PROGRAM GUIDELINES 2024/25

Behavioral and Systems Neuroscience Graduate Program

Approved by BSN training faculty 9/17/24

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Overview

The Behavioral and Systems Neuroscience Graduate Program (BSN) has a long-standing commitment to educating the next generation of behavioral neuroscientists. Our objectives are that students learn to conduct high-quality research that enhances our understanding of brain-behavior relations; that they have the ability to disseminate their research within and beyond the general science community; and that they graduate prepared to select and pursue a fulfilling career. Graduate training is an exciting activity but can be overwhelming. These guidelines serve to help trainees and faculty through this process. They do not, however, supersede the OHSU Academic Regulations for the School of Medicine Graduate Programs. In this document, we refer to this Graduate Program as BSN, and the SOM Department that hosts BSN as Behavioral Neuroscience (BEHN). Although most of what is in this document applies to all students, the guidelines that are in place *at the time of initial enrollment* are what specifically apply to any given student. The changes described in the paragraph below apply to students who matriculate in Fall, 2024 or later.

Major changes in the 2024-2025 guidelines (affecting students who start in Fall, 2024 or later) include a new course requirement for all students who start in Fall of 2024 or later (BEST 618; 3 credits offered every other year), an elective requirement of 6 credits (down from 9 to accommodate BEST 618), a requirement that students discuss any elective not listed in the guidelines on p.15 with the program director before enrolling, and the requirement that the qualifying exam must be passed by the end of the spring term in the second year. Advanced students who matriculated prior to Fall, 2024 may take BEST 618 to fulfill part of the elective requirements.

The Behavioral and Systems Neuroscience graduate program is committed to ensuring that all individuals present within the training environment are treated with dignity and respect. We understand that diversity enriches and improves the quality of research and ideas, and creates an environment conducive to the development of novel, innovative solutions.

Program Milestone Overview

	Program Milestones	**Deadlines**
M1	Complete research rotations and select a mentor	Two weeks before the end of Spring Yr1
M2	Complete required coursework	Fall Yr1: NEUS 624, NEUS 625, BEST 642, MGRD 650 Spring Yr2: CONJ 620 Winter and Spring Yrs1-3: BEST 607 Seminar
M3	Pass Reprint Exam	By the end of Spring Yr1
M4	Complete elective coursework	Before graduation
M5	Pass Qualifying Exam (QE)	By the end of Spring Yr2
M6	Complete dissertation and final PhD requirements[1]	No later than a total of 7 academic years (the average graduation time for BSN students is 5.5yrs)

Detailed Checklist and General Timeline

Forms are linked below and can be found on the Graduate Studies website.

	Program Milestones	**Deadlines**
M1	Complete 2-4 research rotations (BEST 601). Prepare Research Rotation Form prior to each rotation.	Winter and Spring terms Yr1

[1] Per By-Laws of the Graduate Council: *The time period from matriculation to granting the Ph.D. degree shall be limited to 7 academic years*. This includes the period after the dissertation defense when the student is preparing to submit the final dissertation document to the OHSU library.

	Program Milestones	Deadlines
M1	Select mentor and lab. Email program coordinator to prepare Mentor Assignment Form.	By the end of Spring term Yr1
M2	Core courses: NEUS624, NEUS625, BEST640	Fall term Yr1
M2	MGRD 650: The Practice and Ethics of Science	Fall term Yr1
M2	CONJ 620	By the end of Spring term Yr2
M2	BEST 607 Seminar	Winter and Spring Yrs1-3
M3	Student sends email about the Reprint Exam to the Graduate Program Director (See Reprint Exam section for email details)	4 weeks before Reprint Exam
M3	Reprint Exam Committee (REC) Chair sends email to student with selected Reprint Exam paper	2 weeks before Reprint Exam
M3	Reprint Exam	By the end of Spring term Yr1
M4	6 elective credits completed	Before graduation
M5	QE Committee (QEC) formation: Send email to Program Director and Graduate Program Coordinator with list of four proposed QEC members	At least one month before the written proposal is submitted; in time to complete QE requirement by the end of Fall term Yr3
M5	QE: Submit written research proposal to QEC	At least two weeks before scheduled oral presentation; in time to complete QE requirement by the end of Fall term Yr3
M5	QE completed: Present departmental seminar on proposed research and take Oral Examination (OE)	By the end of the Fall term Yr3
M6	Select Dissertation Advisory Committee (DAC). Send completed Request for Advisory Committee form to Program Director and Program Coordinator	By the end of the academic term after the term of the QE
M6	Meet with DAC and present research proposed for dissertation	By the end of the academic term after the term during which the QE is passed
M6	Meet with DAC to discuss progress	At least every six months
M6	Complete and submit DAC/TAC* Meeting Summary to Graduate Studies Office *via* the DAC/TAC Meeting Summary Intake Form *: TAC: Thesis Advisory Committee. This committee is for Master's students only	Within 10 business days post each DAC meeting
M6	Send dissertation document to DAC for review	At least 6 weeks before scheduled defense date; in time to complete all dissertation and final PhD requirements by no later than a total of 7 academic years
M6	Send Request for Oral Examination Form to Graduate Studies Office after DAC approves the draft of the dissertation document & provides feedback to student	At least 4 weeks before scheduled defense date

	Program Milestones	Deadlines
M6	Dissertation: departmental seminar and oral exam. Submit Oral Exam Certificate and Dissertation/Thesis Certificate of Approval.	By no later than a total of 7 academic years (including all final Ph.D. requirements). The average graduation time for BSN students is 5.5yrs.
M6	Complete all final Ph.D. requirements up to and including submission of final document to OHSU library	**Strongly preferred:* By the end of term in which the oral exam occurred, but no later than within 6 months after oral exam

