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Notice: Policies set forth in this handbook replace all previous versions (except for previous course requirements) and effective only for students in the Neuroscience or Biomedical Science Degree Program in the Department of Integrative Physiology and Neuroscience (IPN). In addition, all WSU Graduate School requirements must be met to earn a degree. For an exception to the policy set forth in this handbook, please contact the Neuroscience Program Committee. Any changes or clarifications to this manual should be directed to the Neuroscience Program, Department of IPN, College of Biomedical Medicine, Washington State University, Pullman, WA 99164-7620, Phone 509-335-6624. Published 08/2022.

GRADUATE PROGRAM OVERVIEW

INTRODUCTION TO THE GRADUATE PROGRAMS

Welcome to Washington State University (WSU) and the Neuroscience/Biomedical Science Graduate Programs. And congratulations on becoming a Cougar! We believe that WSU is a special institution that not only will help you achieve your life and career goals, but is also a place where you will develop friends and colleagues that will last a lifetime. We hope you have a wonderful experience here at WSU.

Earning a graduate degree should be fun, rewarding and be seen as a privilege. It is a special time in your life when you get paid to learn, do research, pursue new ideas, and develop unique knowledge that you can impart to the world. Those who engage do so because of the intellectual satisfaction it brings, the excitement of discovery, the freedom to make your own work schedule, the opportunities for travel, the pleasure of being part of an international community of like-minded people, and the possibility that your findings might have a positive impact on the human condition!

PURPOSE OF A DOCTORAL EDUCATION

The only reason you are reading this is because you have an interest in graduate education, but have you thought about what the real purpose of a doctoral education is? One answer our faculty ascribes to is doctoral education is necessary to prepare the next generation of disciplinary leaders, or *stewards*. Stewardship of a discipline lies at the core of scholarly pursuits, and a disciplinary steward needs to develop both the habits of mind and the technical ability to tackle three related areas: the **generation, conservation, and transformation of knowledge**.

- ***Knowledge Generation***

The Doctoral degree is, at its heart, a research degree. Through conducting credible and verifiable research that makes a unique contribution to a field of science, our students learn how to ask and frame important questions that are at present unanswered. This intimate involvement in the generation of new knowledge provides students with a unique perspective that enables them to critically assess claims by themselves and others regarding the worthiness of new knowledge and ideas.

- ***Knowledge Conservation***

Stewardship also requires an understanding of the history and foundational ideas of the discipline. Disciplines evolve continuously, and stewards have responsibility for maintaining continuity, stability, and vitality of the discipline. A Ph.D. recipient should understand the foundations of the field – which ideas to keep, which ideas to reject. Moreover, a steward should understand how their discipline fits into a broader intellectual landscape, have a respectful understanding of the questions and paradigms of other fields, and understand how their discipline can speak to important questions.

- ***Knowledge Transformation***

Transformation speaks of the importance of representing and communicating ideas effectively and clearly. Transformation implies teaching in the broadest sense. Whether working in a university research laboratory, classroom, non-profit or governmental organization, industry, or policy arena, a disciplinary steward must be able to convey the information and value of their knowledge and skills to a multitude of audiences. Transformation also implies application. Knowledge is used in a variety of settings and a steward must understand the range of uses to which knowledge can be applied. Such communication calls upon skills that ought to be developed during the apprenticeship period. This implies the ability to communicate in both oral and written forms to technical and lay audiences. It also suggests that stewards must understand how to appreciate and communicate across traditional disciplinary boundaries.

The use of the term “steward” is deliberately intended to convey a role that transcends a mere collection of accomplishments and skills. **A steward is a person entrusted with care of the discipline by those in the discipline on behalf of those in and beyond the discipline.** There are conservative aspects to the term, implying the preservation of the past. A steward thinks about the continuing health of the discipline, and how to preserve the best of the past, the heart and essence of the field, for those who will follow. But there are also important forward-looking meanings; stewardship does not imply stasis. A steward is a caretaker who trains a critical eye toward the future and must be willing to take risks and move the discipline forward. Ultimately, stewards consider how to prepare and initiate the next generation of leaders.

Finally, in all their work, disciplinary stewards act with responsibility and according to the highest ethical standards. *Always remember that failure to maintain integrity, honesty, and ethical behavior is the certain road to destroying all that we work for and hold in high regard.*

(Adapted from the “Invitation for Participation,” *Carnegie Initiative on the Doctorate*)

NEUROSCIENCE GRADUATE PROGRAM MISSION STATEMENT

Neuroscience is the study of the brain and nervous system. The brain is arguably the most complex and mysterious structure in the universe. To fully understand brain and nervous system function, studies ranging from the molecular, through the cellular, to the systems and social levels are required. This information in turn helps us understand how organisms, via cellular mechanisms, physiological regulation, and behavior, successfully engage with their physical and social environment. Because of its very broad perspective, the study of neuroscience is not limited by a particular disciplinary approach, rather it utilizes tools and techniques from an extensive range of disciplines, including chemistry, biophysics, biochemistry, genetics, physiology, pharmacology, anatomy, psychology, mathematics, engineering, and even social sciences. This broad perspective requires input from a variety of traditional disciplines, thus researchers from diverse academic fields are welcomed participants in the Neuroscience Program, providing their academic interests are driven by a desire to understand how the physical substrates of the brain and nervous system enables an organism to function and thrive.

MISSION OF THE WSU GRADUATE PROGRAM IN NEUROSCIENCE

The primary mission of the Neuroscience Program at WSU is to improve human and animal health and well-being through a deeper understanding of the brain and nervous system. To achieve this mission, faculty in the Program not only direct original research targeted to understanding some of the most vexing issues in neuroscience, they also focus on educating graduate students in current concepts that underlie brain and nervous system function as well as training students in the knowhow and skills necessary to develop a career in which they can contribute to both the generation of new knowledge and dissemination of existing knowledge of neuroscience.

Graduates of the Neuroscience Program are prepared for careers in teaching, research, and public service. Potential employers include colleges and universities, pharmaceutical and biotechnology companies, governmental agencies, among others. Graduates are capable of teaching neuroscience and related topics to undergraduate, graduate, and professional students in the health sciences and are trained to pursue research in neuroscience with a specialization in an area of their choice. Within research, students are trained to identify significant research problems and then formulate logical and comprehensive strategies for studying these problems. They have extensive knowledge of the scientific method and an appreciation for the demands that this method makes on the integrity of scientists. Upon graduation, they will be one of the world’s most credible experts in the area of their thesis research.

ACCOMPLISHING THE MISSION OF THE GRADUATE PROGRAM IN NEUROSCIENCE

The Master of Science (M.S.) degree program typically takes 2-3 years, whereas the Doctor of Philosophy (Ph.D.) degree program takes 4-6 years. Both the M.S. and Ph.D. degrees require an experimentally based thesis – the main difference being the greater depth and breadth of the research needed to fulfill the requirements of the Ph.D. project.

In addition to their research project, students in both the M.S. and Ph.D. program students take a series of classes on an array of neuroscience topics. However, over their active careers, our graduates will learn more information about neuroscience after completing graduate school than during graduate school. Because of this, our program focuses on developing skills that reinforce lifetime learning habits and critical evaluation and analysis of new information. While some background materials may be delivered via traditional lectures, most courses are discussion based and concentrate on critical analysis of topical readings from the primary literature. In addition to classroom-based discussions, critical learning skills are reinforced through a myriad of associated activities such as seminars, workshops, research forums, and journal clubs.

Finally, to complement their disciplinary knowledge about neuroscience, our students are also trained in a variety of professional skills (presentation, writing, networking, mentorship, ethics, leadership, among others), that will enhance their professional success regardless of the career path they choose.

RESEARCH FACILITIES

Graduate Faculty members of the Program in Neuroscience are located throughout the WSU multi-campus system, including Pullman, Spokane and Vancouver campuses, as well as the University of Idaho (UI). The heart of the program in Pullman is in a modern (completed 2013) 128,000 ft² research building designed with neuroscience research in mind. In addition, at the urban campuses (Spokane and Vancouver), specialized facilities unique to the research foci at the campuses are present (for example, the Sleep and Performance Research Center in Spokane). The laboratories participating in the Program provide faculty members and students with cutting-edge technology for the investigation of neuroscience questions. Examples include state-of-the-art confocal and fluorescence microscopes, high end in vivo imaging systems, computerized image analysis equipment and software, cell culture laboratories, cell sorters and harvesters, extensive in vitro and in vivo electrophysiological technology, biochemical instrumentation encompassing a spectrum of techniques from various types of chromatography to automated peptide synthesis, numerous instruments to help perform and automate molecular biological approaches, sophisticated behavioral testing equipment, and a world-class vivarium with rooms specifically designed to meet the demands of neuroscience research in a humane and ethical manner. In addition to top-of-the-line equipment, other WSU facilities contribute to a successful research environment. Laboratories have direct terminal access to the University Computer Network, the University has a well-equipped imaging center with electron and confocal microscopes, there are modern clinical technologies available through collaborators in the Biomedical hospital, and access to numerous core sequencing, transgenic, and general assay laboratories.

GRADUATE PROGRAM ADMISSION REQUIREMENTS

To be eligible for admission, candidates must meet general WSU requirements outlined in the *Graduate Study Bulletin* in effect at the time of their admission, as well as the Neuroscience Program requirements. Applicants for admission to the Neuroscience Program must have a minimum grade point average of 3.0 (on a 4 point scale) either on the basis of the last 60 graded semester hours or 90 graded quarter hours of undergraduate study or on the basic science portion (first 60 credit hours) of a professional curriculum. Applicants generally will be expected to have completed courses in inorganic chemistry, organic chemistry, biochemistry, calculus, physics, statistics, and a minimum of three (3) courses in different areas of the biological sciences. Deficiencies in any of these areas must be cleared during the period of graduate study before the Preliminary Exam, usually within the first two (2) years of study.

The IPN Graduate Studies Committee (GSC) follows the policies outlined below when considering admission of students to the Graduate Programs in Neuroscience or Biomedical Science: Integrative Physiology.

ADMISSION TO THE GRADUATE PROGRAM

- **Doctor of Philosophy Candidates in Neuroscience**
 - The Graduate Studies Committee (GSC) selects four to eight (4-8) new students a year to start the Ph.D. program (the number depends on the availability of funds and open spots in research labs).

- Admissions is competitive and an array of factors, including undergraduate course work and GPA, letters of recommendation, personal goals statement, published works, among others, are considered in selection of candidates that best match the research and scholarly focus of the program and current openings in the various research labs.
- The GSC begins the applicant review process as soon as the applicant's file is complete. December 1 is the priority deadline for consideration. A completed file consists of:
 - an application to the WSU Graduate School
 - copies of all previous academic transcripts (unofficial versions are acceptable until admission then an official copy is needed)
 - three (3) letters of recommendation
 - a resume or curriculum vitae (CV)
 - Personal Statement: Describe why you are interested in studying neuroscience and what areas of neuroscience most interest you. Also, clearly identify a minimum of 3 faculty members you think you would be interested in working with and explain why. If admitted to the program you will have the ability to refine your choice of faculty mentors while doing lab rotations, but we want to know that you have identified faculty whose work you find compelling. Finally, include in your personal statement a description an achievement (academic or not) that you are proud of and discuss how you reached your goal, and any obstacles you had to overcome to reach it. Conversely, tell us about a time when you didn't achieve a goal and what you learned from the experience (for this section maximum word length is 350 words).
 - Writing Statement: Describe a major finding in neuroscience and/or biomedicine over the past five (5) years and explain why you think it was important (maximum word length of 350 words). Be sure to cite references used in the writing statement (up to 10).
 - International students must also include a TOEFL score (*TOEFL minimum scores required: Paper-based Exam/600; Computer-based Exam/250; Internet-based Exam/100*). *Applicants with only a minimum TOEFL score may not be competitively ranked for admission.*
 - Applicants are notified of acceptance on a rolling basis. Although students may still apply for admission after December 1, stipends are awarded from January through March and may not be available for late applicants even though they may be qualified candidates.
 - Because core classes are offered only once a year, class work for the program is sequenced for students to start in the fall semester.
 - Further details of the admissions process are in the *WSU Graduate Study Bulletin*. You are also welcome to work with the Program office to ensure your applications is complete and fully considered (grad.neuro@wsu.edu).
 - ***Doctor of Philosophy Candidates in Biomedical Science***
 - Admissions to the Program in Biomedical Science: Integrative Physiology is essentially the same as that for the Program in Neurosciences except that the applicant must identify a mentor prior to the admissions process, and the mentor must agree to sponsor the candidate. Mentors who agree to support a student must provide a letter to the GSC indicating their willingness to sponsor the student in their laboratory. Students in the Biomedical Science Program are not required to do rotation projects, but otherwise follow the same general programmatic requirements as those for the Neuroscience Program.
 - ***Master's Candidates in Neuroscience and Biomedical Science***
 - Because the primary focus of the Graduate Programs in Neuroscience and Biomedical Science: Integrative Physiology is to train independent scientific researchers, the programs do not actively promote the M.S. degree. However, because in certain circumstances agreeable to both the student and the programs, a M.S. degree is desirable, a M.S. degree is available.

- Students applying to the M.S. programs must submit an application identical to that for a Ph.D. except for the differences listed below.
- The same criteria are used to judge whether a student is acceptable to the M.S. program as to the Ph.D. program.
- For a student to enter the M.S. program they must identify a mentor, who agrees to sponsor the student, before they can be admitted. Because the time to complete a M.S. degree is short (2 years), M.S. students do not do rotations. Thus, the student and the program need to know exactly what the student intends to do for a M.S. project when they arrive.
- The faculty member identified as the mentor must write a Letter of Support to the GSC indicating the mentor is willing to sponsor the student in their laboratory. For a faculty member to sponsor a M.S. student, they are typically required to demonstrate at least two (2) years remaining on an externally funded project.
- As a matter of policy, the IPN (or the Neuroscience Program) typically does not provide financial support for M.S. students (Teaching Assistant, TA, or Research Assistant, RA). Thus, M.S. students typically must provide their own financial support for living expenses and tuition unless the mentor is willing to provide such support. Awarding an RA from mentor derived funds is at the discretion of the mentor.

RESEARCH AND TEACHING ASSISTANTSHIPS (RA AND TA)

Doctoral students in the program receive assistantships for a minimum of 5 years, after which assistantships may or may not continue to be assigned. Assistantships may be either for research (RA) or teaching (TA). Typically, first year assistantships are RAs, and second year assistantships are TAs (with assigned TA duties). Assistantships in more senior years may be either a RA or a TA depending on the availability of funding and needs of the program. Assistantships come with a tuition waiver, but the student needs to establish residency in Washington State to continue the waiver beyond the first year. The assistantship also includes student health insurance and any residual tuition and fees.

