requirements of a capstone certificate and has the "Grad 50%" attribute. Coursework earned ten years or more prior to admission to a master's or doctoral degree is not allowed to satisfy requirements.

PROBATION

Failure to pass the preliminary examination before the start of the spring semester of the third year will result in being placed on probation. Two consecutive semesters of enrollment on probation precludes continuation in the program.

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. Neuroscience and Public Policy students are required to have at least one member of the Neuroscience and Public Policy Steering Committee represented on their thesis advisory committee.

In order to have your committee approved you must fill out and turn in the Neuroscience Training Program 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 Neuroscience Training Program 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.neuroscience.wisc.edu/handbook/) and can be found on the Neuroscience Training Program website (https://ntp.neuroscience.wisc.edu/forms/).

Once a committee is formed you are required to have a committee meeting every semester until you become a dissertator. As a dissertator you are required to have one meeting per year until your thesis defense.

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

Full-time registration is required of all students in the program during the fall and spring semesters. The Graduate School considers full-time registration for students who are not dissertators (please see below) to be 8–15 graduate-level credits (numbered 300 and above, no audits or pass-fail) during each of the fall and spring semesters. Though the maximum number of credits is 15, we strongly encourage students to enroll for a maximum of 12 credits. In the summer, students in the program who are not dissertators may register for 2 credits during the 8-week summer session, which is not considered full-time registration. If you decide to register for 2 research credits, you are responsible for knowing about other obligations that may be affected by part-time registration in the summer, such as visa regulations or those of certain funding agencies that may require continuous full-time registration for the calendar year (see Graduate School Academic Guidelines for additional caveats). You are eligible to become a dissertator after you have passed the program's preliminary examination and have met the Graduate School's residency requirements.

TIME LIMITS

The final dissertation must be completed by the end of the fifth academic year. If the dissertation is not completed by the end of the summer following the sixth academic year, the student's advisory committee must meet with the steering committee to present a written statement explaining why the dissertation has not been completed.

GRIEVANCES AND APPEALS

These resources may be helpful in addressing your concerns:

- Bias or Hate Reporting (https://doso.students.wisc.edu/bias-or-hate-reporting/)
- Graduate Assistantship Policies and Procedures (https://hr.wisc.edu/policies/gapp/#grievance-procedure)
- Hostile and Intimidating Behavior Policies and Procedures (https://hr.wisc.edu/hib/)
  - Office of the Provost for Faculty and Staff Affairs (https://facstaff.provost.wisc.edu/)
- Employee Assistance (http://www.eao.wisc.edu/) (for personal counseling and workplace consultation around communication and conflict involving graduate assistants and other employees, post-doctoral students, faculty and staff)
- Employee Disability Resource Office (https://employeedisabilities.wisc.edu/) (for qualified employees or applicants with disabilities to have equal employment opportunities)
- Graduate School (https://grad.wisc.edu/) (for informal advice at any level of review and for official appeals of program/departmental or school/college grievance decisions)
- Office of Compliance (https://compliance.wisc.edu/) (for class harassment and discrimination, including sexual harassment and sexual violence)
- Office Student Assistance and Support (OSAS) (https://osas.wisc.edu/) (for all students to seek grievance assistance and support)
- Office of Student Conduct and Community Standards (https://conduct.students.wisc.edu/) (for conflicts involving students)
- Ombuds Office for Faculty and Staff (http://www.ombuds.wisc.edu/) (for employed graduate students and post-docs, as well as faculty and staff)
- Title IX (https://compliance.wisc.edu/titleix/) (for concerns about discrimination)

Grievance Policy for Graduate Programs in the School of Medicine and Public Health

Any student in a School of Medicine and Public Health graduate program who feels that they have been treated unfairly in regards to educational decisions and/or outcomes or issues specific to the graduate program, including academic standing, progress to degree, professional activities, appropriate advising, and a program's community standards by a faculty member, staff member, postdoc, or student has the right to complain about the treatment and to receive a prompt hearing of the grievance following these grievance procedures. Any student who discusses, inquiries about, or participates in the grievance procedure may do so openly and shall not be subject to intimidation, discipline, or retaliation because of such activity. Each program's grievance advisor is listed on the "Research" tab of the SMPH intranet (https://intranet.med.wisc.edu/).

Exclusions

This policy does not apply to employment-related issues for Graduate Assistants in TA, PA and/or RA appointments. Graduate Assistants will utilize the Graduate Assistantship Policies and Procedures (https://hr.wisc.edu/policies/gapp/) (GAPP) grievance process to resolve employment-related issues.

This policy does not apply to instances when a graduate student wishes to report research misconduct. For such reports refer to the UW-Madison Policy for Reporting Research Misconduct for Graduate Students and Postdoctoral Research Associates (https://research.wisc.edu/kb-article/?id=84924).