Additional Considerations

1. **Behavioral Neuroscience Responsible Conduct of Research (RCR 003)**: Seminar offered every four years. If this occurs in a student's first year, attendance is waived, but required for all other students. First year students must take MGRD 650 The Practice and Ethics of Science in Fall term Yr1.
2. **Annual Student Evaluation**: Student submits a Graduate Student Annual Progress Report Intake Form, an up-to-date degree audit, and, if applicable, the most recent DAC meeting summary by the end of the spring term each year. The Graduate Program Director meets with the student to discuss progress. Progress reports are forwarded to SOM Graduate Studies Office and BSN Graduate Program Coordinator.
3. **Behavioral Neuroscience Trainee Seminars**. All trainees, except students in the first or last year of their graduate studies, are expected to present their research at the departmental seminar. The presentation is 30 minutes, including questions and answers. There are no academic credits for the seminars. **Attendance of these seminars is expected for BSN students and BEHN postdocs and training faculty.**
4. **Teaching Practicum (BEST 650)**: After passing the QE, students are eligible to enroll in a teaching practicum course with permission from their mentor. The BEST 650 course provides instruction and practice in undergraduate teaching. The student and mentors must sign the Teaching Activity Approval Form located on the School of Medicine Forms and Policies page. The completed form must be submitted to the Graduate Program Director and the Graduate Program Coordinator. See section on Teaching and Educational Outreach Activities (BEHN) for additional information.
5. **Additional Requirements for MD/PhD Students**: MD/PhD students should consult the MD/PhD program coordinator for additional requirements. Students enrolled in the School of Medicine MD/PhD Program must complete all course requirements and program milestones. However, MD/PhD students are granted 2 elective credits for the neuroscience block in the MD curriculum, meaning that MD/PhD students must complete 4 elective credits instead of the 6 required for the PhD. MD/PhD students also are required to take a total of 3 credits of BEST 607, instead of 6 required for the PhD. Rotation requirements are the same for MD/PhD students as for PhD students, but in cases in which there is a clear agreement between student and mentor, one rotation may be allowed after petitioning for approval from the Program Director.
6. **Flexibility**. The Program follows these guidelines and deadlines to the best of the abilities of participating faculty. Unusual circumstances, such as university shutdown during a pandemic, allow deviations from these rules as determined by the Graduate Program Director, BEHN Chair, participating faculty, and SOM Graduate Studies.

Definitions

Definitions

- **Dissertation Advisory Committee** (DAC): The DAC guides and advises students on research and dissertation preparation. The DAC is composed of at least four faculty members with expertise in one or more aspects of the student's project and who are familiar with the requirements of the graduate program. See Dissertation Advisory Committee DAC Formation section for more details.

- **Oral Examination** (OE): Final exam consisting of a public seminar and oral questioning. See Oral Examination (OE) for more details.
- **Ph.D. Candidate**: A Ph.D. graduate student who has successfully completed the Qualifying Examination (QE) and is in good academic standing. A Ph.D. candidate has completed all required coursework and examinations and is determined to be ready for dissertation research.
- **Qualifying Examination** (QE): A required exam consisting of a written proposal, public seminar and oral questioning. See M5 Qualifying Exam (QE) for more details.
- **Reprint Exam:** A required first year exam. The exam evaluates: (1) the ability to critically assess a research article, and (2) oral expression skills.

Links and Forms

Login with OHSU network credentials may be required for some sites

Links

- Basic Science Shared Administrative Services (internal Bridge site)
- MGRD 650 The Practice and Ethics of Science
- Department of Behavioral Neuroscience (internal Bridge site that includes Forms and Deadline summary)
  Department of Behavioral Neuroscience (public website)
- OHSU Academic Regulations for the School of Medicine Graduate Programs
- Neuroscience Graduate Program
- https://grants.nih.gov/OHSU
- Office of the Registrar
- Sakai
- BSN Training Faculty
- PhD Student Stipend Policy 2024-2027
- School of Medicine Graduate Studies
- Student Self-Service

Forms & Policies

- Graduate Studies Forms and Policies
- Office of the Registrar - General Forms & Information
- Graduate Council By-Laws

Program Contacts

The following people play different roles in the graduate program. The Program Director and Program Coordinator will be able to help with all issues and will likely direct students to other people on this list, so directing questions to the appropriate person about specific issues (e.g., scheduling, financial questions) is always helpful.

Name	Title	Phone	Email	Contact about:
Matt Lattal	BSN Graduate Program Director	(503) 418-2215	lattalm@ohsu.edu	Anything related to the program; he can direct the student to the appropriate person
Alex Breiding	BSN Graduate Program Coordinator	(503) 494-3467	BSNGradStudies@ohsu.edu; breiding@ohsu.edu	Logistics associated with registration, forms, deadlines, questions for the Office of Graduate Studies

Name	Title	Phone	Email	Contact about:
Kelsi Nagel-Rowe	Assistant Dean of Academic Affairs		naglek@ohsu.edu; somgrad@ohsu.edu	Graduate Researchers United questions, stipend/tuition, issues related to OHSU employment, scheduling leaves of absence if necessary
Tamara Phillips-Richards	BEHN Department Chair	(503) 346-0234	phillipt@ohsu.edu	Issues related to department oversight of the PhD program
Kris Thomason	Department Administrator	(503) 494-7765	thomason@ohsu.edu	Questions about department financial support and facilities
Osvaldo Hernandez	Administrative Coordinator	(503) 494-0545	hernanos@ohsu.edu	Scheduling rooms/times for seminars, sending calendar invites, announcements of seminars and good news (passing a milestone) in the Monday Memo
Nicole Ernst	Grants/Contracts Coordinator	(503) 494-9708	ernstn@ohsu.edu	Grant submissions (e.g., NRSA, Tartar)
Judit Takacs	Grants/Contracts Coordinator	(503) 446-4966	takacs@ohsu.edu	Grant submissions (e.g., NRSA, Tartar)
Josh Merrick	Financial Analyst	(503) 494-0545	merrickj@ohsu.edu	Questions about spending on a grant (T32, mentor's R01)
Mark Smith	Comp User Support Analyst 2 (IT support)		smitmark@ohsu.edu or bascit@ohsu.edu	Local computer and network issues; remote access