Assistantship appointments are awarded on a semester basis; thus, awards are made separately for the fall semester (~August 16th - December 31st) and spring semester (~January 1st - May 15th). RA support for the summer months is available and is usually awarded for three (3) months. Those on partial appointments earn a pro-rated salary which may be supplemented by funds from their mentor or other outside agencies to bring their total stipend to the levels indicated below.

The current annual stipend is \$27,426. (Note health insurance and all tuition and fees are covered by the Program when the student is on an assistantship.)

All graduate assistants (RAs or TAs) on a departmental stipend **must carry a minimum** of 10 hours of credit per semester. If a student falls below 10 credit hours, the assistantship is canceled, and the student may be responsible for repayment of all or part of the tuition waiver.

Because incompletes and/or being put on academic probation may impact continued funding of TAs and RAs, it is important that students who accept assistantships /stipends understand the section in this handbook on Academic Standards (see page 27 of the complete Graduate Student Manual).

POLICIES REGARDING THE AWARDING OF ASSISTANTSHIPS

Typically first year students are awarded an RA and they can devote their full energies to class work, rotation projects, and starting their thesis research. Students should not be lax in getting these items moving forward, as responsibilities to the program, and programmatic testing begins in the second year, putting extra demands on the student's time.

In the second year, students are typically awarded a TA and are required to assist in at least one (1) course each semester (Fall / Spring). Typical courses requiring TAs are: Neurosci 301, 302, 305, 333, 403, 404, 409, 430 and Vet_Med 521, 522, 524. Other courses within the College and University may also be eligible for teaching assistant awards.

Once the student has passed their Preliminary Exam and advanced to candidacy they are expected to be supported by funds supplied by their mentor's research program. At this point the student can be expected to devote 100% of their energies to research projects in the laboratory of the mentor - either the student's project or other projects for which the mentor is funded. On occasion the student may be asked to assist in some departmental or programmatic function. Students should agree to these request (when reasonable) as part of their commitment to overall programmatic goals (it is part of maintaining collegial relationships in a professional environment).

It is possible that the department (or campus for those in Spokane or Vancouver) will have additional RA / TA stipends available to assign to senior graduate students (those who have advanced to candidacy). Selection for these stipends is based upon both performance as a graduate student and ability to assist in the class for which the TA is intended. In Pullman, each January the GSC requests from the faculty nominations for these RA / TA stipends awarded to senior graduate students for the following summer, fall, and spring semesters. These nominations can come from the faculty research mentor or may come at the request of a course director. However, the availability of assistantship funds can vary, thus funding from this source is not guaranteed.

EXPECTATIONS OF TEACHING / RESEARCH ASSISTANTS

Students are expected to be engaged full time with the program. Awarding of a TA or RA provides support for a student for a half-time (50%) position. Thus, a student is expected to contribute up to 20 hours per week to either teaching or research activities to support the purpose of the assistantship, and their remaining time to their research project. Note that the work required for the assistantship may or may not be related to the goals of the student's thesis project. Assistantship support is not considered compensation for time spent as a student in the classroom or on the student's thesis research. In other words, students are not directly paid to complete their thesis projects, but rather are given positions that allow them time to devote to pursuing their thesis studies. It is important for students to be aware that in order for them to be successful in the completion of their studies a minimum of 40 hours per week is required, and typically more than 40 hours will be needed on a frequent basis. In addition, given the nature of scientific research, on occasion students may be required to work longer than an 8 hour day, and at times work on weekends. Students are training for a professional position, and one element of a professional position is you do what is necessary to get the job accomplished.

If in the opinion of the Program the student is not making adequate progress towards completing their project in a timely manner, the Program may elect to not provide further assistantship funding.

WASHINGTON RESIDENCY REQUIREMENTS

Students supported by graduate assistantships must live in the state of Washington to be eligible for continued funding. Thus, U.S. citizens and those holding permanent residency will be expected to gain resident status in the state of Washington by the end of their first year to retain their eligibility for assistantship /stipend support. For residency information see: <http://gradschool.wsu.edu/Currentstudents/>. An individual who is eligible to vote in Washington, has a Washington driver's license, and has lived in Washington for 12 consecutive months is considered a resident. Non-U.S. citizens are exempt from the resident policy.

WORK AND VACATION

Students are expected to work full time in their engagement with the program (assistantship responsibilities and individual thesis research projects). Students should work with their advisor and advisory committee to outline the time required to accomplish the objectives of their project. It is advisable for the student to insist that their mentor and/or thesis committee establish both near term (<6 months) and far term (1-3 years) benchmarks that give guidance to the student so they know if they are making adequate progress towards the completion of their project.

It is also good practice that everyone has occasional down time to rest and recuperate and thus maintain a high level of performance when working. Therefore students on the equivalent of an annual appointment (12-month) should expect to have time off within reason (2-3 weeks/year). However, students should always inform their advisor when they plan to take time off, and **must** adjust their plans to the needs of their assistantship and the research projects in their mentor's laboratory.

LEAVE AND VACATION (Excerpted from Graduate School Document #12)

1. During the term of their appointments, all graduate student service appointees are expected to be at work each normal workday, *including periods when the University is not in session, with the exception of legal holidays designated by the Board of Regents*. Students holding summer appointments must be present during the period of the appointments. (An academic-year appointment and a two (2)-month appointment in the summer are equivalent to an annual (12-month) appointment. A three (3)-month appointment in the summer is possible and is the norm for graduate students in the Neuroscience Program.)
2. All University holidays are designated by the Board of Regents and are published on the University website.
3. Graduate Students on appointment do not earn annual leave or sick leave.

RESPONSIBLE CONDUCT OF RESEARCH

Mandatory training on the *Responsible Conduct of Research* is required of all graduate students. This is a web-based training located at myResearch.wsu.edu. Students are encouraged to take this training as soon as possible. The training will need to be repeated after a 5-year period.

For graduate students on assistantships, please note the following:

- 1) Students are not eligible for an assistantship until after the training is completed. However, new students who have not completed the training before their 1st appointment will receive a grace period of one (1) semester to take the training. In this case employment forms will only be completed for one (1) semester. Continuing employment forms will not be approved if the student has not completed the training by the second semester.
- 2) Should a student complete the training late in the semester and the employment forms are processed late, the student will be responsible for paying all late fees applied to the student's account before any waiver(s) are applied to the student account.

DESK ASSIGNMENT

Students will be assigned a desk close to the location of their rotation project. This desk assignment may change with each new rotation, or if the rotations are located near each other, the student may not need to move. Once a final mentor is selected, a final desk assignment will be made close to the lab of the mentor. Every attempt will be made to make the final assignment as physically close to the advisor's lab as possible, but final assignments may need to be made so as to not disrupt existing personnel.

COST OF STUDY

For the cost of tuition and fees see: <http://finaid.wsu.edu/cost-of-attendance/>. For graduate students residing in Washington while attending school, waivers are available that cover the in-state portion of tuition. Additionally, student fees are paid by their mentors or the department.

LIVING AND HOUSING COSTS

A variety of affordable housing is available off campus as well as on campus in single- and multiple-apartment units, in graduate student residence halls, and in family student quarters. Rents are slightly below the national average, depending on size and quality of accommodations. For additional information: <http://housing.wsu.edu/>

COURSE WITHDRAWAL AFTER THE 30TH DAY

No tuition adjustment for course withdrawals will be made beginning 30 calendar days after the start of the semester. For example, a student who is enrolled in 16 credit hours and withdraws after the fourth week from a 3-credit course and adds a 3-credit course is accountable for 19 hours. In this example, the student would owe for the 1 credit over 18 credits.

Full refunds of the additional per credit hour charges (for each credit over 18) are given if the credit load is reduced to 18 hours or fewer within the first 30 calendar days of the semester.

There is no time limit to remove an incomplete grade on courses numbered 500 and above unless you have a TA / RA Assistantship, and then you have only one (1) semester to remove it. However, failure to complete an "INCOMPLETE" grade could jeopardize stipend support.

TIME LIMITS FOR PROGRAM COMPLETION

- **M.S. Degree**

The time limit for use of graduate credit toward a M.S. degree is **six (6) years** from the beginning date of the earliest course applied toward the degree. The Graduate School recognizes some students engage in the program on a part-time basis, and thus completion of the degree may require a longer time. As appropriate, departments may request an extension of this time limit.

- **Ph.D. Degree**

The time limit for use of graduate credit toward a Ph.D. degree is **ten (10) years** from the beginning date of the earliest course applied toward the degree. The Graduate School recognizes that part-time students may require a longer completion period. As appropriate, departments may request an extension of this time limit.

STUDENT RIGHTS UNDER FERPA

NOTIFICATION OF STUDENT RIGHTS UNDER FERPA

Federal law requires Washington State University to annually notify students currently in attendance at the University of their rights under the Family Educational Rights and Privacy Act (FERPA). Under FERPA, a student has the right to:

1. Inspect and review their education records. "Education records" means those records that are directly related to a student and are maintained by Washington State University (WSU) or by a party acting for WSU; students should submit to the Assistant Registrar written requests that identify the record they wish to inspect. The Assistant Registrar will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the Office of Student Affairs, the student will be advised of the correct official to whom the request should be addressed.
2. Request the amendment of the student's education records to ensure that they are not inaccurate, misleading, or otherwise in violation of the student's privacy or other rights; students should write the University official responsible for the record, clearly identify the part of the record they want changed, and specify why it is inaccurate or misleading. If the University decides not to amend the record as requested by the student, the University will notify the student of the decision and advise the student of their right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.
3. Consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent; one exception which permits disclosure without consent is disclosure to school officials with legitimate educational interests. A school official is a person employed by the University in an administrative, supervisory, academic or research, or support staff position (including law enforcement unit personnel and health staff); a person or company with whom the University has contracted (such as an attorney, auditor, or collection agent); a person serving on the Board of Trustees; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing their tasks. A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill their professional responsibilities.
4. File with the Department of Education a complaint concerning alleged failures by WSU to comply with the requirements of FERPA; the name and address of the office that administers FERPA are: Family Policy Compliance Office, U.S. Department of Education, 400 Maryland Avenue, S.W., Washington, DC 20202-4605.

DIRECTORY INFORMATION

Washington State University may release directory information contained in a student's education records. "Directory Information" means information contained in an education record which would not generally be considered harmful or an invasion of privacy if disclosed. Directory information includes: name (including any former name), local and permanent addresses, telephone numbers, e-mail address(es), major and minor fields of study, class, participation in officially recognized activities in sports, weight and height of members of athletic teams, dates of attendance (including: number of hours enrolled, degrees, certificates); awards received (including: the President's Honor Roll); and, the most recent previous educational institution attended by the student. Students may request that the University not release directory information by indicating "restrict address" on WSU eInfoCenter or by filing a written request with the Office of Student Affairs by the tenth day of the academic semester.

NOTE: WSU will also not release your name in any WSU press releases including President's Honor Roll notification to hometown newspapers. Students using this protection are advised that financial aid providers and other interested agencies will not be able to confirm by telephone your status as a student. For more information on directory restrictions, please contact the Office of Student Affairs.

PROGRAM REQUIREMENTS

Consult the *Graduate Bulletin* or Graduate School web page (<http://gradschool.wsu.edu/>) for general requirements for the M.S. or Ph.D. degree. A non-thesis M.S. or Ph.D. program is not available in Neuroscience or Biomedical Science.

CURRICULAR REQUIREMENTS: M.S. DEGREE IN NEUROSCIENCE (*BIOMEDICAL SCIENCE)

• *Graded Credits*

COURSE NO.	COURSE TITLE	CREDITS
REQUIRED CORE GRADED COURSES:		
• Neurosci 540-543	Special Topics in Neuroscience (7 core required microcourses) ¹	7 cr
• Neurosci 563	Deconstructing Research	3 cr
• Neurosci 564	Topics in Biomedical Experimentation	3 cr
<i>Total Graded Credits:</i>		13 cr
OTHER ELECTIVE GRADED CREDITS (REQUIRED UNLESS SUBSTITUTED OR WAIVED BY PETITION)²:		
• Neurosci 540-543	Special Topics in Neuroscience (5 elective microcourses) ³	--6 cr
• Neurosci 592	Research Writing and Seminar (optional) ⁵	2 cr
<i>Total Elective Graded Credits:</i>		8 cr
<i>Total Graded Credits:⁴</i>		21 cr

• *Non-Graded Credits*

COURSE NO.	COURSE TITLE	CREDITS
• Neurosci 590 (S/F)	Seminar [4 semesters x 1 cr]	4 cr
<i>Total Non-Graded Credits:</i>		4 cr

• *Research Credits*

COURSE NO.	COURSE TITLE	CREDITS
• Neurosci 700	Thesis Research [minimum of 4 cr required]	5 cr
<i>Total Research Credits:</i>		5 cr
TOTAL (minimum of 30 cr required; 21 cr must be graded):		30 cr

* For an **M.S. in Biomedical Science** the Mentor/Thesis Committee may designate substitutes for the Special Topics series, but Deconstructing Research, Topics in Biomedical Experimentation, and Research Writing and Seminar are all required.

For notes 1-3 see listings under Requirements for the Ph.D. Degree in Neuroscience

⁴ M.S. degree requires a minimum of 21 graded credits (WSU Graduate School requirement). Any waived courses must find graded substitutes. M.S. degree may include up to a maximum of six (6) undergraduate (300-400 level) graded course work.

⁵ May substitute other 400/600 level Neuroscience graded elective

CURRICULAR REQUIREMENTS: Ph.D. DEGREE IN NEUROSCIENCE (❖BIOMEDICAL SCIENCE)

• *Graded Credits*

COURSE NO.	COURSE TITLE	CREDITS
REQUIRED CORE GRADED COURSES:		
• Neurosci 540-543	Special Topics in Neuroscience (7 core required microcourses) ¹	7 cr
• Neurosci 563	Deconstructing Research	3 cr
• Neurosci 564	Topics in Biomedical Experimentation	3 cr
• Neurosci 592	Research Writing	2 cr
<i>Total Core Graded Credits:</i>		15 cr
OTHER ELECTIVE GRADED CREDITS (REQUIRED UNLESS SUBSTITUTED OR WAIVED BY PETITION)²:		
• Neurosci 540-543	Special Topics in Neuroscience (3-5 elective microcourses) ³	3- 5 cr
<i>Total Elective Graded Credits:</i>		-3-5 cr
<i>Total Graded Credits:⁴</i>		18 - 20 cr

• *Non-Graded Credits*

COURSE NO.	COURSE TITLE	CREDITS
REQUIRED NON-GRADED COURSES:		
• Neurosci 531 (S/F)	Laboratory Rotations [1-2 semester x 1 cr] ⁵	1-2 cr
• Neurosci 590 (S/F)	Seminar [minimum of 4 semesters x 1 cr, maximum of 7 cr]	4-7 cr
<i>Total Non-Graded Credits:</i>		5-9 cr

• *Research Credits*

COURSE NO.	COURSE TITLE	CREDITS
• Neurosci 800	Thesis Research [minimum of 20 cr required]	variable
TOTAL:		Minimum of 72

❖ For a **Ph.D. in Biomedical Science** the Mentor/Thesis Committee may designate substitutes for the Special Topics series, but Deconstructing Research, Topics in Biomedical Experimentation, and Research Writing and Seminar are required.