Requirements for Programs

The School of Medicine and Public Health Office of Basic Research, Biotechnology and Graduate Studies requires that each graduate program designate a grievance advisor, who should be a tenured faculty member, and will request the name of the grievance advisor annually. The program director will serve as the alternate grievance advisor in the event that the grievance advisor is named in the grievance. The program must notify students of the grievance advisor, including posting the grievance advisor's name on the program's Guide page and handbook.

The grievance advisor or program director may be approached for possible grievances of all types. They will spearhead the grievance response process described below for issues specific to the graduate program, including but not limited to academic standing, progress to degree, professional activities, appropriate advising, and a program's community standards. They will ensure students are advised on reporting procedures for other types of possible grievances and are supported throughout the reporting process. Resources (https://grad.wisc.edu/current-students/#reporting-incidents) on identifying and reporting other issues have been compiled by the Graduate School.

Procedures

1. The student is advised to initiate a written record containing dates, times, persons, and description of activities, and to update this record while completing the procedures described below.
2. If the student is comfortable doing so, efforts should be made to resolve complaints informally between individuals before pursuing a formal grievance.
3. Should a satisfactory resolution not be achieved, the student should contact the program's grievance advisor or program director to discuss the complaint. The student may approach the grievance advisor or program director alone or with a UW-Madison faculty or staff member. The grievance advisor or program director should keep a record of contacts with regards to possible grievances. The first attempt is to help the student informally address the complaint prior to pursuing a formal grievance. The student is also encouraged to talk with their faculty advisor regarding concerns or difficulties.
4. If the issue is not resolved to the student's satisfaction, the student may submit a formal grievance to the grievance advisor or program director in writing, within 60 calendar days from the date the grievant first became aware of, or should have become aware of with the exercise of reasonable diligence, the cause of the grievance. To the fullest extent possible, a grievance shall contain a clear and concise statement of the grievance and indicate the issue(s) involved, the relief sought, the date(s) the incident or violation took place, and any specific policy involved.
5. On receipt of a written grievance, the following steps will occur. The final step must be completed within 30 business days from the date the grievance was received. The program must store documentation of the grievance for seven years. Significant grievances that set a precedent may be stored indefinitely.
    a. The grievance advisor or program director will convene a faculty committee composed of at least three members to manage the grievance. Any faculty member involved in the grievance or who feels that they cannot be impartial may not participate in the committee. Committee composition should reflect diverse viewpoints within the program.
    b. The faculty committee, through the grievance advisor or program director, will obtain a written response from the person or persons toward whom the grievance is directed. The grievance advisor or program director will inform this person that their response will be shared with the student filing the grievance.
    c. The grievance advisor or program director will share the response with the student filing the grievance.
    d. The faculty committee will make a decision regarding the grievance. The committee's review shall be fair, impartial, and timely. The grievance advisor or program director will report on the action taken by the committee in writing to both the student and the person toward whom the grievance was directed.
6. If either party (the student or the person or persons toward whom the grievance is directed) is unsatisfied with the decision of the program's faculty committee, the party may file a written appeal to the SMPH senior associate dean for basic research, biotechnology and graduate studies within 10 business days from the date of notification of the program's faculty committee. The following steps will occur:
    a. The grievant will be notified in writing, within 5 business days of the written appeal, acknowledging receipt of the formal appeal and establishing a timeline for the review to be completed.
    b. The senior associate dean or their designee may request additional materials and/or arrange meetings with the grievant and/or others. If meetings occur, the senior associate dean or their designee will meet with both the grievant and the person or persons toward whom the grievance is directed.
    c. The senior associate dean or their designee will assemble an ad hoc committee of faculty from outside of the student's graduate program and ask them to prepare a written recommendation on whether to uphold or reverse the decision of the program on the student's initial grievance. The committee may request additional materials and/or arrange meetings with the grievant and/or others. If meetings occur, the committee will meet with both the grievant and the person or persons toward whom the grievance is directed.
    d. The senior associate dean or their designee will make a final decision within 20 business days of receipt of the committee's recommendation.
    e. The SMPH Office of Basic Research, Biotechnology, and Graduate Studies must store documentation of the grievance for seven years. Grievances that set a precedent may be stored indefinitely.
7. The student may file an appeal of the School of Medicine and Public Health decision with the Graduate School. See the Grievances and Appeals section of the Graduate School's Academic Policies and Procedures (https://grad.wisc.edu/documents/grievances-and-appeals/).

Time Limits

Steps in the grievance procedures must be initiated and completed within the designated time periods except when modified by mutual consent. If the student fails to initiate the next step in the grievance procedure within the designated time period, the grievance will be considered resolved by the decision at the last completed step.

OTHER

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

PROFESSIONAL DEVELOPMENT

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

LEARNING OUTCOMES

1. (Knowledge and Skills) Develop the knowledge base necessary for a career as an independent, professional scientist.
2. (Professional and Ethical Conduct) Receive training in responsible conduct of research, and will learn and foster principles of ethical and professional conduct.