Admissions

Our Program strives to admit top candidates from diverse backgrounds with excellent academic credentials, research experience, and motivation for research in our program. Each Fall, an Admissions Committee (AC) is formed consisting of the Graduate Program Director, Graduate Program Coordinator, 5-10 additional faculty, and one student (if there is a volunteer). One member of the department DEI committee is on the AC. The Graduate Program Coordinator ensures that incoming applications are complete. The Program Coordinator distributes the applications to AC members for primary and secondary reviews soon after the application deadline (December 1st). The AC meets by mid December to evaluate the applications and select candidates who will be invited for interviews. The Graduate Program Coordinator invites the applicants and communicates with them, ensuring their arrival for interviews.

The interviews are scheduled for February or early March. Interviews may be remote or in person, which will be decided by the Program Director in consultation with the BEHN Department Chair around the time that the application portal opens in September. The interview day schedule includes a presentation by the Graduate Program Director followed by a Q&A session, at least 4 interviews with training faculty, 1 interview with a current BSN student, scientific presentations, and a tour of the facilities. The faculty and current students are asked to provide their feedback on the applicants within a day after the interview. The Graduate Program Coordinator compiles this feedback and makes it available to training faculty. The interviewed applicants are then discussed at a faculty meeting, where it is decided which of the interviewed applicants are to be offered admission. The Graduate Program Director and Graduate Program Coordinator communicate the faculty's decisions to the applicants.

First Year Faculty Advisor and Student Advisor

The Graduate Program Director will assign a student peer advisor to each new student prior to the student's arrival. The Program Director will also act as the faculty advisor or assign other faculty to new students until they have joined a lab. In this role, the faculty advisors will meet with the student at least once per term to discuss coursework, academic performance and research opportunities, help find appropriate labs for rotations and dissertation research, and otherwise advise the student during the first year. The peer advisors will provide a student perspective to help students select classes, rotation placements, and provide other information relevant to adjusting to graduate school and life in Portland.

M1 - Research Rotations

New graduate students are required to participate in a minimum of 2 Research Rotations; a maximum of 4 rotations are allowed. Rotations are held during the winter and spring terms of the first year (up to three 8-week rotations distributed across the two terms); research rotation credits are under the pre-QE research credits (BEST 601). If a student decides to join a lab after the first 2 rotations in the Winter term, she/he will not be required to do further rotations.

The research rotations involve spending a substantial amount of time engaged in research in the laboratory of a BSN training faculty member. These rotations give new students an opportunity to learn more about particular labs and PIs through participation in a defined research project before making a commitment to a lab for dissertation research. Rotations should be designed to further the student's training as a researcher. The specifics of a project will differ from mentor to mentor, and may, for example, involve direct work with animals or humans, molecular work on previously collected tissue, or computational work with large data sets. Rotations must involve experimental work and cannot focus entirely on literature review. Research rotations provide a test for the student's fit with the laboratory and their research skills and interests. At the end of the rotation, rotation advisors will provide the student with a firm "yes" or "no" as to whether they will accept the student into the lab.

Research Rotation Guidelines

Purpose

Research rotations provide the first step in determining where each first-year graduate student will conduct their dissertation research.

Prior to Rotations

The department keeps a list of training faculty. The Graduate Program Director solicits information about available rotation projects from training faculty early in the Fall term and distributes the list of projects to students. The students select their rotation sites from this list and through additional interactions with potential rotation preceptors. Once the preceptor is identified, the preceptor and student complete the Rotation Approval Form and forward to the Graduate Program Coordinator no later than 4 weeks before the start of the rotation. The request includes a brief description of the proposed project.

All rotation assignments are reviewed by the Graduate Program Director and the BEHN department Chair. The Graduate Program Director assigns research rotation placements for each student during the first year. In determining these assignments, strong preference is given to: (a) matching the interests of the student with available research opportunities, (b) assigning faculty who are willing and have the resources needed to serve as the student's faculty mentor after the 1st year, (c) a clearly defined rotation project as outlined by the preceptor faculty.

Duration of Rotations

Students do not participate in rotations in the Fall term. In Winter term, students have a limited course load and are expected to participate in at least two 8-week rotations. The second rotation spans the winter and spring term. The cumulative time in the three rotations spans the duration of the Winter and Spring terms. Consecutive rotations in the

same lab are possible with the permission of the Graduate Program Director. Shorter rotations also are possible with the permission of the rotation mentor and the Graduate Program Director. The Program Coordinator can provide registration assistance.

Number of Credits

First year students are expected to register for at least 5 hours of research credit per rotation (BEST 601 Research). It is expected that first year rotation students will spend a minimum of 30 hours in the lab each week of the rotation. Any significant deviation from that level of commitment of time should be discussed with the Graduate Program Director. One research credit corresponds to 3h/week of lab work.

See also OHSU Policy No. 02-50-015 regarding Assignment of Course Credit Hour: "*Laboratory Instruction: One credit is assigned for three hours of laboratory instruction or its equivalent per week per term*"

Rotation Activities

The rotation project should follow the topic proposed for the rotation in the Fall term, but can deviate per student and preceptor agreement. The project could include: (a) learning of surgical, analytical, or other specialized laboratory techniques; (b) learning to use computers and other equipment for data collection and analysis; (c) assistance in the execution of ongoing research; (d) development and implementation of an individual research project.