¹ There are 7 required Special Topics microcourses (1 credit within the N54X series). These specific microcourses are taught every year and cannot be repeated for credit.

² Substitutions for elective credits: students, in consultation with their thesis committee, can petition for up to 5 credits of substitution for the elective Special Topics credits. These substitutions can be other course credits at WSU, or credits from institutions other than WSU.

³ There are numerous elective microcourse for the student to choose from that are taught under the Special Topics series (1 credit each, see listings in the full Graduate Student Manual). Elective microcourses are typically taught every other year and specific topics may change as new developments and focuses emerge (check with Program Director for current list of elective microcourses). Students are required to select a minimum of 10 credits within this system unless they petition for substitutions (see footnote 2). Students can repeat specific Special Topics course numbers if the repeated credits are associated with a unique microcourse topic.

⁴ A minimum of 15 graded credits from WSU in courses at the 500 level or above are required (WSU Graduate School requirement). Any exceptions (if possible) must be approved by the Graduate Program Curriculum Committee.

⁵ Students should have 2-3 rotation experiences. One can be in the 1st summer session, and the other two in the first fall semester. Students may have a spring semester rotation if they miss the prior summer session, or they have not finalized selection of a mentor at the end of the fall semester. Students with prior post-baccalaureate experience at an accredited institution (e.g., prior advanced degree or prior enrollment in a graduate program) are permitted to waive the rotation requirement if they have selected a mentor prior to starting the program, and the mentor agrees to accept the student and not require a rotation. No more than 2 credits of rotation can apply to the degree.

Elective Credits: In addition to fulfilling the required core credit distribution, students are allowed to develop an academic program that best relates to their scholarly and research needs through elective options within the Special Topics series. For students in the Neuroscience Program (M.S. and Ph.D.) up to 6 of the 8 elective credits can be substituted (or *waived*) from courses or activities obtained from other WSU departments or other institutions. For students in the Biomedical Science Program (M.S. or Ph.D.) substitutions can be made for all 12 Special Topics credits (note in the Biomedical Science Program no Special Topics credits are considered core). All substitutions/waivers require approval of the student's advisor, thesis committee, and the Graduate Program Curriculum Committee. (See instructions for "Petitions for Substitutions" below for further notes on process and restrictions.)

Substituting for Core Credits: In extraordinary circumstances, substitutions can be made for core credit (this applies for both the Neuroscience and Biomedical Science Programs, and for both the M.S. and Ph.D. degrees). An example of such a situation is when a student transfers into the Neuroscience or Biomedical Science Programs after completing a significant amount of class work in a different program at WSU or accredited institution elsewhere and the course work is an appropriate substitute for the core credits in the program. Such substitutions require approval of the student's advisor and thesis committee, as well as the Graduate Program Curriculum Committee. (See instructions for "Petitions for Substitutions" below for further notes on process and restrictions.)

Students in residence outside of Pullman: Another situation in which substitutions are pre-approved (i.e., do not require the petitioning process) is when a neuroscience student resides at WSU Vancouver or WSU Spokane and cannot take a core course because it is not transmitted to their institution (this primarily applies to Deconstructing Science and Topics in Biomedical Experimentation). In these cases a suitable substitution for the Deconstructing Science course is 3 additional credits of elective Special Topics, and for the Topics in Biomedical Experimentation course a 500-level statistics course taken on the Vancouver or Spokane campus.

Transfer Credits: Credits appropriate to a student's Program of Study (with a grade of "B" or higher) earned in other accredited graduate schools after the awarding of the Bachelor's degree may be transferred and applied toward a student's graduate degree program. The number of such credit hours is limited to no more than half of the total graded course credits required by the program that is listed on the Program of Study. None of this credit may be (or have been) applied toward another advanced degree. Transfer credits require approval by the student's advisor and thesis committee, as well as the Graduate Program Curriculum Committee. Transfer credits are subject to the usual time restrictions for Master's or Doctoral degrees and thus credits cannot be more than six (6) years old for a Master's program and ten (10) years old for a Ph.D. program at the time of submission.

Total Graded Credits: In all cases, after the requested substitutions, transfer credits, and waivers have been granted, to complete their degrees a Ph.D. student must still have at least 15 graded credits at the graduate level (500 level at WSU), or 21 graded credits in the M.S. program. For the M.S. degree up to 6 credits can be at the advanced undergraduate level (300 or 400 level at WSU).

Graduate School Approval: All requests for substitutions, waivers, and transfer credits are subject to a final approval by the Graduate School.

PETITIONS FOR SUBSTITUTIONS/TRANSFER CREDIT/WAIVERS

To request a course substitution, acceptance of transfer credit, or a waiver from program course requirements, a student must petition the Graduate Program Curriculum Committee (GPCC). All requests made to the GPCC should first be approved by the student's advisor and thesis committee (signed documents). Proposed alterations in any aspect of the requirements for the degree should be directed in writing to the Chair of the GPCC. The petition should indicate clearly the rationale for the proposed substitution (e.g., course outline and other materials used in the substitute course). The response of the GPCC will be given to the student in writing and a copy will be provided for the student's graduate record.

Once the student has obtained program approval the approval document from the GPCC should accompany the student’s program filed with the Graduate School. Once the student’s program is filed, the Graduate School evaluates the mechanics of all courses listed and decides whether these courses will be allowed to transfer, be waived or substituted. A final decision is reached jointly between the Graduate School and the GPCC. For further information on transfer credit, please see the *Graduate School Policies and Procedures Manual*.

SUGGESTED SCHEDULE

MASTER OF SCIENCE DEGREE (NEUROSCIENCE AND BIOMEDICAL SCIENCE*)

YEAR 1

FALL SEMESTER	TITLE	HOURS
Neurosci 563	Deconstructing Research	3
Neurosci 540/542	Special Topics ¹	2-4
Neurosci 590	Seminar ³	1
Neurosci 700	Master’s Research	2-5
	TOTAL	10-12

SPRING SEMESTER	TITLE	HOURS
Neurosci 564	Topics in Biomedical Experimentation ⁵	2-3
Neurosci 541/543	Special Topics ¹	2-5
Neurosci 590	Seminar ³	1
Neurosci 700	Master’s Research	2-5
	TOTAL	10-12

YEAR 2

FALL SEMESTER	TITLE	HOURS
Neurosci 540/542	Special Topics ²	2-3
Neurosci 590	Seminar ³	1
Neurosci 592	Research Writing & Sem	2
Neurosci 700	Master’s Research	5-7
	TOTAL	10-12

SPRING SEMESTER	TITLE	HOURS
Neurosci 541/543	Special Topics ²	2-4
Neurosci 590	Seminar ³	1
Neurosci 700	Master’s Research	5-8
	TOTAL	10-12

- **Prepare and defend thesis⁴**

NOTES:

¹ There are 7 core microcourses, 4 in the fall and 3 in the spring. Although there is a recommended sequence for some of these microcourses, students can take these either in the first and second year (consult with your mentor and/or the Graduate Faculty Advisory for details).

² In each semester of Year 2 students may select elective microcourses or complete core microcourses not finished in Year 1. Core microcourses cannot be repeated for credit.

³ All M.S. students **must** sign up for Neurosci 590 all semesters.

⁴ The student **must** have completed, or be enrolled in, all the required course work and be registered for a minimum of two (2) credits of 700 for the semester or summer session in which the Final Examination is to be taken.

⁵ Neuroscience 564 students must take Experimental Design, Responsible Conduct of Research, and Bioethics (1 cr each). Because it is not recommended that a student take more than 7 hr of graded credit, if in Year 1 the student takes all 5 core microcourses in the spring, they should only register for 2 credits of Biomedical Experimentation (Experimental Design should be taken in Year 1). The unit not completed in Year one can be completed in the Spring of Year 2. In addition, there is an Imaging microcourse in Biomedical Experimentation that is taught in the fall if desired by the student (can substitute for other Special Topic credit.).

* General note: M.S. degrees require 21 graded credits. Other graded courses can substitute for up to 6 credits of Special Topics. **For Biomedical Science please consult with thesis committee for appropriate elective substitutes.**

SUGGESTED SCHEDULE

DOCTOR OF PHILOSOPHY DEGREE (NEUROSCIENCE OR BIOMEDICAL SCIENCE*)

YEAR 1

FALL SEMESTER	TITLE	HOURS
Neurosci 563	Deconstructing Research	3
Neurosci 540/542	Special Topics ¹	3 - 4
Neurosci 531	Lab Rotation	1
Neurosci 590	Seminar	1
Neurosci 800	Doctoral Research	<u>2 - 4</u>
TOTAL		12

SPRING SEMESTER	TITLE	HOURS
Neurosci 564	Topics in Biomedical Experimentation ^{2,3}	1 - 3
Neurosci 541/543	Special Topics ²	4 - 5
Neurosci 590	Seminar	1
Neurosci 800	Doctoral Research	<u>3 - 5</u>
TOTAL		12

YEAR 2⁴

FALL SEMESTER	TITLE	HOURS
Neurosci 564	Topics in Biomedical Experimentation ⁵	1
Neurosci 540/542	Special Topics ⁶	1 - 3
Neurosci 592	Research Writing	2
Neurosci 590	Seminar	1
Neurosci 800	Doctoral Research	<u>6 - 8</u>
TOTAL		10 - 12

SPRING SEMESTER	TITLE	HOURS
Neurosci 564	Topics in Biomedical Experimentation ³	1 - 3
Neurosci 541/543	Special Topics ⁶	1 - 3
Neurosci 590	Seminar	1
Neurosci 800	Doctoral Research	<u>6 - 9</u>
TOTAL		10 - 12

Qualifying Exam⁷

YEAR 3⁸

FALL SEMESTER	TITLE	HOURS
Neurosci 540/542	Special Topics ⁶	0 - 1
Neurosci 590	Seminar	1
Neurosci 800	Doctoral Research	<u>10 - 12</u>
TOTAL		10 - 12

Preliminary Exam⁹

SPRING SEMESTER	TITLE	HOURS
Neurosci 541/543	Special Topics ⁶	0 - 2
Neurosci 800	Doctoral Research	10 - 12
TOTAL		10 - 12

YEAR 4+

FALL SEMESTER	TITLE	HOURS
Neurosci 800	Doctoral Research	10 - 12
TOTAL		10 - 12

SPRING SEMESTER	TITLE	HOURS
Neurosci 800	Doctoral Research	10 - 12
TOTAL		10 - 12

Final Exam¹⁰

NOTES:

¹In the fall semester there are 4 core microcourses. It is recommended that first year students not take more than 7 graded credits per semester. Since Neurosci 563 is required, first year students should select no more than 1 additional elective microcourses in their first fall semester.

²In the spring semester there are 3 core microcourses. It is recommended that first year students not take more than 7 graded credits per semester. If first year students take all 5 core microcourses, they should not take more than 2 credits of Topics in Biomedical Experimentation in Year 1.

³In Neurosci 564 students must take Experimental Design (1st year), Responsible Conduct of Research, and Bioethics. If a student takes all 5 core microcourses in their first year, it is recommended they take no more than 2 credits of the Neurosci 564 in the 1st year. Modules not completed in the 1st year can be completed in the 2nd year.

⁴All students, unless on a training grant, must complete 2 semester of TA assignments (typically in Year 2).

⁵The imaging module in Biomedical Experimentation (if desired by the student) is scheduled in the Fall.

⁶There are usually 2 elective microcourses in the fall semester and 3 in the spring semester. Students need at least 2 elective microcourses to complete their degree. These are typically taken in the 2nd year but can be taken in the 3rd or 4th year.

⁷The Qualifying Exam is schedule in the spring semester of Year 2. Following the Qualifying Exam students are evaluated by Program faculty and a decision is made to allow the student to continue towards the Ph.D. degree, retake the exam, or opt for a M.S. degree.

⁸Students should complete minimum graded credit requirements (15) **before** the start of Year 3. However, additional Special Topics modules can be taken in years 3, 4 and beyond if of interest and relevant to the student's program.

⁹The Preliminary Exam (defense of the thesis proposal) should be completed in the 3rd year, preferably in the fall semester. Students not completing by the end of the 3rd year may be dropped from the program.

¹⁰The Final Exam (thesis defense) should occur within 3 years of the Preliminary Exam. If not completed within this time window the student must petition the Graduate School for an exception to policy.

* **For Biomedical Science please consult with thesis committee for appropriate course substitutes.**

COURSE DESCRIPTIONS

GRADUATE LEVEL COURSES:

Neurosci	509	Affective Neuroscience ; 3. Brain mechanisms of human and animal emotions. Offered at 400 and 500 level. Credit not granted for both Neurosci 409 and 509.
Neurosci	531	Neuroscience Laboratory Rotation ; 1 (0-3). May be repeated for credit; cumulative maximum 2 hours. 1 or 2 seven-week rotation(s) through different research laboratories learning procedures and techniques used in neuroscience research. S, F grading.
Neurosci	540	*Special Topics in Integrative Neuroscience ; 3 (variable). Three independent microcourses. May take 1, 2, or all 3. May be repeated for credit if topic of specific microcourses is different. Concepts and controversies in neuroscience that involve integrative properties of cell systems.
Neurosci	541	*Special Topics in Cellular/Molecular Neuroscience ; 3 (variable). Three independent microcourses. May take 1, 2, or all 3. May be repeated for credit if topic of specific microcourses is different. Concepts and controversies in neuroscience that involve nerve cell function and regulation.
Neurosci	542	*Special Topics in Interdisciplinary Neuroscience ; 3 (variable). Three independent microcourses. May take 1, 2, or all 3. May be repeated for credit if topic of specific microcourse is different. Concepts and controversies in neuroscience that revolve around traditional approaches to nervous system study.
Neurosci	543	*Special Topics in Behavioral/Clinical Neuroscience ; 3 (variable). Three independent microcourses. May take 1, 2, or all 3. May be repeated for credit if topic of specific microcourse is different. Concepts and controversies in neuroscience that involve normal and pathological aspects of behavior.
Neurosci	563	Deconstructing Research ; 3. Analysis of scientific approaches and arguments pertaining to 6 presentations by College research faculty.
Neurosci	564	Topics in Biomedical Experimentation ; 3. Professional development topics including Experimental Design, Responsible Conduct of Research, and Biomedical Ethics. The three professional development modules are required of all students. Modules can be taken in separate years. Also included are modules on experimental techniques and analysis (e.g., Imaging and Image Analysis, Statistical Analysis, among others).
Neurosci	590	Seminar ; 1. May be repeated for credit; cumulative maximum 7 hours. Seminar presentations by visiting scholars, WSU faculty, and WSU graduate students on their research areas. S, F grading.
Neurosci	592	Research Writing ; 2. Written communication of scientific information; formal instruction for scientific communication (abstracts, significance etc..).
Neurosci or VPh	600	Special Projects or Independent Study ; V (1-12). May be repeated for credit. Independent study, special projects, and/or internships. Students must have graduate degree-seeking status and should check with their major advisor before enrolling in 600 credit, which cannot be used toward the core graded credits required for a graduate degree. S, F grading.
Neurosci or VPh	700	Master's Research, Thesis, and/or Examination ; V (1-12). May be repeated for credit. Independent research and advanced study for students working on their master's research thesis and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 700 credit. S, U grading.
Neurosci or VPh	800	Doctoral Research, Dissertation, and/or Examination ; V (1-12). May be repeated for credit. Independent research and advanced study for students working on their doctoral research, dissertation and/or final examination. Students must have graduate degree-seeking status and should check with their major advisor/committee chair before enrolling for 800 credit. S, U grading.