Each student is expected to meet individually with their research advisor for at least 1 hour per week during the rotation. This time should be used to increase the student's knowledge and understanding of the research conducted in the rotation advisor's laboratory. For example, time could be spent discussing recent research or review papers (from the rotation advisor's lab or elsewhere), the rationale for ongoing projects, research design/methodology or anything else that seems appropriate. It is suggested that student and rotation advisor decide in advance what they intend to discuss so that each can prepare for the meeting as needed. Students are also expected to participate in regular lab activities such as lab meetings.

Each student participates in a scientific writing experience during the rotation. At the end of each rotation, students are expected to write a more detailed report of their rotation. The format should be similar to a brief scientific paper and include a 200-300 word referenced introduction to the project, followed by methods and results sections of scientific journal quality, a thoughtful and referenced 400-500-word discussion of their findings and their difficulties, and a list of citations. The final version of the rotation report (not a draft) is due on the last day of the rotation term and is graded by the rotation advisor. If a rotation involves a co-mentorship on a collaborative project between two PIs/rotation advisors, a single report of about the combined length of two individual reports can be submitted (instead of two independent reports) and evaluated independently by the two PIs involved. Rotation advisors should help the student understand the structure and content of the report, but the writing and figures should be prepared by the student.

Rotation Grading

BEST 601 (which includes rotations) research credits are graded as Pass or No Pass and are reflected on the student's transcript. Evaluations for the rotation also include a letter grade for the report, which is not recorded on the student's transcript. The letter grade, student report, and faculty evaluation of the rotation are sent to the student, the Graduate Program Administrator, and the Graduate Program Director. The report will be kept in the student's file. The faculty evaluation should include specific feedback on the student's overall performance during the rotation and comments on the rotation report. A No Pass grade on one rotation results in automatic probation. A No Pass grade on two rotations results in student's termination from the Program, at the discretion of Graduate Program Director.

M1 - Selection of a Faculty Mentor

The deadline for identifying the BEHN faculty mentor is two weeks before the end of Spring term of the first year.

Selecting a faculty advisor is a major decision. Students are encouraged to discuss their questions and concerns with prospective mentors, the Graduate Program Director and/or the BEHN Department Chair at any time. Assignment of faculty mentors must be approved by the Graduate Program Director and the BEHN Department Chair.

Upon selection of a faculty mentor, the Mentor Assignment Form should be completed. This form is initiated by the Graduate Program Coordinator. If, by the end of the Spring term of the first year, a student is unable to identify a PI willing to accept them in the lab for their PhD thesis, the program will consider dismissal.

M2 - Required Courses

Students are required to earn a minimum of 135 graduate-level term-hour credits. At least 100 hours must represent credit hours earned in the BSN Graduate Program (courses labeled "BEST"). These credit hours may be Research courses (minimum 16 pre-qual Research Credits BEST 601 and minimum 79 post-qual Research Credits BEST 603), didactic courses, journal clubs, nanocourses, and/or seminars. Graduate credit is granted only for courses in which an A, A-, B+, B, B-, C+, C, or P (Pass) grade is received. C- or lower will not earn credit. Students are required to maintain a minimum GPA of 3.0 in graduate-level courses.

Full-time status is maintained with a course load of 9 credits/term. Students cannot register for more than 16 credits without permission of the Associate Dean for Graduate Studies. Typically, students register for approximately 12 credits/term throughout their graduate career.

Individual courses will have their own attendance policies, but the general requirement of the program is attendance of all classes. Any class absence needs to be communicated with the course director in advance outside of emergencies.

Students are allowed to audit courses for no credit and no grade. This must occur with the permission of the course director and it is expected that students who audit will attend all classes and participate in class discussions as much as possible.

First Year Curriculum

Students must complete the following didactic courses during the 1st year (note BEST 618 is offered every other year; students must complete it when it is offered during Years 1 or 2 in the program).

- CONJ 620 Introduction to Biostatistics for the Basic Sciences (Winter)
- MGRD 650 The Practice and Ethics of Science (Fall)
- BEST 607 Issues in Behavioral Neuroscience Seminar (Winter & Spring)
- NEUS 624 Cellular Neurophysiology (Fall)
- NEUS 625 Cellular and Molecular Neurobiology (Fall)
- BEST 642 Systems Neuroscience (Fall)
- BEST 618 Behavioral Neuroscience Principles and Practice (Spring; every other year).

Required Course Descriptions

BEST 607 Issues in Behavioral Neuroscience Seminar

All 1st, 2nd, and 3rd year students must register for and participate in the weekly graduate seminar, BEST 607: Issues in Behavioral Neuroscience (1 hour), during Winter and Spring terms. This course consists of student presentations and discussions, with each term focusing on a theme selected by the course director (which rotates through all BSN faculty). Detailed information is provided in Appendix 1 at the end of this document.

BEST 618 Behavioral Neuroscience Principles and Practice

Core Course. 3 credits

The goal of this course is to provide foundations of behavioral neuroscience, given that the ultimate function of the nervous system is behavior. This team-taught survey style course will provide an overview of animal behavior and principles of measurement, manipulation, and analysis, followed by an in-depth discussion of topics related to behavioral genetics, stress-related behaviors, emotion and fear, motivation and reward, learning and memory, executive function, and social behavior, pain, and empathy. The course will focus on the theoretical framework for the topics, in conjunction with an application approach that will emphasize critical analysis of experimental design, measurement, interpretation, and problem solving. This course is offered every other year; students must take it in Year 1 or Year 2 of the program, whenever it is offered.

CONJ 620 (Introduction to Biostatistics for the Basic Sciences) and MGRD 650 (Practice and Ethics of Science)

Visit the Graduate Program in Biomedical Sciences (PBMS) course description page for information on CONJ 620 and MGRD 650. Students may petition to take a different statistics course, as long as the same general topics are covered (e.g., CPSY 641/642, Applied Health Statistics I and II).

NEUS 624 Cellular Neurophysiology

Core Course. 4 credits

This course presents the fundamental principles of how nerve cells work. Starting with ion channels themselves, it integrates them into the functioning of individual neurons. The way in which voltage-dependent ion channels act in concert to generate action potentials and synaptic potentials is discussed in the framework of basic physical laws. The mechanisms of transmitter release and the postsynaptic actions of transmitters are studied. The overall aim is to provide students with a quantitative understanding of how individual nerve cells communicate with each other. This course is the first in a sequence of three courses presented sequentially in the first term.

NEUS 625 Cellular and Molecular Neurobiology

Core course. 4 credits

This is a survey course designed to introduce the cell and molecular mechanisms underlying the development, structure and function of the nervous system. The course is divided into three general topic areas: Development, Cell Biology and Signaling in the Nervous System.

BEST 642 Systems Neuroscience

Core course. 4 credits

This course is an introduction to the functional anatomy, electrophysiology, and pharmacology of the central and peripheral nervous systems. Emphasis is placed on the functional organization and processing of information in the major input and output systems of the brain, including the somatosensory, motor, visual, auditory and autonomic and hormonal regulatory systems, and on the higher integrative functions of the nervous system, including learning, emotion, motor control, and sleep. The course will consist of lectures and readings in primary literature.

M3- Reprint Exam

Overview

During the first year of graduate training, students are expected to obtain experience in the critical evaluation of original research reports. This training is provided, in part, by the core courses and is typically supplemented by a program of supervised reading with their rotation preceptors and research advisors.

The Reprint Exam serves to set a standard of competency in the critical evaluation of research articles and in oral expression, which students are expected to attain early in their graduate career. In addition, it helps faculty to identify areas of weakness in this skill.

Reprint Exam Committee (REC)

Three OHSU graduate faculty members are assigned to evaluate the student's Reprint Exam: the REC includes the mentor, if the student has chosen one. The mentor must not be the Chair of the REC.

Timeline

- Students are expected to pass the Reprint Exam by the **end of spring term**.
- Four weeks prior to the exam: The student will send an email to the advisor, the Graduate Program Director, and the Graduate Program Coordinator, that should include the following:
    - The proposed REC members, including a suggested chair of the committee (the student confirms that the faculty agreed to be on the committee),
    - A brief (less than 50 words) description of the general research area of interest,
    - 3-4 suggested research papers, and
    - Tentative exam date(s). The program coordinator will work with students to reserve the classroom for the exam.
- The Graduate Program Director appoints the REC (suggestions by the students are considered but not guaranteed).
- The REC discusses suitable papers for the student to present and decides on the exact time of the exam.
    - The selected paper is **not** limited to the papers suggested by the student. However, committee members should base selection of new papers on research themes present in student-suggested papers.
    - Suitable papers meet the following criteria:
        - Ideally published within the last year, but the last 2-3 years is acceptable if the REC feels that a particular paper is especially approrpiate
        - Includes behavioral measures as well as other methods (molecular, cellular, etc.)
        - Published in a high-caliber journal
        - Related to student's research interests and/or current research
- **Exactly two weeks prior to the exam**: The REC Chair, in consultation with the other two REC members, informs the student via email of the selected paper.
- Immediately after the exam: The student is dismissed briefly while the REC determines the exam outcome: pass or fail. The student returns to the room and the REC chair informs the student of the exam results. If the REC recommendation is that the student failed the Reprint Exam, then the REC provides the student with feedback on deficiencies that resulted in that recommendation.
- Within one day of exam completion: The REC chair sends an email to the Graduate Program Director and Graduate Program Coordinator to notify them of the examination outcome; the student is copied on this email. If the student passed the exam, no further information is required. If the student failed, the email includes deficiencies that were discussed with the student immediately after the exam.
- Within three months after failed exam: A complete re-take of the exam may occur, if appropriate (see re-examination below), unless different timing is approved by the Graduate Program Director.

Preparation

Students have two weeks to prepare for the Reprint Exam. During this time, no REC members, including the student's advisor, may assist the student with questions relating to the paper, nor may any REC member help in any capacity (i.e., proofreading or attending a practice talk). However, senior graduate students and other members of the community (e.g., research technicians or postdoctoral fellows) may help while the student is preparing for the exam.

Examination

Electronic Devices

With the exception of technology required for the presentation, ***no electronic devices are permitted during the examination***.

Format

The Reprint Exam is restricted to the student and the REC. The Graduate Program Director or one additional faculty member assigned by the Graduate Program Director can be present at the exam in addition to the REC to evaluate the consistency of the exam quality. At the examination the student presents background material and discusses the paper's major points, analyzing the rationale for the research, the methodology chosen, whether methods to ensure robust and replicable results were employed, the validity of evidence obtained, and the conclusions drawn from the analysis. Twenty to thirty minutes are provided for the presentation, during which the student is expected to primarily focus on the results of the paper. The REC then questions the student on the presentation and other relevant topics including relevant literature and details of methodologies used in the paper. **The exam should last no longer than 90 minutes, including presentation and questions.**

Role of the REC Members

The REC chooses the paper to be presented, evaluates the presentation, asks questions related to the research paper and background information, and assigns a pass or fail grade at the end of the examination. The REC chair sends an email with the exam results to the student, mentor, Graduate Program Director, and Graduate Program Coordinator within one day of the exam. No committee member, including the student's mentor, may provide assistance to the student during the exam.

After the Examination

Assessment and Grading

The student will be assessed on the following criteria:

- Familiarity with the literature relevant to the paper
- Knowledge of background information, including relevant information from core classes
- Knowledge of the methods used in the paper
- Critical analysis of research paper (e.g., paper's main points, rationale for research and methods chosen, validity of results and conclusions)
- Organization and structure of the presentation
- Ability to thoughtfully answer questions

At the conclusion of the exam, the committee selects one of two options: pass or fail; all the listed criteria need to be evaluated as pass by the majority of the REC for a pass decision to be made. Within one day of the exam, the REC chair will email the student that either confirms the examination pass or provides specific feedback on the deficiencies that resulted in the recommendation for an examination fail. The Graduate Program Director and Graduate Program Coordinator receive a copy of this report.