* See description of microcourses for more details.

MICROCOURSES (NEUROSCI 540/541/542/543)

Microcourses are relatively short courses (5 weeks in duration, 3 hours per week) that have a precise focus on a topic of timely and intense interest to both students in the Program as well as the faculty who teach the courses. The courses emphasize conceptual materials (how to think about a topic) rather than a catalog of content. They are meant to introduce the student into the ways in which scientists think about topics rather than a focus on teaching content. Because of this change in perspective, students must realize that when they require content specific information that they do not have, it is *incumbent upon the student to find the content*, be it from textbooks, websites, review articles, seminars, or the primary literature. This is what it means to be a self-directed learner and is in fact how most of the knowledge that faculty possess was learned.

There are some modes of thought that transcend all elements of biomedical sciences, and for these elements the core courses in Deconstructing Science and Topics in Biomedical Experimentation were designed. Then there are some modes of thought that transcend all elements of neuroscience, and for these topics there are core microcourses (see below). In addition to these core microcourses are elective microcourses, that are topical, change frequently, and are built around a journal club structure (readings from the primary literature). The flexibility of the microcourse structure enables faculty to quickly assemble new microcourses and thus offer topics that have only recently been developed. Even senior students who have advanced to candidacy should keep current on microcourse offerings as there may be new courses that appeal to the direction their research is developing.

An element of the microcourses that students may find different from the traditional classroom is the emphasis on active student learning. While there may be some degree of didactic material delivered in these courses, especially to review core concepts, all the courses have significant requirements that students engage and discuss materials in which the core concepts are applied to specific questions. Thus, students are expected to come to class having done the background reading or work and be ready to engage. Further, if something in the readings doesn't make sense, the student should look it up or be ready to ask a question about it, for they may be asked to explain it to the class. Through this constant process of comparing to what one knows and what is known, students will learn how to identify significant holes in the general scientific consensus about a topic. These holes then become the grounds that are rich for scientific exploration.

Core Microcourses:

Core microcourses are taught every year and cannot be repeated for credit.

- **Introduction to Neuroanatomy.** (Block 1 of Neurosci 540) Overview of the major divisions of the mammalian brain and the developmental sequence that leads to the adult structure. Focus is then turned to understanding neural circuitry and methods used for anatomical based investigations.
- **Classical Membrane Biophysics.** (Block 1 of Neurosci 542) A primer on electrochemistry and how neurons generate electrical excitability. Focus on active and passive properties of the membrane, how cells use excitability to communicate, and how electrical signals are converted to biochemical signals. Review of technical approaches used to study electrophysiology.
- **Receptor Pharmacology.** (Block 2 of Neurosci 542) Fundamental biology of protein receptors, how receptors couple to transduction pathways, and how drugs act at receptors to activate or block. Significant focus on receptors active in the CNS with some focus on drug development.
- **Cell Biology of the Neuron.** (Block 1 of Neurosci 541) Extend student knowledge of the basic strategies utilized by all cells including neurons to regulate protein expression and orchestrate efficient intracellular communication.
- **Signal Transduction.** (Block 2 of Neurosci 541) Fundamentals of biochemical signal processing from the extracellular agent (neurotransmitter, hormone, growth factor, etc.) to changes in cytosolic, membrane, and/or genetic components in the cell. Cross talk between pathways and critical elements within pathways are examined. Review of technical approaches for investigation into biochemical pathways.

- **Behavioral Neuroscience1.** (Blocks 1 of Neurosci 543) Overview of behavior as a topic for scientific investigation followed by exploration of neuropathways that underlie specific mammalian behavioral outputs. Review of advantages and limitations of specific experimental behavioral techniques.
- **Synaptic Integration/Plasticity.** (Block3 of Neurosci 541) From fundamental properties of synapses to mechanisms that underlie integration and summation of synaptic inputs. Significant focus on mechanisms and processes that underlie changes in synaptic integration (plasticity). This course draws on concepts developed in special topics courses on biophysics, receptor pharmacology and cell biology and should be taken only after the other microcourses have been completed.

Elective Microcourses:

(Taught in Blocks B and C in Neurosci 540, 541, 542, 543) Typically these courses are taught every other year, but depending on demand may be taught every year or every third year. The list is tentative, and students are encouraged to interact with the Program office to obtain updated courses and specific details as to when a specific course is planned to be taught. More details about course topics can be found by interacting with individual microcourse coordinators. Specific microcourses cannot be repeated for credit.

Recently taught elective Special Topic microcourses:

- Diseases of the Brain
- Ion Channel Structure Function
- Drug Development
- Addiction Neuroscience
- Neuroendocrinology of Sex, Rhythms, and Stress
- Neuroendocrinology and neuronal circuits of Feeding and Metabolism
- Sensory Neuroscience and Pain
- Glia/Neuron Interactions
- Contractile Proteins/Molecular Motors
- Advanced Synaptic Physiology/Plasticity
- Neuroscience of Sleep

NEUROSCI 531: LABORATORY ROTATIONS

All first-year Ph.D. students are required to do rotation projects (Neurosci 531: Laboratory Rotation) unless noted in **Exceptions to policy (bottom of next page)**. Laboratory rotations serve several functions:

- 1) to introduce the student to the various laboratories in the program to aid in selecting a research lab that the student can envision working in over the next 4-5 years;
- 2) to allow potential mentors to evaluate the student before agreeing to take on the responsibility of mentoring the student for the next 4-5 years;
- 3) to enable the student to develop technical expertise not present in their permanent laboratory that may be needed in their thesis research;
- 4) to broaden the student's perspective by allowing close observations of different approaches to scientific research;
- 5) to introduce the student to members of the Neuroscience Program beyond the laboratory of their permanent mentor, thus facilitating collegial interactions that may become important in the success of the student.

All first-year students are required to register for Neurosci 531 in the fall semester. During the fall semester the student will complete two ~7-week rotation projects. If a student has not settled on a mentor who agrees to sponsor the student, the student can do a 3rd rotation in the spring semester. Following the rotations, the student needs to identify a mentor that agrees to sponsor them. If no mentor will agree to sponsor a student, the student will need to change their program to an M.S. degree, and working with the Program Director and Chair of the Graduate Studies Committee to identify a lab/mentor that the M.S. research project can be completed. Note students who start in the M.S. program do not do rotations.

Selection of rotation advisors. The student, either before they arrive at WSU, or as soon as they arrive at WSU, should work with the Chair of the Graduate Studies Committee to identify their first rotation advisor. Rotation advisors should be selected because the student identifies the faculty member as a potential permanent mentor. Another strategy is that the student should select a rotation advisor that may not be their permanent advisor, but because of similar interests or technical expertise, may be useful as a member of the student's thesis committee. Students should also realize that for some faculty members, some rotation periods may be better than others because the faculty member has other obligations at particular times. Once the first rotation advisor is set, the student can begin their experience. Subsequent advisors can then be selected (in consultation with the Chair of the GSC) with a more leisurely time frame, but the remaining rotations projects should be set before the 1st rotation ends. A third rotation is possible at the start of the 2nd semester if needed.

Rotation contract and grade. At the start of each rotation the student needs to collect a Rotation Contract (see page 21) from the Neuroscience Program Office and complete the contract with the rotation advisor. The contract simply requires the student and advisor to indicate what the nature of the rotation project will be and what the specific expectations are for the project. The project should be educational and doable in the time available. Once filled, the contract should be returned to the Program Office (this ensures the contract won't get lost and also helps the Program Office keep track of where the student is located for the rotation period). At the end of the rotation, the student should collect the contract from the Neuroscience Program Office, collect comments from the mentor for the rotation project (including grade; P/F), and the mentor should sign-off on the contract. The contract is then returned to the Program Office as part of the student's permanent record.

Expectations. The rotation project is usually a brief exploratory project that may or may not result in significant findings. It is not necessary that the project be 'successful' for the student to receive a passing grade; that is the nature of scientific research. But the student is expected to devote a significant effort (both time and focus) on the project. Although the rotation project is a single credit (with 3 hours of lab obligation), the student has other research credits for which the rotation project serves as the focus. Students should realize that with their RA stipend, there is an expectation they will devote at least 50% of their time to the research experience (on average, 20 hours per week). This can include lab time as well as background reading. Depending on the nature of the project some weeks may require more than 20 hours of effort, and others less. *The student needs to be proactive in planning their schedule so they can complete both the rotation as well as other class work in a timely manner.* Poor planning on the part of the student is not the problem of the rotation advisor or the classroom teachers, but is something the student must learn to do to be successful.

Rotation talks. At the end of the fall semester the students will select one of their rotation projects and do a short (10 min) talk on the nature, goals, and findings of the rotation project. The student should work with the mentor who sponsored the project that will be discussed in the design of the presentation and conclusion of the study. But ultimately it is the student's responsibility to create the presentation. The talks serve two purposes; 1) it is formatted in the form of a research talk given at a national meeting (10 min with ~5 min for questions), so that the student may become familiar with the format; and 2) it gives the student an opportunity to gain speaking experience in front of a relatively large (but friendly) crowd.

Exceptions to policy. There are a few situations in which rotation projects are not required. One is the student enters as a Ph.D. candidate in the Biomedical Science program and has already selected an advisor (although the advisor may also ask the student to do a rotation in a related lab just so the student gains experience and meets the people in that lab). A second exception is when the student already has an M.S. degree, or has started a program elsewhere and desires to transfer into the Neuroscience program. In this case the student has already experienced different research environments, and much of the purpose for the rotation experience is unnecessary. On the other hand, it is permissible that if the student is uncertain of the selection of an advisor, they can do a semester of rotations projects. In all cases it is the judgment of the advisor as to whether the student will do a rotation talk.

LABORATORY ROTATION CONTRACT

STUDENT'S NAME: _____ PROGRAM ENTRY DATE: _____

OBJECTIVES

- 1) To introduce the student to various laboratories in the program and to aid in selecting a permanent mentor.
- 2) To enable the student to develop technical expertise not present in their permanent laboratory that may be needed in their thesis research.
- 3) To broaden the student's perspective by allowing close observation of different approaches to scientific research.
- 4) To introduce the student to members of the neuroscience program beyond the laboratory of their permanent advisor, thus, facilitating collegial interactions.

ORGANIZATION

- 1) Students are required to do at least two (2) rotations unless they meet one of the exceptions described on page 20. Three (3) is the preferred number, but up to four (4) rotations can be done.
- 2) Rotations last ~7 weeks. If the student starts in the summer, the summer period can count as one of the rotations.
- 3) Although the student only registers for one (1) rotation credit (Neurosci 531), any additional research credits that the student has registered for (Neurosci / Vet_Ph 800) are assigned to the rotation project. For summer rotations, the student is expected to work fulltime (40 hours/week) on their rotation project. For fall/spring rotations the student is expected to work at least halftime (20 hours / week) on their rotation project. Work times are arranged at the convenience of the student and advisor.
- 4) At the end of their first fall semester the student is to select one of their prior rotation projects and present a rotation talk to the department (see page 20).
- 5) This form is to be completed prior to starting each rotation project and then returned to the Neuroscience Program Office. Near the end of each rotation the student is to retrieve the form from the Neuroscience Program Office, obtain the sign-off signature of the advisor, line-up the subsequent rotation (if needed), and then return the form to the Neuroscience Program Office.

ROTATION PROJECT #1

ADVISOR: _____ CONTACT PHONE NUMBER FOR ROTATION: _____

APPROXIMATE START DATE: _____ APPROXIMATE END DATE: _____

BRIEF DESCRIPTION OF ROTATION PROJECT (1-3 sentences):

SIGNATURES (agreeing to scope and expectations of rotation project):

Student: _____ Advisor: _____

ROTATION EVALUATION

1. OVERALL RATING: ___ SUPERIOR ___ GOOD ___ AVERAGE ___ FAIR ___ POOR

2. PROGRESS ON ROTATION PROJECT:

3. OTHER COMMENTS ON RESEARCH ACTIVITIES (*include constructive suggestions, for example research potential, working habits, research skills, use of appropriate methods, thoroughness, dedication, enthusiasm*).

ADVISOR'S SIGN-OFF SIGNATURE _____

Grade: S F I X

ROTATION PROJECT #2

ADVISOR: _____ CONTACT PHONE NUMBER FOR ROTATION: _____

APPROXIMATE START DATE: _____ APPROXIMATE END DATE: _____

BRIEF DESCRIPTION OF ROTATION PROJECT (1-3 sentences):

SIGNATURES (agreeing to scope and expectations of rotation project):

Student: _____ Advisor: _____

ROTATION EVALUATION

1. OVERALL RATING: ___ SUPERIOR ___ GOOD ___ AVERAGE ___ FAIR ___ POOR

2. PROGRESS ON ROTATION PROJECT:

3. OTHER COMMENTS ON RESEARCH ACTIVITIES (*include constructive suggestions, for example research potential, working habits, research skills, use of appropriate methods, thoroughness, dedication, enthusiasm*).

ADVISOR'S SIGN-OFF SIGNATURE _____ Grade: S F I X

ROTATION PROJECT #3 (OPTIONAL)

ADVISOR: _____ CONTACT PHONE NUMBER FOR ROTATION: _____

APPROXIMATE START DATE: _____ APPROXIMATE END DATE: _____

BRIEF DESCRIPTION OF ROTATION PROJECT (1-3 sentences):

SIGNATURES (agreeing to scope and expectations of rotation project):

Student: _____ Advisor: _____

ROTATION EVALUATION

1. OVERALL RATING: ___ SUPERIOR ___ GOOD ___ AVERAGE ___ FAIR ___ POOR

2. PROGRESS ON ROTATION PROJECT:

3. OTHER COMMENTS ON RESEARCH ACTIVITIES (*include constructive suggestions, for example research potential, working habits, research skills, use of appropriate methods, thoroughness, dedication, enthusiasm*).