Re-examination

If the student fails, the exam may be taken for a second time provided that the student was not already on probation. If the student is already on probation, then failure may, at the discretion of the Graduate Program Director and BEST faculty, result in termination of the student from the program. A failed Reprint Exam must be retaken within three months, unless otherwise approved by the Graduate Program Director. The exam will follow the same procedure and format as the first exam, but with a new article selected by the REC. It is expected that the exam committee will remain the same, though a student may petition the Program Director to request that one member of the committee be changed. Students may take the reprint exam a maximum of three times.

M4 – Elective Coursework

Six hours of elective credits. These credits can come from journal clubs (limit of 1 hour), nano courses, advanced topics, and additional electives *inside* or *outside* of the BSN program. Any elective outside of the BSN program (those courses listed with the BEST prefix) requires approval of the Graduate Program Director. Electives are primarily taken during the

second year. They can be taken in the first year, but should not interfere with rotations. Electives are scheduled every 2-4 years so that students have an opportunity to take each elective once in their time in the program.

BEST Elective Course Descriptions

BEST 616 Neurobiology of Learning and Memory (last offered Winter, 2023)

2 credits

The goal of this course to familiarize students with current thinking about the neurobiology of learning and memory. The course will focus on theoretical processes involved in memory and will evaluate experimental approaches designed to investigate the neurobiological systems, cellular, and molecular mechanisms involved in these processes. The course emphasizes critical analysis of experimental design and theoretical interpretations. A different topic will be considered each week and classes will alternate between background lectures by the instructor and student presentations that will address empirical work supporting two sides of a theoretically contentious issue related to that week's topic. At the end of the course, students will have a basic understanding of neurobiological mechanisms involved in memory and will be able to evaluate experimental approaches designed to investigate these mechanisms.

BEST 620 Neurochemical Systems Relevant to Behavior (last offered Spring, 2022)

1 credit

This course examines the mechanisms by which major brain neurotransmitters and modulators are synthesized and released and the biochemistry of synaptic responses. Basic physiological, biochemical, and morphological characteristics of neuronal transmission will be discussed. An emphasis will be placed on the experimental approaches used to examine these processes.

BEST 627, BEST 628 Neuroscience of Aging (offered in Fall 2024/Winter 2025)

1 credit each

This is a team-taught survey course on the neurobiology of aging that includes 1 introductory module on concepts in aging research, and aging of non-CNS systems, as well as modules on the neuroscience of aging of sensory, motor, and cognitive systems as well as neurodegenerative diseases. Each module examines the topic from the molecular to the human level of analysis.

BEST 639 Neurobiology of Addiction (last offered Fall, 2022)

2 credits

The course focuses on theoretical processes involved in addiction and evaluates experimental approaches designed to investigate the molecular, cellular, and systems neurobiological mechanisms involved in these processes. The course emphasizes critical analysis of experimental design and theoretical interpretations. Different topics will be discussed each week and the class meeting will consist equally of presentations and discussion. Note: This is an elective course for the program but is a requirement for students supported by the NIAAA or NIDA T32 grants.

Research Credits

Students who have not advanced to Ph.D. candidacy are required to register each term for at least five credits of BEST 601. If a graduate student receives a fail for BEST 601 (i.e. receives a grade of NP – No Pass) a term of research credits, the student may be immediately placed on academic probation. The student is required to obtain a passing grade in the next term (and subsequent terms) of research credits or the student may be dismissed from the graduate program. Students are required to notify and meet with their advisor immediately upon receiving a failing grade for BEST 601. The advisor will suggest a course of action that the student must follow in correcting academic performance.

Journal Clubs and Reading & Conferences

BEST 605 Reading and Conference (offered every quarter; contact individual faculty members for availability)

1 credit

The Reading and Conference course for 1 credit per term can be taken at any time during the student's coursework. This course can be taken with any one of the training faculty (mentor or otherwise). Since the students and mentors are already meeting regarding literature that is relevant to the student's research, the intent of this course is to expand discussions of an area in addition to the main direction of the student's current studies. This course can be taken on a P/NP basis or for a letter grade.

BEST 606 Qualifying Exam (QE) Journal Club (last offered Spring, 2024)

1 credit

The QE Journal Club includes a requirement that students create a research plan that broadly conforms to NIH NRSA guidelines. Students who complete this course will be familiar with the required elements of writing a project summary and narrative, specific aims, and a research strategy section of an NIH NRSA application; will have created complete versions of these sections, including methods ensuring robust and replicable results; and will have participated in discussions of these sections with other students taking the course. These activities should provide techniques and a basis on which to prepare for their QE as well as future NRSA applications.

Other one-credit journal clubs may be offered to provide an in-depth examination of the literature on a particular topic that will vary from term to term. The course objectives are to provide an up-to-date overview of the topic of interest and to provide students with experience at evaluating, presenting, and discussing the primary research literature.

Nano Courses

A nano course refers to a short course, offered for 0.5 credits. They are intended to be special topics courses that capitalize on timely subject matter, visiting expertise, and/or highlight new developments in a field. Nano courses are only offered once. More information about nano courses at OHSU can be found at the School of Medicine Graduate Studies Forms and Policies page.

Other Electives

Students may fulfill their elective requirements with courses outside of the BSN program, with the permission of the Program Director. Courses within the Basic Science tuition model at OHSU include all School of Medicine graduate programs. There are some tuition-neutral courses available at Portland State University (PSU). Contact the Graduate Program Coordinator for the most recent OHSU-PSU Memorandum of Understanding (MOU) for a list of available PSU courses. Courses outside of the tuition model may be considered for elective credit. In these cases, the student and mentor should develop a plan for payment of tuition. Students should obtain approval from the Graduate Program Director to ensure that electives from other programs can be applied to the program's elective requirement.

M5 – Qualifying Exam (QE)

Deadline

Pass for the QE must be awarded by the end of the first term of the student's 3rd year (usually the Fall term). Accordingly, the deadline for the oral presentation and Oral Exam is eight weeks before the end of the spring term of the student's 2nd year in the program (approximately April 20th), to provide time to complete any potential remediation.

A student who has passed the QE will be eligible to advance to candidacy, contingent on approval of the Associate Dean for Graduate Studies.

The QE will include 3 parts:

1. Written Proposal
2. Oral Presentation
3. Oral Exam (OE)

The student is responsible for finding and reserving a room(s) for the presentation and exam for a total of 1.5 hours.

Passing all parts is necessary for passing the QE (see Assessment grading and remediation section).

Passing of each part is determined by the QEC.

Qualifying Exam Committee (QEC)

Formation

The student and mentor provide names of four potential QEC members (these potential members should be contacted in advance to ensure that they are willing to serve) and the proposal topic to the Graduate Program Director at least 1 month before the written proposal is submitted. Within one week of receiving the information, the program director notifies the student of the approved QEC members.

Composition

There will be at least four members of the QEC, including a chair, selected by the Graduate Program Director. The mentor will not be a member of the QEC.

Role of the QEC Chair

The Chair will write a report summarizing the QEC's evaluation of the student's performance on the written proposal, oral presentation of the proposal, and oral exam. The report will include recommendations from the QEC on portions of the exam for which "conditional pass with remediation" was assigned with a timeline for completion of any remediation.

The form for the report can be found here. After the QEC chair fills out the form, it should be sent to the student, the program director, and the program coordinator.

Written Proposal

Deadline

Submitted to the QEC at least two weeks before the scheduled oral presentation.

Topic

Experimentally based research. The research proposal often serves as the basis for the dissertation proposal, but it can be on any topic that is agreed upon by the student and mentor.

Format and Scope

It is anticipated that the written research proposal can be adapted for subsequent submission to the NIH as a formal NRSA proposal. Accordingly, format will be: margins no smaller than 0.5 inch, Arial or equivalent font, no smaller than 11 point and the proposal will include the following sections:

1. Abstract (max 30 lines of text)
2. Specific Aims (max 1 page), which includes hypothesis to be tested
3. Research Plan (max 6 pages), which includes Significance (including a review of relevant literature) and Approach (including description of procedures, rationale for the studies, interpretation, analysis, and limitations/alternate strategies)
4. Vertebrate Animals and/or Human Subjects section as appropriate, following NIH guidelines for content
5. Appendix 1, which includes a signed statement by the student that all writing in the written proposal is original and performed by the student. It also will document the involvement of the mentor at each stage (see Mentor

Contribution). Finally, the student must acknowledge any and all intellectual discussions/writing, assistance/research planning and/or other support that was received in the preparation of the written document and the oral presentation.

Assessment

1. Document is written in proper English
2. Document conforms to the length and guidelines described in the "Format and Scope" section above
3. Background is well-researched, and literature is evaluated for rigor
4. Experimental design is rational, logical, and feasible
5. Proposed research significance is addressed at basic science and/or translational levels
6. Expected results are clear and alternative outcomes are described
7. Limitations and contingency plans are discussed

Oral Presentation

Format and Scope

1. Students will present their proposal in an open seminar that includes the QEC.
2. Presentation time should be approximately 30 minutes, and it should include an acknowledgement slide to list the contributions from all individuals on the written and presentation portion of the exam.
3. Audience members will be encouraged to ask the student questions about the research proposed and the associated background literature.

Assessment

The presentation is assessed on:

1. Quality and clarity of visual aids
2. Organization and structure of the presentation
3. Ability to clearly communicate specific aims, research significance, and the research plan

Oral Exam (OE)

Deadline

Immediately following the oral presentation. Should last less than 1 hour.

Format and Scope

The QEC tests the student's knowledge of the breadth and depth of their field as it relates to the research proposal. Attendance at the OE is limited to the QEC and the student. Mentor(s) or other participants (lab members, fellow students, etc.) are not permitted to be present at the exam.

Assessment

The student is specifically questioned on:

1. Familiarity with the literature described in the written portion
2. General knowledge of their field relevant to the document
3. Ability to identify limitations of the proposed research, experimental methods, data interpretation
4. Ability to propose experiments ensuring robust and replicable results
5. Ability to anticipate pitfalls and other problems and to describe feasible solutions
6. Ability to understand significance of proposed research

Mentor Contribution

There are several stages to the research proposal: formulation of the research question, determination of the research design, and practical details related to conducting the research (including training on procedures, creation of

experimental procedures, conduct of procedures, analysis and interpretation of outcome data). The student can use this guideline to document the involvement of the mentor at each stage.

It is expected that the mentor will discuss research with the student, but that the student will decide on the central hypothesis for the proposal and will create an initial research protocol to test the hypothesis without feedback from the mentor. Once the student begins writing the document, the mentor can provide input on the written proposal, but only in terms of suggestions on areas that are unclear or experiments that would be unlikely to help a student's future NRSA. The input is provided verbally - the mentor is not permitted to make edits to the document. Two common general points that the mentor should discuss with the student are whether the ideas are feasible and mechanistic (two common NRSA proposal criticisms); guidance about the amount of experimental work that is feasible in the timeframe of an NRSA award is appropriate.

These expectations apply to both the original written document and to the potential remediation.

Limits on Assistance and Documenting Assistance

The student must write the text of the written portion and create the slides for the presentation portion of the exam.