ADVISOR'S SIGN-OFF SIGNATURE _____ Grade: S F I X

NEUROSCI 590: PROGRAM SEMINAR SERIES

Seminars are an important educational component for all scientists at all levels. They are a time when all programmatic faculty, technicians, trainees, and students gather together to hear and discuss the latest developments in neuroscience and related areas. The discussions that follow the presentations (formal questions and informal hall talk) are the times in which you can reflect on new ideas and how they apply to your work. Thus it is important that programmatic participants make every attempt possible to attend, whether for credit or not.

However, to help develop good attendance habits, both Ph.D. and M.S. degree students are required to register for at least 4 semester of Neurosci 590 Research Seminar (graded P/F). To get credit for this course requires attendance at the weekly seminars when scheduled (attendance is taken). If a student misses a seminar, then they will need to watch the recording. Students must fulfill the requirements stated in the syllabus of the seminar course.

In addition to attending the seminar, a small group of students (registered for Neurosci 590 or not) will be invited to participate in a lunch, typically scheduled immediately following the seminar. The lunch is an opportunity for graduate students to meet with the seminar speaker without the presence of program faculty. Being able to hold conversations with fellow scientists, even if their field is a bit different from your own, is a critical career building skill for which this engagement is an opportunity to develop.

REGISTERING FOR CLASSES

Instructions for registration and policies and procedures for dropping and adding classes are included in the *Time Schedule of Classes* available on the Registrar's Office home page at <http://www.registrar.wsu.edu/Registrar/Apps/HomePage.ASPX>.

Students register for classes via MyWSU. Detailed instructions are included in the Admission Packet from the Graduate School or from the Office of the Registrar, or stop by the Neuroscience Program Office for help.

CONTINUOUS ENROLLMENT

All **full and part-time degree-seeking** graduate students must maintain continuous enrollment by registering for each semester, *excluding summer sessions*, from the time of first enrollment until all requirements for the degree are completed except for periods during which the student is on official graduate leave status. **Continuous enrollment is maintained by registering for a minimum of two (2) graduate credits each academic semester.** International students who enroll for less than 10 credits must be approved by OISS, in consultation with the Graduate School, prior to part-time enrollment during the academic year. *Official and unofficial Leaves of Absence are included in the time limits to complete a degree.*

OFFICIAL LEAVE OF ABSENCE

There are three (3) official Leave of Absence statuses for Graduate Students: 1) **graduate leave** (for extenuating circumstances such as Peace Corp or military service, financial hardship, family obligations); 2) **emergency family or medical leave** (for a medical reason for yourself or a family member); or 3) **internship status** (to participate in an approved internship). To qualify for one of these official statuses, you must complete a "Leave" form, have your Advisor and Department Chair sign it, and submit it, along with the appropriate documentation, to the Graduate School **before** you take the leave.

CHANGE IN ENROLLMENT STATUS

Students who fail to maintain continuous enrollment or official leave status for more than one (1) calendar year will be dropped from their graduate program; such students will be required to reapply and pay an application fee to be considered for readmission to their program. For more information, the complete continuous enrollment policy can be found at <http://www.gradsch.wsu.edu/forms>.

EXAMINATION REQUIREMENTS

Graduate students must register for the required amount of 700, 702, or 800 credit during the semester or summer session in which they take their Preliminary and Final Exams (a minimum of 2 credits are required for the Final Exam).

Examinations scheduled outside of regular terms. Though not encouraged, students may petition for special permission from the Graduate School to schedule examinations (M.S. and Ph.D.) in the interim non-class period. Students who miss the deadline for defending their Final Exam within a particular semester may need to wait an additional semester before they can participate in graduation ceremonies.

COURSES THROUGH THE GLOBAL CAMPUS

Before students register in online Global Campus courses students should consult with their advisor / mentor to ensure the courses will count toward their program of study. They should also determine whether courses will be counted toward their graduate assistantships and whether they will be included in their tuition waivers. Finally, they should find out if they will have to pay extra for those courses. The information below should assist in clarifying WSU policies.

The great majority of courses offered through the Global Campus are state-funded and, therefore, count toward full-time tuition and are covered by tuition waivers. However, there are a few courses that are offered on a self-sustaining basis. These courses may be used on programs of study, and they will count toward the minimum 10 credits that students must be enrolled in to have a graduate assistantship. However, the tuition waiver associated with the half-time assistantship will not apply to those courses.

The Graduate School encourages all full-time graduate students to be enrolled in 10-12 credits. If students enroll in just 10 credits (3 of which are self-sustaining), they would be allowed to be on a graduate assistantship, **BUT** they would have to pay extra for those 3 credits; furthermore, the tuition waiver would be adjusted to not include those 3 credits. If a student enrolls for 13 credits (3 of which are self-sustaining), they would receive the full tuition waiver, **BUT** would have to pay extra for the self-sustaining course.

SELECTION OF ADVISOR/MENTOR AND THESIS COMMITTEE

SELECTING A PRIMARY ADVISOR/MENTOR

All primary advisors (note: *advisor* and *mentor* are used synonymously throughout this document) for graduate students (Doctoral and Master's) in the Neuroscience Program must be members of the Graduate Faculty in Neuroscience.

When a student enters the **Doctoral Program in Neuroscience** they should have in mind 3 - 4 individuals who are members of the Graduate Faculty in Neuroscience at WSU they might consider for selecting as a primary advisor. The purpose of the rotation experience is to make sure that the student and advisor are a good match for one another, and that the nature of the research in the advisor's lab is something the student would want to engage in for the next 4-6 years. This is a serious commitment of time and energy, so good matches are important. It is expected that a student will select an advisor during the first year. A student can select an advisor after two rotations, but a 3rd rotation in the spring is encouraged, especially if the student has not finalized an advisor selection. Students who fail to get a faculty member to agree to serve as a doctoral advisor will be asked to convert to a M.S. degree and, in consultation with the Program Director and Chair of the Graduate Study Committee, a M.S. advisor will be assigned.

For students in the **Doctoral Program in Biomedical Science** (or who are in the **Doctoral Program in Neuroscience** but will be supported by an individual faculty member on external funds during their 1st semester) need not do rotation projects and can enter the program with a mentor preselected. The faculty advisor must write a letter to the Graduate Studies Committee indicating their willingness to support the student.

If two faculty members are putting approximately equal effort into advising and guiding a student, it is possible to recognize them as **Co-Mentors** for the student and both share credit for advising the student. A second circumstance for Co-Mentors is when one of the primary advisors does not have a primary appointment at WSU, but is nevertheless, a member of the Graduate Faculty. In this case a Co-Mentor who does have a primary appointment at WSU needs to be appointed.

A student who enters the **Master's Program (Neuroscience or Biomedical Science)** must have a primary advisor selected before they enter the program. The faculty advisor must write a letter to the Graduate Studies Committee indicating their willingness to support the student.

Selection of a mentor must be approved by Program leadership and the Graduate Studies Committee. Mentors should have enough external funding to provide both a stipend assigned to the student and supplies needed to complete the student's research project for several years. The Graduate School will also need to accept the faculty member as an appropriate advisor.

Annual reviews. Once selected, a Doctoral/Master's mentor is responsible for annual reviews of the graduate student. Prior to selection of a mentor, if a review of the student is needed, the Chair of the Graduate Studies Committee will do the review.

Changing mentors. If the student's mentor leaves the Program before a student has completed his/her thesis (Doctoral and Master's), and the student desires to remain in the Program, or for other reasons the student wants to change mentors, and the Program Director agrees that a change is warranted, a new mentor who can provide the proper oversight can be selected. A student's project may remain the same as that started or transition to a new project depending on the circumstances at the time of the change. It is permissible that the old mentor and new mentor become Co-Mentors and share equal credit for advising the student. These changes must be approved by the Program Executive Committee as well as the Graduate School.

SELECTING A THESIS COMMITTEE

The members of the student's Thesis Committee are to be selected in consultation with the primary advisor (Doctoral and Master's). At this point the primary advisor is also referred to as the Chair of the Thesis Committee. Committee members should be selected because they have special knowledge about the topic area of the thesis or are experts at technical elements in the proposed project. It is permissible to select members who are outside the Program and outside WSU, provided they have the appropriate terminal degree. However, a majority of the thesis committee (Doctoral and Master's) must be members of the Graduate Faculty in the Neuroscience Program.

Doctoral committees require at least 4 members (includes the Chair). Master's committees require at least 3 members (includes the Chair). Since all committee members must attend formal Preliminary (doctoral only) and Final Exams (M.S. and Ph.D.), because of potential scheduling conflicts it is not recommended that a committee exceed 6 members. However, committee members may attend the exam through appropriate communication technology. If a committee member cannot attend a formal exam, the student may select to substitute a new member, but since this requires a formal acceptance by the Graduate School, students should make sure of the availability of members for exams at least 2 weeks prior to scheduling any formal exam. To pass an exam, at least 75% of the Committee must approve the performance.

Once the student and primary advisor have agreed on members of the thesis committee, and the selected individuals have consented to serve, the student needs to file the appropriate paperwork with the Graduate School (this should be done by the end of the student's first year). Appropriate forms are available in the Neuroscience Program Office.

CALLING A THESIS COMMITTEE MEETING

Both Doctoral and Master's Thesis Committees are required to formally meet at least once per year (more frequent informal meetings to review experimental data, progress in writing up results, and to seek general advice are highly recommended). The student is responsible for organizing this annual meeting. At the official formal meeting the student should prepare materials in advance so as to be ready to quickly review progress, show results, and outline plans for the subsequent year and eventual project completion.

MANDATORY COMMITTEE MEETINGS

- Before the preliminary exam
- At least one annual meeting is required until the thesis is complete.
- Semi-annual meetings are encouraged until the thesis is complete.

GRADUATE STUDENT ANNUAL EVALUATION

The State of Washington requires that the Neuroscience and Biomedical Science Programs evaluate graduate students on an annual basis. Annual evaluations are performed by the chair of the student's thesis committee (i.e., the student's primary advisor / mentor). Evaluation forms are distributed to the students (in early May) and the student is responsible for arranging to meet with their advisor to complete the evaluation form. *The advisor should discuss the annual evaluation with the student and both should sign the document.* Completed forms are returned to the Neuroscience Program Office by mid-May. The Graduate Studies Committee will then review the evaluation forms and may request a meeting with the student and/or advisor to discuss the progress of the student. The results of the annual evaluation will then be presented by the Mentor or the Chair of the Graduate Studies Committee to the faculty as a whole during a summer faculty meeting whose purpose is to review student progress in the program.

The Director and Associate Director of the Neuroscience Program will use this summer faculty meeting to elicit further information regarding the student's progress and performance. Following this faculty meeting, the Chair of the Graduate Studies Committee (or student's advisor) will inform the student, in writing, as to the faculty's review of the student's performance. The results of the evaluation will then be forwarded to the Neuroscience / Biomedical Science Graduate Studies Committee for use in considering the awarding of graduate stipends for the coming year. If it is deemed that the student is not making adequate progress toward a degree, the faculty at the annual review meeting may request the Program Director terminate the student from the program.

In addition to the annual evaluation performed by the advisor, the student is required to update their personal and degree information with the Neuroscience Program by completing the "Graduate Student Annual Information" form. This includes noting any achievements, such as awards, presentations, service, outreach or publications.

TEACHING ASSISTANT (TA) EVALUATION

All course directors for which a student is assisting will evaluate the teaching assistant (TA) at the conclusion of the course. The results of this teaching evaluation will be given to the student and a copy will become part of the student's graduate studies file maintained in the Neuroscience Program Office. Additionally, students TAing in Neuroscience undergraduate courses will receive an evaluation from the students.

Note: this process does not include VetMed courses.

AFFILIATION FOR SCHOLARLY WORK & PUBLICATIONS

When Neuroscience or Biomedical Science students author or co-author scholarly work, (e.g., a scientific paper or abstract) or receive awards that are announced to the news media, the address or location of the authors or recipient should include "Graduate Program in Neuroscience (or Biomedical Science), Washington State University" or a suitable abbreviation. Such recognition of the Program is an important source of the Program's promotion to the public and will help strengthen its reputation. Students in the Neuroscience Program are not in the graduate program of their advisor's department. In other words, a Neuroscience student whose advisor is in Department XYZ should list the Neuroscience Program rather than Department XYZ as their affiliation. When the advisor is a co-author, both the advisor's department and the Neuroscience Program should appear in the affiliation.

ACADEMIC STANDARDS

A student must earn a minimum 3.00 grade point average for all course work (including all courses listed on the program and other undergraduate or graduate upper- and lower-division courses). No work of "C" grade or less may be dropped from a program; nor, can a course be repeated for a higher grade if the final grade is "C" or higher. Any course listed on the program in which a grade of "C-, D, OR F" is earned must be repeated.

The enrollment of a Graduate Student will be terminated if she or he has a cumulative GPA below 2.75 at the end of the first semester of study. The enrollment of a Graduate Student will be terminated if she or he fails to establish and maintain a cumulative GPA of 3.0 or above after more than one (1) semester of study. Other reasons for termination might include: failure to make normal progress toward degree completion (such as: failure to complete coursework on time or multiple incompletes), failure to maintain continuous enrollment, issues related to academic integrity or student conduct, failure to make satisfactory progress on research project, etc. Only the Dean of the Graduate School or the University Conduct Board has the authority to terminate a student's enrollment.

Neuroscience or Biomedical Science students receiving a "Notice of Termination" should contact the Neuroscience Program Office if they desire reinstatement. The student must petition the Program for reinstatement. A strong case for reinstatement should include reasons for the poor performance and a specific plan for improvement. Academically deficient students should submit the "Request for Re-Enrollment" form found on the Graduate School web page.

INCOMPLETE GRADES

An incomplete ("I") is the term indicating that a grade has been deferred. It is given to a student who, for reasons beyond the student's control, is unable to complete the assigned work on time. The ("I") grade for an undergraduate course (all courses numbered 499 or lower) will be changed to an "F" if the work is not completed during the ensuing year. The student may not repeat the course to remove an incomplete grade.

Graduate students may not carry a grade of "I" (INCOMPLETE) longer than one semester or summer session while on appointment in the academic program. Ordinarily, new or renewed Graduate Student appointments will not be approved for students who have earned a grade of ("I") for longer than one (1) semester or summer session.

"X" GRADES

The "X" grade denotes continuing progress toward completion of special problems, research, thesis, or doctoral dissertation (i.e., 499, 600, 700, 702, 800); "X" grades are converted to "S" (SATISFACTORY) or to a letter grade upon satisfactory completion. All outstanding incomplete work (including grades of "I, X", AND BLANK/NO GRADE) must be completed and posted to the official transcript prior to the conferral of the undergraduate, graduate, or professional degree. An "X" grade may also be used when no final grade is reported due to instructor's illness or absence.

REQUESTING A CHANGE OF DEGREE STATUS

CHANGE OF STATUS FROM MASTER'S TO DOCTORAL

After one (1) year of study the circumstances of a student may change; thus, it may be appropriate for a student admitted to the M.S. program to be shifted to the Ph.D. program.

Early during the third semester of the student's program, the student should submit a petition to the IPN Graduate Studies Committee (GSC) to make the requested change in status. For most students this will be in the Fall semester. The student should outline why they want to switch to the Ph.D. program.

In addition, a letter from the student's Advisor / Mentor, along with a current "Student Annual Evaluation" form, should be submitted to the GSC documenting that the Mentor is also in agreement with the change in status for the student.

The GSC may solicit information from other faculty (course instructors, research faculty who have had contact with the student, etc.) in order to obtain a complete picture of the student's performance.

If the student requests at this time to not only switch programs, but also switch Advisors / Mentors, a letter from the new Advisor / Mentor should be submitted to the GSC documenting the willingness of the new Advisor / Mentor to take responsibility for the student.

CHANGE OF STATUS FROM DOCTORAL TO MASTER'S

To change status from a Ph.D. degree to a M.S. degree, the student must pick up and complete a "Change of Major" Card from the Graduate School. The student must file a new Master's "Degree Program of Study" form in consultation with the student's Advisor / Mentor and return all forms to the Graduate School. Copies of all forms must be submitted to the Neuroscience Program Office.

COMPLETING A DEGREE

SUBMITTING THE Ph.D. OR M.S. PROGRAM OF STUDY

Doctoral “Program of Study” forms, provided by the Graduate School and available on-line, should be submitted to the IPN Graduate Program Office and Graduate School no later than the start of the student’s second year of graduate work. Students are strongly encouraged to have programs filed by the end of the first year, when possible. If a Master’s degree has not been previously earned, the student’s program must be submitted no later than the end of the third semester of graduate work. (NOTE: “Program of Study” forms must be filed and approved by the IPN Graduate Program and Graduate School by the end of the third semester.)

Master’s “Program of Study” forms, provided by the Graduate School and available on-line, should be submitted to the IPN Graduate Program Office and Graduate School as soon as possible, but no later than the beginning of the semester preceding the semester of graduation. Students are strongly encouraged to have programs filed by the end of the first year, when possible.

QUALIFYING / PRELIMINARY / FINAL EXAMINATIONS

MASTER’S (M.S.) DEGREE (NEUROSCIENCE AND BIOMEDICAL SCIENCE)

- ***Thesis Proposal***

A Master’s candidate is expected to file a “Program of Study” by the end of the first year. Students must submit a brief description (not more than two (2) pages) of the student’s M.S. research program to the Graduate Studies Committee. At the request of the student’s Thesis Advisor / Mentor, other members of the student’s Master’s Committee, or the Graduate Studies Committee, the student may be asked to give a brief oral presentation (20 minutes) on their project, followed by not more than one (1) hour of questioning by the examiners. The request for such an examination must be made to the student by August 1st (beginning of third semester) and can be made even if the student has failed to produce a project proposal. If it is decided that at this time the student is inadequately prepared to continue their studies, the Graduate Studies Committee may request the IPN Department Chair to terminate the student from the program.

- ***Final Master’s Examination***

A Final Oral Examination is required of all Neuroscience or Biomedical Science Master’s candidates. The student must register for at least 2 credits of 700 credits at the beginning of the semester or summer session in which the Final Examination is to be taken. The examination is intended to test the candidate’s ability to integrate and interpret material in the major and supporting fields, with emphasis on the work presented in the thesis. The examination is open to the public, is normally one (1) hour in duration and is limited to 2½ hours. The exam begins with a seminar-type presentation of the work by the candidate and concludes with a question-and-answer session conducted by the student’s Thesis Committee. Additional details of the Exam are provided in the *WSU Graduate Study Bulletin*.

DOCTORAL (Ph.D.) DEGREE (NEUROSCIENCE AND BIOMEDICAL SCIENCE)

The Preliminary and Final Examinations are required by the Graduate School and are described in the “Policies and Procedures” section of the *WSU Graduate Study Bulletin*. In addition to the Preliminary and Final Examinations, the Neuroscience Program requires a Qualifying Examination (oral and written) prior to the Preliminary Exam. The Preliminary Exam is also known as the Thesis Proposal Exam and requires a written thesis proposal. The Final Exam requires a written final thesis.

1.0 *Qualifying Examination (Written/Oral)*

Prior to the Qualifying Exam, the student must satisfactorily complete the core Neuroscience Program curriculum and be in good academic standing (3.0 cumulative GPA in graduate study, and a GPA of at least 3.0 for the major courses). Around the start of the 4th semester the Chair of the Graduate Studies Committee will contact the students in good standing to schedule the Qualifying Examination.

1.1 The Qualifying Examination Committee is made up of at least 5 program faculty. All committee members can evaluate and score all answers.

1.2 The structure of the Written Qualifying Exam

- ♦ PURPOSE: to test the student’s ability to synthesize information and present it in a cogent manner similar to that of a scholarly review article, grant or paper.
- ♦ LENGTH: Answer 3 questions. 1 is a common question answered by all students, the other 2 are selected from a choice of at least 4 prompts/questions). A minimum of 3 pages and maximum of 5 pages per question (not including figures and bibliography).
- ♦ FORMAT: single-spaced, 11 point Arial font.
- ♦ FIGURES: added as supplemental material.
- ♦ BIBLIOGRAPHY: semi-annotated (highlight the most important references with annotation).
- ♦ TIME ALLOTMENT: ~3 weeks (in 4th semester, i.e. Spring of the 2nd year).
- ♦ OTHER: signed statement of originality; list of any external faculty consulted.
- ♦ SCORING: each answer is scored 1 – 5, with a score of 3 or higher on each question required to PASS. A score of less than 3 on any ONE answer will require improvement in the Oral Qualifying Exam. Comments and scores are returned to the student and an oral exam is scheduled approximately 1-2 weeks later.

1.3 The structure of the Oral Qualifying Exam:

- ♦ PURPOSE: to probe more extensively the answers to the three selected questions of the Written Qualifying Exam – plus the possibility of asking questions about the remaining two unanswered questions from the Written Qualifying Exam, as well as follow up questions.
- ♦ TIME ALLOTMENT: 60-120 minutes.
- ♦ FORMAT: oral – (details of the allowed materials will be provided by the graduate studies committee prior to the exam).
- ♦ SCORING: all Committee faculty provide an overall score (1 - 5, 5 is best) for the student’s presentation and performance. An average score of 3 or higher is required to pass. As noted in the SCORING section for the written exam, if a student scores less than a 3 on any written question, significant improvement must be shown to pass that portion of the Oral Qualifying Exam, which is graded separately by the Committee.

1.4 The outcome of both the Written and Oral Qualifying Exams:

- ♦ If the student scores ≥ 3 on both the written and oral portions of the Qualifying Exams, the student receives a PASS and can continue to the Preliminary Exam.
- ♦ If the student scores < 3 on one (1) written exam question, but shows improvement on that question during the oral portion of the Qualifying Exam (≥ 3 separate score) PLUS ≥ 3 for a general score, the student receives a PASS and may continue to the Preliminary Exam.

- ♦ If student scores ≥ 3 on the written questions and < 3 on the oral exam portion, the student receives a **CONDITIONAL PASS** and after fulfilling any remediation conditions imposed by the Examination Committee, may continue on to the Preliminary Exam.
- ♦ If the student scores < 3 on two or more written questions and has little or no improvement on the oral portion of the exam, the student receives a **FAIL** on the Qualifying Exam. At a minimum the student will be required to retake all or some of the Qualifying Exam depending on the outcome of the general faculty review of performance.

1.5 Final review. After completion of all Qualifying Examinations the entire Neuroscience Graduate Faculty have a general faculty meeting to review the progress of 2nd year students. At this meeting ***the entire record*** of the student up to this point is reviewed and discussed (Qualifying Exam, coursework, laboratory performance, any TA reviews, etc.). The faculty will then vote to either approve the student moving forward to the Preliminary Exam, or suggest an alternative pathway. Depending on the nature of the performance the alternative pathway could include retaking the Qualifying Exam (written, oral, or both), recommend changing to the Master's Program, or being dismissed from the Program. If a retake of the Qualifying Examination is recommended, it must be completed within 1 year. ***It is important for the student to note that passing the Qualifying Exam by itself does not guarantee progression in the program if other elements of the student's performance are found inadequate*** (e.g., in adequate performance in the lab).

2.0 Preliminary Examination (Thesis Proposal Exam)

At the Preliminary Exam the student presents and defends a thesis proposal. The thesis proposal is developed by the student in consultation with their Advisor and Thesis Committee, but the student should write the proposal themselves (editorial comments by the Advisor and Thesis Committee are permitted). This is an exam required by the Graduate School and therefore must be scheduled through the Graduate School.

2.1 The structure of the Preliminary Examination:

- ♦ **PURPOSE:** to test the student's ability to formulate a series of research aims that address a significant area of science and then to defend the structure of the investigation (including how the project is conceived, how hypotheses will be tested, and how experiments will be interpreted).
- ♦ **TIMING:** preference is for students to schedule the exam before the end of their 5th semester. ***If a student has not successfully passed the Preliminary Exam by the end of their 6th semester, the student and their mentor should meet with the graduate studies committee.***
- ♦ **SCHEDULING:**
 - The Ph.D. "Program of Study" form must be filed with the Neuroscience Program Office and Graduate School ***no later than the third (3rd) semester which is two (2) semesters prior*** to scheduling the Preliminary Exam.
 - The "Preliminary Examination Scheduling" form must be returned to the Neuroscience Program Office and Graduate School at least ***ten (10) business days prior to the examination.*** Students must submit a preliminary draft to their committee at least seven (7) days prior to asking them to sign off.
 - The candidate's written Preliminary Thesis Proposal (see Proposal Format on page 33) must be distributed to members of the student's Thesis Committee ***at least two (2) weeks (14 days) prior*** to the Preliminary Examination. At the same time, an electronic copy of the Proposal must be given to the Administrative Office, who will make it available to all faculty members during the two (2) weeks preceding the Preliminary Exam.
- ♦ **FORMAT OF THE EXAM:** the candidate must first write a thesis proposal according to the format outlined on page 33). The actual exam begins with an oral presentation of the project (30-40 min). This part of the examination is open to the entire department and the general public. The official examination then begins with only Graduate Faculty in attendance (and any additional observers as recommended by the student or Graduate School). While any member of the Graduate Faculty may attend the examination portion, the student's Thesis Committee is required to attend. The ques-

tioning may last up to 2½ hours, and following the questions, all Graduate Faculty who have been in attendance are required to vote to pass or fail the student (a minimum 75% positive vote is required to pass).

2.2 Outcome. If the student passes the Preliminary Examination (in accordance with Graduate School criteria, see below) they **advance to candidacy**. In the event a student fails the Preliminary Exam, the student's Advisor and an additional member of the Graduate Faculty in attendance at the exam will forward a written description of the reasons for the failure to the Graduate Studies Committee and the student will receive an "X" grade for all 800 credits enrolled that semester. The Graduate Studies Committee will examine the reasons for the failure in the context of the student's entire record and will recommend a course of action to the Program Director. The student may be given an opportunity to retake the exam, or the student will be dropped as a Ph.D. candidate from the Program (a terminal M.S. degree would be possible). At least three (3) months must elapse between the failed examination and the re-examination. It is up to the Graduate Studies Committee to decide if, in addition to another oral examination, the thesis proposal needs to be rewritten. ***A student who has failed a Preliminary Examination is not eligible for the departmental stipends until the failing grade is made up.*** In accordance with Graduate School rules, the Preliminary Examination may be attempted only twice. Thus, a failing grade upon re-examination will result in termination of enrollment in the WSU Graduate School. Also note that the second try at the examination should be completed by the end of the 6th semester, and ***if the student has delayed scheduling the exam to within 3 months of the end of the 6th semester, they will only get one attempt at the exam.***

3.0 Final Examination (Thesis Defense)

The Final Examination is primarily a defense of the Dissertation, but it may also cover the general fields of knowledge pertinent to Neuroscience or Biomedical Science. Policies and procedures for this exam are out-lined in the *Graduate Bulletin*. The examination time and place are published in the *WSU Today* / *WSU Announcements* / *CVM Weekly Chronicle* and announced to the Neuroscience Faculty via a memorandum.

3.1 The structure of the Final Examination:

- ♦ PURPOSE: to determine if the candidate can adequately justify the conclusions of their research and whether they possess the general knowledge expected of a Ph.D. level scientist.
- ♦ PLANNING AND SCHEDULING:
 - The student must be enrolled and registered for two (2) credits of Neuro 800 credits during the semester in which the Final Examination is taken.
 - The "Application for Degree" form must be on file in the Graduate School before the Final Examination may be scheduled.
 - Advisor + Committee + Student agree the Student is ready to defend at a committee meeting. Note: Student is required to have a committee meeting 2-3mths prior to hopeful defense.
 - Student + Advisor work together to complete the Thesis/dissertation document.
 - When the document is nearly completed, Student + Advisor work with the Committee to set a date for the defense. **Note:** You do not set a defense date first!
 - When the date is agreed, Student circulates the nearly completed document (suitable in format for submission to the Library) and the "Final Examination Scheduling" form (available from the IPN office) to the committee **at least 14 days prior to the Scheduling form filing date.**
 - The Scheduling form must be uploaded by the IPN office **10 business days** prior to the defense date.
 - An electronic copy of the Dissertation / Thesis must accompany the scheduling form for a preliminary check. If you have questions concerning acceptability of format for final acceptance, please contact the Dissertation / Thesis Acceptance Clerk in the Graduate School once you have reviewed the instruction on the forms page on the Graduate School website.
 - The Graduate School schedules the student's examination upon receipt of the completed "Final Examination Scheduling" form and electronic copy of the Dissertation/Thesis.

- Following the defense, the student has **5 business days** to make final edits requested by the committee during the defense.
- ♦ **FORMAT OF THE EXAM:** the candidate must first write a final thesis according to the format outlined on page 33. The exam begins with a seminar-type presentation of the work by the candidate (≤ 50 min). The seminar is open to the public. Graduate Faculty in attendance are invited to question the candidate. After this phase of the examination, the Thesis Committee (required) and members of the Graduate Faculty (regardless of department) adjourn to discuss the candidate's performance and to vote. The candidate may be questioned further during this second phase of the examination. A 75% positive vote is required to pass the exam.

3.2 Outcome. If a student should fail a final exam they may appeal the results in accordance with WSU Graduate School rules. Please contact the Graduate School for further details.

4.0 Format for the Doctoral Thesis Proposal

The Thesis Proposal is to be written per the guidelines at gradshcool.wsu.edu

Papers written for publication can be included as-is on verbiage but must follow the Graduate School's font and margin guidelines. If a paper has been published, that should be noted in the thesis. Student may submit papers without first authorship, but a statement should be provided about the student's role in the paper.

The thesis proposal should be typed in a 12-point font with 0.75 inch margins and no more than 6 lines per inch. **Your proposal may not exceed 10 pages, including all figures and tables, but not references, and should include the following:**

- 1) **Specific Aims** – State the specific purposes of the research proposal and the hypotheses to be tested.
- 2) **Background and Significance** – Sketch briefly the background of the proposal. State concisely the importance of the research described in the proposal by relating the Specific Aims to broad, long-term objectives.
- 3) **Research Design and Methods** – Including an outline of:
 - Research design and the procedures to be used to accomplish the Specific Aims;
 - Tentative sequence for the investigation;
 - Statistical procedures by which the data will be analyzed;
 - Any procedures, situations, or materials that may be hazardous to personnel and the precautions to be exercised;
 - A discussion of potential experimental difficulties, together with alternative approaches that could achieve the desired aims.
- 4) **Literature Citations** – Each citation must include names of all authors, journal or chapter title, book or journal, volume number, page numbers, and year of publication.

Note: *A thesis proposal is not a contract and may be changed by the student and his/her advisor, in consultation with the student's thesis committee, at any time during the course of study.*

5.0 Submitting Doctoral Thesis Proposal for External Funding.

It is expected that all PhD students will submit their proposal to an external agency for funding. Although the funding environment is very competitive, students in our programs have been awarded funding from federal agencies (e.g., NIH F31 Fellowships), Poncin Foundation Fellowships, AHA Fellowships, among others. Consult with your thesis advisor as to the most appropriate venue to submit. These fellowships are very prestigious and winning one will help you in the future as an item of significance to add to your budding CV. The reason we ask that the proposal be written in the format of an NRSA F31 is to make the submission process easier. Other agencies typically have less intimidating applications and so it is merely a matter of editing your proposal down to the appropriate size to submit.

In addition to fellowships, graduate students should always be on the lookout for travel funds, whether awarded locally (WSU) or through research societies. These also are another mark of excellence you can add to your CV to help improve your job hunting prospects.

FORMAT FOR THE FINAL WRITTEN THESIS (M.S. AND Ph.D.)

All theses submitted at WSU must conform to the format requirements of the Graduate School (see Graduate School website for latest requirements). These formatting issues concern the appearance of the document (title pages, table of contents, fonts, margins, figures and legends, etc.) and not the content. The scientific content of the thesis is left to the discretion of the student and their thesis advisor. However, a typical thesis contains the following chapters:

- A general introduction that reviews the history and current status of the field pertaining to the investigation (10 – 30 pages recommended, may be less for an M.S. thesis).
- Investigative chapters written in the format of manuscripts suitable for submission to a scientific journal (these may already be published and simply need to be reformatted to meet the thesis format requirements of WSU Graduate School). These chapters can be self-contained in that they have their own unique citations, and the citation format is that of the journal for which the article is to be (or was) submitted. An M.S. thesis typically consists of a single data chapter whereas a Ph.D. thesis typically consists of 3 or more data chapters, but there is no minimal requirement.
- General conclusions (3 – 10 pages recommended). The student should feel free to speculate on the importance of their overall findings, perhaps point out areas that they believe will be fruitful for future investigation, or make general comments on the new state of the field in light of their findings. These should be summative conclusions that go beyond the conclusions and discussions found at the end of each of the investigative chapters.
- The Neuroscience Program office has cotton paper needed for parts of your thesis.

WSU DISSERTATIONS

BEFORE THE FINAL EXAMINATION

1. At least five (5) working days prior to the Oral Defense, Ph.D. and M.S. candidates **must**:
 - Deliver a complete copy of the Dissertation / Thesis to the Department or Program Chair. This copy can serve as the public copy and be displayed at a public place designated by the Department.
2. All fees must be paid [i.e., graduation fee (all students), microfilming fee (all Doctoral candidates), and copyright fee (available for Doctoral candidates only)] before submitting “Application for Degree”. The “Application for Degree” form **must** be on file before scheduling Final Exam.

AFTER PASSING THE FINAL EXAMINATION

1. A signed Dissertation/Thesis must be submitted in digital format within five (5) working days of the Final Oral Examination. Please use the attached “Final Dissertation / Thesis Acceptance Checklist” form when preparing copies for submission. To view Dissertation and Thesis Guidelines, please go to <http://gradschool.wsu.edu/Forms/index/html>
2. All students must submit a completed “Hold Harmless Agreement / Copyright Acknowledgement” form with the Dissertation / Thesis. In addition, all Ph.D. candidates must submit a completed and signed “Dissertation Agreement” form and should submit a completed and signed “Survey of Earned Doctorates” form.

PH.D. DEGREE GRADUATE SCHOOL DEADLINES / PROCEDURES*

PH.D. DEGREE GRADUATE SCHOOL DEADLINES / PROCEDURES

All forms can be found at <http://gradschool.wsu.edu/facultystaff-resources/18-2/>

Procedure	Deadlines
Obtain an advisor/committee chairperson	Within in first academic year of Graduate School
<p>Submit Program of study Request form to the Graduate School via your Academic Coordinator</p> <p>Doctoral students must submit the Program of Study Request form before the end of their third semester of study. NOTE: Students who have recently completed their Master’s degree at WSU and plan to continue for a Ph.D. may want to file their Program of Study early: one full semester before taking the Preliminary Exam.</p> <p>Preparation of the Program of Study form is the responsibility of the student, advisor, and doctoral committee. Department approves the form before submitting to the Graduate School.</p>	October 1 deadline for fall; March 1 deadline for spring
<p>Preliminary Examination (doctoral students only)</p> <p>Preliminary exams may be taken throughout the semester except during final exam week</p> <p>You must have an approved Doctoral Program of Study on file with the Graduate School to schedule a preliminary exam</p>	<p>Complete this exam at least 4 months (1 semester) prior to taking a Final Oral Examination/ defense.</p> <p>*Schedule after approval and completion of your program of study.</p>
<p>Schedule Preliminary Exam (doctoral students only)</p> <p>Submit exam form at least 10 working days before exam date.</p> <p>NOTE: Preliminary exams can be taken throughout the semester except no prelims can be held during final exam week.</p> <p>*Student should have 6 graded credits (or less) left to complete on their program of study coursework. This includes credits for which the student is currently enrolled (or further documentation is required).</p> <p>Taking your prelim for the second time? You must submit the Preliminary Exam Scheduling form at least 3 weeks (15 working days) in advance if you are re-taking your Preliminary exam.</p>	<p>Submit to the Graduate School: no later than 10 working days (2 weeks) prior to the date you wish to take the preliminary examination.</p> <p>Preliminary Exam details are at: https://gradschool.wsu.edu/chaptereight-c/</p>
<p>Applying to Graduate</p> <p>Apply for Degree in MyWSU (to Graduate). This deadline is also the last day to apply for a Graduate Certificate. If a student does not apply by the initial deadline, their name will not appear in the Commencement Program. All students pay a \$50 graduate processing fee, valid for one year only. Payment is made at the time of completing/submitting the online Application for Degree (MyWSU).</p> <p>*You must apply by the initial Deadline for your name to appear in the Commencement Program for that semester. If you miss the deadline, your name will not appear in the Commencement Program.</p>	
<p>NEED to UPDATE your Application for Degree?</p> <p>Already paid your fee but discovered you cannot complete your requirements for the semester in which you applied? Please see directions in the right-hand column</p>	<p>You must UPDATE your Application for Degree using the following steps:</p> <p>i. Email Gradschool@wsu.edu</p>

<p>The Graduate School will email you a form to complete, which must be returned to the Graduate School (emailed as an attachment). We will update your semester of graduation without any additional fees. Your \$50 graduation fee is good for one calendar year.</p>	<p>ii. Subject Line: Your name – UPDATE App for Degree iii. In body of email, provide: 1. Name 2. WSU Student ID# (very important) 3. Type of degree (master or doctoral) & Program (e.g. Ph.D. in Biology) 4. NEW semester for graduation (spring, summer, fall), and year iv. WATCH for an email from the Graduate School. Complete and return the form so we can update you.</p>
<p>Submit completed Final Exam Scheduling Form Completed means ALL signatures, thesis title, date/time/location(s) identifying where each committee member will attend the exam must be clearly provided on the scheduling form. At the same time, doctoral students need to submit an electronic copy of the final draft dissertation to ProQuest.</p> <p>For submission guidelines and formatting requirements, see https://gradschool.wsu.edu/documents/2014/12/dissertation-and-thesissubmission-guidelines.pdf</p> <p>2nd Attempt Exams: Taking your exam for the second time? You must submit your completed scheduling form no later than 15 working days (three weeks) before exam date.</p>	<p>No later than 10 working days prior to the exam date.</p> <p>2nd Attempt: no later than 15 working days (three weeks) before exam date.</p>
<p>Conduct Final Examination (Last possible date) We have extended the time to defend to the last possible date, but we do not encourage you to wait until the last date to defend. We are unable to make exceptions beyond these deadlines. Please meet with your committee to identify your final exam date well in advance to ensure you graduate on time and avoid having to postpone your final exam/defense or graduation to the next semester.</p>	<p>See Graduate School website for dates: http://gradschool.wsu.edu/facultystaff-resources/18-2/</p>
<p>Submit all required final documents to the Graduate School (French Administration Building, Room 324-J). Submission includes uploading a copy to the library at dissertations.wsu.edu and bringing the properly formatted (on 100% cotton paper) title page, signature page (signed in black or blue ink), and abstract to the Graduate School, along with the signed/witnessed Release/Hold Harmless Agreement and proof of completed Survey of Earned Doctorates (SED) (Certificate preferred) by 5:00 p.m. on the 5th workday following your successful defense.</p>	<p>Final dissertations must be submitted within 5 working days of a successful defense</p>
<p>Doctoral students who want to participate in Commencement must have all requirements completed by noon on this date. There are NO exceptions. This includes your dissertation cleared by the Graduate School (ALL formatting requirements completed).</p>	<p>Final dissertations are due within 5 working days of the successful defense.</p>
<p>Commencement Dates Commencement is an event separate from your Graduate School requirements. If you wish to attend Commencement, please register at http://commencement.wsu.edu.</p> <p>For policies regarding graduation participation as a graduate student, visit http://gradschool.wsu.edu/chapter-ten/</p>	

M.S. DEGREE GRADUATE SCHOOL DEADLINES / PROCEDURES*

M.S. DEGREE GRADUATE SCHOOL DEADLINES / PROCEDURES

All forms can be found at <http://gradschool.wsu.edu/facultystaff-resources/18-2/>

Procedure	Deadlines
Obtain an advisor/committee chairperson	As soon as possible after admission to the Graduate School
Submit Program of study Request form to the Graduate School via your Academic Coordinator *Programs/Departments with previous authorization to submit Master's Degree Programs of Study at a date other than what is listed: See the program's handbook for specific deadline.	No later than the semester before the semester in which you take your Final Exam
Submit Application for Degree form (Graduation) to the Graduate School. You do this online in your MyWSU portal. This deadline is also the last day to apply for a Graduate Certificate. All students pay a \$50 graduate processing fee, valid for one year only. Payment is made at the time of completing/submitting the online Application for Degree using myWSU. *You must apply by the initial Deadline for your name to appear in the Commencement Program for that semester. If you miss the deadline, your name will not appear in the Commencement Program.	
NEED to UPDATE your Application for Degree? Already paid your fee but discovered you cannot complete your requirements for the semester in which you applied? Please see directions in the right-hand column The Graduate School will email you a form to complete, which must be returned to the Graduate School (emailed as an attachment). We will update your semester of graduation without any additional fees. Your \$50 graduation fee is good for one calendar year.	You must UPDATE your Application for Degree using the following steps: i. Email Gradschool@wsu.edu ii. Subject Line: Your name – UPDATE App for Degree iii. In body of email, provide: 1. Name 2. WSU Student ID# (very important) 3. Type of degree (master or doctoral) & Program (e.g. Ph.D. in Biology) 4. NEW semester for graduation (spring, summer, fall), and year iv. WATCH for an email from the Graduate School. Complete and return the form so we can update you.
ALL Master's degree students must submit a Final Exam Scheduling form! *Submit completed Final Exam Scheduling Form no later than 2 full weeks (10 working days) prior to the exam date. 2nd Attempt Exams: Retaking the final exam? You must submit the completed scheduling form 3 weeks (15 working days) in advance. Draft Thesis: Thesis track master's students must submit an electronic draft of their final thesis (formatted in as complete a form as it will be before formal defense). Send your thesis draft to gradschool@wsu.edu in pdf format. In the email, provide your	No later than 10 working days prior to the exam date. 2 nd Attempt: no later than 15 working days (three weeks) before exam date.

<p>name, WSU student ID, and exam date. For submission guidelines and formatting requirements, see https://gradschool.wsu.edu/documents/2014/12/dissertation-andthesis-submission-guidelines.pdf</p> <p>*Completed means all signatures, thesis title, date/time/location(s) identifying where each committee member will attend the exam. Including research protocol permissions.</p>	
<p>Conduct Final Examination (Last possible date) We have extended the time to defend to the last possible date, but we do not encourage you to wait until the last date to defend. We are unable to make exceptions beyond these deadlines. Please meet with your committee to identify your final exam date well in advance to ensure you graduate on time and avoid having to postpone your final exam/defense or graduation to the next semester.</p>	<p>See Graduate School website for dates: http://gradschool.wsu.edu/facultystaff-resources/18-2/</p>
<p>Submit all required final documents to the Graduate School (French Administration Building, Room 324-J). Submission includes uploading a copy to the library at dissertations.wsu.edu and bringing the properly formatted (on 100% cotton paper) title page, signature page (signed in black or blue ink), and abstract to the Graduate School, along with the signed/witnessed Release/Hold Harmless Agreement by 5:00 p.m. on the 5th workday following your successful defense.</p>	<p>Final theses must be submitted within 5 working days of a successful defense</p>
<p>Master's students who want to participate in Commencement in the May (Spring) ceremony can complete their degree requirements in either Spring OR Summer. http://gradschool.wsu.edu/chapter-ten/</p> <p>If you wish to attend Commencement, please register at the Grad Fair or visit: http://commencement.wsu.edu. Commencement is an event separate from your Graduate School requirements.</p>	

NEUROSCIENCE DOCTORAL DEGREE CHECKLIST

DATE DEGREE STARTED: _____

ANTICIPATED GRADUATION DATE: _____

COMPLETED	ACTION
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❖ **1st Summer and Fall Semester**

- Meet with Graduate Studies Chair to plan course schedule for first semester and/or year (see page 16).
- Meet with Graduate Studies Chair to determine the two (2) to three (3) lab rotations to be completed (see pages 19-20).
- Establish ties in Washington State so that you will meet residency requirements for tuition waivers (see page 8).

❖ **Semester 2**

- Obtain advisor/mentor by end of first year in Program. The advisor must be in agreement to take on the student and meet programmatic requirements for such a responsibility. Selection of advisor must be approved by the Graduate Studies Committee. Notify the Neuroscience Program Office who you have selected.
- In consultation with advisor, select the members of your thesis committee.
- In consultation with advisor and thesis committee, finish selection of projected course work.

❖ **Semester 3**

- Apply for Washington State residency (see page 8). This needs to be done in August prior to the third semester.
- Submit "Program of Study" form to Neuroscience Program Office and Graduate School by October 1st of third semester (see <http://www.gradsch.wsu.edu/forms>).

❖ **Semesters 4 and 5**

- Take Qualifying Exam in 4th semester (see page 30).
- Meet with committee before scheduling the preliminary examination.
- Schedule Preliminary Exam with Graduate School (see page 31). Work with the Neuroscience Program Office to ensure that proper forms are submitted. Exams should be taken before the student ends their 5th semester. The Preliminary Exam process must be completed by the end of the 6th semester.

❖ **Subsequent Semesters**

- Enroll in Neurosci 800 (or Vet_Ph 800 for Vet Sci students) each semester until degree completion.
- Apply for extramural funding such as an NIH F31 Fellowship, Poncin Fellowship and Travel Grants (see page 33).
- Meet annually with committee. This is **required**. Email Becky Morton (bmorton@wsu.edu) after each committee meeting.

❖ **Final Semester**

- Apply for degree in semester you will graduate (see pages 35-36 for deadlines).
- Schedule Final Exam (thesis defense) after you apply for the degree (see page 32). Pay appropriate fees.
- Within 5 days of defense submit final copy of dissertation to Graduate School (see page 34).
- Order cap and gown if you plan to participate in the graduation ceremony.
- Update your mailing address.

Meet with thesis committee 2-3 months before thesis defense

Objectives and Outcomes for the Doctoral Program in Neuroscience

Objectives for the Program are:

1. To enable students to develop as successful professionals for highly competitive positions in academia, industry and government.
2. To prepare students to be effective researchers in the field of neurobiology.
3. To enhance visibility of the doctoral program in neuroscience nationally and internationally.

Student Learning Outcomes (SLOs) for the doctoral program in neuroscience:

1. To enable students to develop as successful professionals for highly competitive positions in academia, industry, and government, the program aims to provide a variety of experiences that help students to:
 - a. Develop expertise in appropriate concepts, theories, and emerging methodologies in neurobiology to fully understand how the brain and nervous system functions through studies ranging from the molecular (small molecules, peptides, proteins, and other molecules important to the function of the nervous system), through the cellular (especially neuronal and glial cells), to the systems level (neural regulation of key physiological processes).
 - b. Develop proficiency in presenting research to local, regional, national, and international audiences through publications in professional journals and conference papers given in a range of venues, from graduate seminars to professional meetings.
 - c. Develop leadership skills by participating in professional organizations, becoming members, attending meetings, and, where appropriate, taking leadership roles.
 - d. Broaden their professional foundations through activities such as teaching, outreach, fellowships, and grant applications.
2. To prepare students to be effective researchers in the field of neurobiology, the program aims to provide a variety of experiences that help students to:
 - a. Become independent, self-motivated researchers with the ability to recognize problems in their field of expertise and formulate solutions to the problems.
 - b. Develop comprehensive knowledge of previous and current research in their field of expertise and be able to demonstrate that knowledge capability in a review of the literature.
 - c. Generate viable questions within their field of expertise and pose problems or hypotheses related to those questions.
 - d. Apply sound research methods to problems in neuroscience and describe the methods effectively.
 - e. Perform statistical analyses of research data and present the results in a way that makes clear sense of the data.
 - f. Discuss the solution to the research problem or the support or lack of support for the hypothesis in a way that effectively documents the contribution of the research to the area of study.
 - g. Communicate their research clearly and professionally in both written and oral forms appropriate to the field.
3. To enhance visibility of the doctoral program in neuroscience nationally and internationally.
 - a. Attract, secure, and retain high-quality students.
 - b. Enhance doctoral education by creating advanced courses, providing more support – resources for fellowships, research, travel to conferences, etc. – for doctoral students, and providing effective mentoring that encourages students to graduate in a timely manner.
 - c. Place graduates in positions in academics and industry.
 - d. Attract, retain and support a nationally recognized research-active faculty.

Outcomes Assessment Plan

Program Assessment:

Each year the administrative staff of the program will compile the following information and enter it into an annual report. This material will be distributed to the program faculty so they can review and then comment on the progress the program is making in meeting its stated Objectives and Outcomes.

1. Publications in peer-reviewed journals in which graduate students are authors, including post-graduate publications containing the results obtained while a student in the Graduate Program in Neuroscience.
2. Abstracts presented by graduate students at local, regional, national, and international meetings.
3. Grant and fellowship applications submitted and/or awarded that are authored by graduate students. In addition, the program tracks the success of post-graduates of the program who go on to receive competitive postdoctoral fellowships at their next place of employment.
4. Awards and honors received by graduate students.
5. Non-peer-reviewed scientific materials published with graduate students as authors or co-authors.
6. Recruiting and outreach events in which graduate students participate.
7. Admission competitiveness statistics is kept for each admitted graduate student, along with degree outcomes. This includes whether a degree is successfully completed (and time to completion) or if the student drops from the program before completion of the degree.
8. If a student fails to complete the program, the reasons for failure to complete the degree will be recorded.
9. If a student successfully completes their degree, we will track their immediate employment status and follow up with post-graduate surveys one-year, five-years, and ten-years after completion of the degree.

Student Assessment:

In addition to program outcomes, individual doctoral level students will be annually assessed for their degree of development. The purpose of this assessment is to determine if individual competencies are being achieved, and thus enable faculty to develop improvements in the curriculum that will better enable students of the program to achieve the desired outcomes outlined above. Described below are the timing and responsible agents for carrying out individual student assessments.

First Year

- Adequate student progress will be determined by grades in course work and review of comments written by rotation project advisors.
- Poor performance in any area may be grounds for dismissal from the program. The program director, after consideration of comments made at the summer faculty meeting, will be responsible for making any final decision regarding status of the student in the program.

Second Year

- Adequate student progress will be determined by grades in additional course work, reviews by TA advisors when a student has participated in teaching a course, successful completion of Neuro 592 assignments, a WIP seminar, successful completion of the written/oral qualifying exam, and the annual review of the student by their thesis advisor. Adequate progress includes performance in the lab, particularly participation and fulfilling commitments.
- After the written/oral qualifying exam has been completed, the Qualifying Exam/Graduate Studies Committee will then make a recommendation regarding the student's future in the program to the entire graduate faculty in the program at the summer meeting and the manner in which the student progresses in the program (continue to the preliminary oral exam, remediate any deficiencies identified, move to the Master's track, or immediate termination) determined.

Third Year

- Adequate student progress will be determined by the student's performance on the preliminary oral exam and the annual review of the student by their thesis advisor. The thesis advisor will present a summary of the student's progress at the summer graduate faculty meeting. Adequate progress includes performance in the lab, particularly participation and fulfilling commitments.

- It is expected that students will complete their preliminary examination by the end of their third year. Failure to do so can be grounds for dismissal from the program. The student's thesis committee will be primarily responsible for evaluating the student's performance on the preliminary exam, although any member of the graduate faculty can participate in the examination if they so choose.

Fourth and subsequent years until program completion

- Adequate student progress will be determined by annual reviews by the student's thesis advisor and a summary presented by the advisor at the summer graduate faculty meeting.
- The student shall schedule a final examination when the student's thesis committee has determined that the progress on the student's research problem is adequate to merit a doctoral degree. The student's thesis committee will be primarily responsible for evaluating the student's performance on the final exam, although any member of the graduate faculty can participate in the examination if they so choose.

STUDENT ASSESSMENT RUBRIC

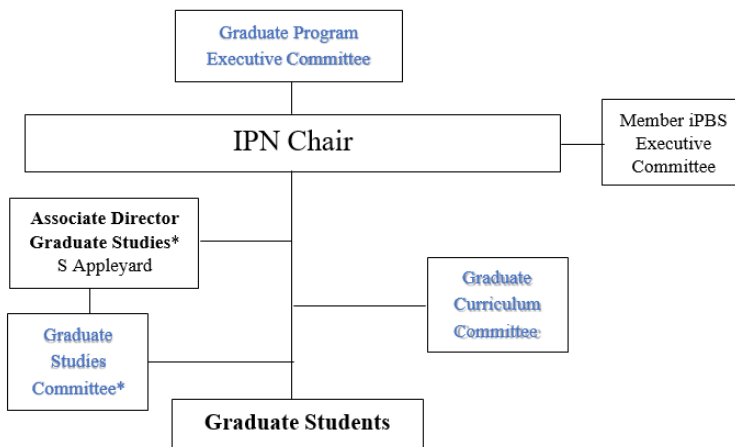
Below is a program assessment overview for PhD students. In it you can find a summary of how students will be evaluated and how their progression in the program is assessed from the time they start until final completion. Review of the parameters to be evaluated reveals expectations of the student's progress and how each additional programmatic element builds on the core. For example, with every activity the faculty observe whether a student is using technical terminology in the correct manner, but it is only at the end of the program that the faculty evaluate the ability of the student to complete an original investigation.

GRADUATE PROGRAM GOVERNANCE

ORGANIZATIONAL STRUCTURE

The Graduate Program in Neuroscience has two (2) standing committees: Graduate Studies Committee, and Curriculum Committee. Because the Biomedical Science Program has no set curriculum, it has no standing Curriculum Committee and the student's thesis committee fulfills the function of the Curriculum Committee. For other functions (Graduate Studies and Executive), the committees serve both programs. Finally, both graduate programs are part of the Integrated Programs in Biomedical Sciences (iPBS), and so the programs work to align themselves with the shared curriculum and goals of the iPBS program. A graphical representation of program structure is:

Organizational Chart for Graduate Program in Neuroscience



**Chair of the Graduate Studies Committee is the Associate Director for Graduate Students*

Current Committee Assignments

Graduate Studies Committee

S Appleyard (Chair, Assoc Director)
A Coffin (2024, WSUV)
J Peters (2024)
K Delevich (2024)
G Wayman (2023)
K Honn (2024, WSUSp)
R McLaughlin (2023)

Graduate Curriculum Committee

H Jansen (N540)
G Wayman (N541)
D Rossi (N542)
R Fuchs (N543)
M Morgan (at-large, 2024, WSUV)
G Wayman (at-large, 2023)
L Kapas (at-large, 2024, WSUSp)

GRADUATE STUDIES COMMITTEE (NEUROSCIENCE AND BIOMEDICAL SCIENCE)

The voting members of the Graduate Studies Committee shall be elected / appointed from the Graduate Faculty of the Program and will consist of at least four (4), but not more than eight (8) voting members.

The Chair of the Graduate Studies Committee will be the Co-Director of the Program in Neuroscience and is appointed by the Program Director in accordance with the Neuroscience Program bylaws.

The Graduate Studies Committee has responsibilities to both the Graduate Program in Neuroscience and the Graduate Program in Biomedical Sciences. Thus, all duties described below are applicable to both programs:

- ***Stipends/Fellowships***

The Committee makes recommendations to the Program Director for distribution of departmental and programmatic stipends and fellowships.

- ***Recruitment***

The Committee makes recommendations to the Program Director in the selection of new Graduate Students to the program.

- ***Examinations***

The Committee is responsible for the design and timing of exams (see pages 30 - 33).

- ***Student Progress***

The Graduate Studies Committee must approve all selections for Doctoral Mentors. When a student is ready to name their Doctoral Mentor, they must petition the Graduate Studies Committee for approval. The petition must include a letter from the proposed Doctoral Mentor stating both their willingness to take on the role as Doctoral Mentor and describing the financial support available to support the student in their thesis work.

- ***Policies***

The Committee shall keep a *Policies and Procedure Manual* for the Program.

- Minor alterations in the policies of the Graduate Studies Committee can be made by majority vote within the Committee. Major changes to policies should be submitted to a vote of the entire Graduate Faculty. The Chair of the Graduate Studies Committee, in consultation with the Program Director, shall determine if a change requires the vote of the entire Graduate Faculty.

CURRICULUM COMMITTEE

The voting members of the graduate subdivision of the Curriculum Committee shall consist of the course directors of the core special topics courses. This does not include membership based on mentoring research credits or leading a special topics course. In addition, the Curriculum Committee shall have two - three (2 - 3) At-Large members elected from the Graduate Faculty who are not course directors for a core special topics course.

- ***Design of Program***

The Curriculum Committee is responsible for the design of the overall curriculum of the program.

- ***Program Changes – Minor***

- When changes in the curriculum are minor (modifications within a single course such as change of focus, number of credits, prerequisite change, or SATISFACTORY/FAIL vs. graded options), the Committee can make the alteration without a vote of the entire Graduate Faculty.
- Minor changes requested by students

- ***Program Changes – Major***

When changes in the curriculum are major (dropping or adding one or more courses to the curriculum or change in degree requirements), the Committee must propose the alteration to the entire Graduate Faculty membership.

- Once the information has been distributed and comments returned, at the discretion of the Chair of the Curriculum Committee, the proposal can be altered before a final vote on the proposed changes.
- The Chair of the Curriculum Committee will be responsible for organizing the vote of the Graduate Faculty.
- To pass, the proposal must have a simple majority of votes cast.

- ***Program Changes – Special***

The Curriculum Committee is also responsible for any non-standard proposed changes to the curriculum of an individual student. These include, but are not limited to, acceptance of course work prior to entering the Graduate Program as substitutes for specific core requirements, and acceptance of other graduate credit taken at WSU in lieu of specific core course requirements in the Program. To request such changes the student must write a letter to the Chair of the Curriculum Committee outlining the nature of the request. Such requests can be handled by electronic meetings and do not require a physical meeting of the Curriculum Committee unless requested by two (2) or more members of the Curriculum Committee.

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