While formulating the central hypothesis themselves, students are encouraged to seek input into project design from faculty (see limitation on mentor's contribution above), students, and colleagues.

Students should practice their presentation with other students and lab members and seek advice on logic, order, and style.

Students must acknowledge/list contributions from all individuals in Appendix 1 of the written proposal and in an acknowledgment slide during the oral presentation.

Grading and Remediation

Each part is assessed separately as Pass, Conditional Pass with Remediation, or No Pass.

Remediation is possible for any part.

The student is allowed to remediate each part of the exam only once and must complete and pass the remediation according to the QEC-specified deadline. An extension of the remediation deadline requires approval by the Graduate Program Director. Failure to pass the remediation may, at the discretion of the Graduate Program Director and BEHN faculty, result in termination of the student from the program.

M6 – Dissertation

Advancement to Ph.D. Candidacy

The requirements for advancement to candidacy for the Ph.D. degree in BSN are as follows:

- Successful completion of all required didactic coursework in the BSN core curriculum (grades of C or better)
- Achievement of an overall GPA of 3.0 or greater
- Successful completion of MGRD 650: The Practice and Ethics of Science
- Successful completion of the Reprint Exam
- Successful completion of the QE

An *Advancement to PhD Candidacy Form* must be sent to the Graduate Studies Office. Students should contact the Program Coordinator to initiate this form. Students cannot be recommended for advancement to candidacy if they are on academic probation or if an incomplete grade remains on their transcript.

In accordance with the Graduate Council By-Laws, a minimum of six full-time academic terms is required for the Ph.D. degree. In addition, students must be candidates for at least three academic terms prior to the final OE for the Ph.D. degree.

Dissertation Advisory Committee (DAC) Formation

The Request for Advisory Committee (DAC) Form should be sent to the Graduate Program Director and the first DAC meeting should be held within one term after advancing to Ph.D. candidacy. Detailed instructions are in the Dissertation Advisory Committee (DAC) Policy. Note: since a non-departmental reviewer reader for the OEC is required later, including one graduate faculty who does not have a primary appointment in BEHN on the DAC should be considered. In that case, the reader could be from BEHN. The DAC may also include a member from outside of OHSU; this person may be a member or may be added as the reader when the request for oral exam is submitted (see Oral Examination below). If someone outside of OHSU is chosen, the student must submit the member's biosketch and a letter from the Program Director outlining why this member is appropriate for the DAC to Graduate Studies.

Ph.D. Research Proposal

A written Ph.D. Research Proposal must be submitted by the student and approved by the DAC by the end of the term that follows the QE. In general, it is expected that the proposal will contain a brief review of the relevant scientific literature, a statement of the rationale or hypothesis for the project, a description of proposed methods including the approach to statistical analysis, a discussion of the expected outcomes and their significance and references. Although the length and format for this proposal may vary depending on the nature of the project, students are strongly encouraged to adopt the format of the Research Plan in the standard NIH research grant application or NRSA application. A majority of the DAC members must approve the research proposal. The outcome of the first DAC meeting, including proposal presentation and its discussion (approval/disapproval) by DAC members should be detailed in the first Dissertation Advisory Committee DAC/TAC Meeting Summary. The student must submit the signed summary to Graduate Studies Office *via* the DAC/TAC Meeting Summary Intake Form within 10 business days from the meeting.

The student may proceed with their project after the Ph.D. proposal is approved by the DAC. In projects involving a complicated series of experiments, or in cases where later experiments depend on the outcomes of initial experiments, the Committee should require one or more follow-up meetings to review preliminary findings and/or to approve later stages of the project (see Meeting Summaries below). When preliminary findings indicate that a change in the direction or focus of the project is required, the student must reconvene the DAC to obtain its approval for proposed changes.

Dissertation Credits

Ph.D. candidates are required to register for at least 5 credits of BEST 603 per term. At least 79 BEST 603 credits are required for graduation. If a graduate student fails (i.e., receives a grade of No Pass in) BEST 603, the student is immediately placed on academic probation. The student is required to obtain a passing grade in the next term (and subsequent terms) for BEST 603 or the student may be dismissed from the graduate program. The student (in consultation with the mentor) is to schedule a DAC meeting immediately upon receiving a failing grade for BEST 603 in any one term. The DAC meeting must take place within two weeks of receipt of the failing grade on the dissertation credits. The mentor and DAC will suggest a course of action that the student must follow to correct performance in the research program.

Meeting Summaries

Students must meet with their DAC in person or virtually at least every six months starting the academic term after the QE as per the OHSU Academic Regulations for the School of Medicine Graduate Programs. Additional meetings may be scheduled by the student or by the members of a DAC to ensure the student progresses towards the Ph.D. degree. See also Dissertation Advisory Committee (DAC) Policy and the OHSU Academic Regulations for the School of Medicine Graduate Programs. The student must start a DAC/TAC Meeting Summary form five days before the DAC meeting and send it to the DAC chair. The mentor can fill in their section either before or after the DAC meeting. The form is

Behavioral and Systems Neuroscience Dissertation Approval

At least six weeks prior to the OE, the student must send a copy of the dissertation document by e-mail to all members of the DAC. At least four weeks prior to the OE, a majority of DAC members will indicate **Approve** or **Approve with Modification** the completed project dissertation document by e-mail before the Request for Oral Examination Form can be submitted by the student. The DAC members will sign the Request for Oral Examination Form and include the name of the "reader" on the form.

Oral Examination (OE)

Students should reference the Guidelines for Completion of Degree - Doctor of Philosophy.

Application for Degree

The Office of the Registrar requires that the Application for Degree be completed and is required in the Registrar's Office one term prior to completing degree requirements. The online Application for Degree is in the Student Information System.

Formation of the Oral Examination Committee (OEC)

The OEC must (1) include no fewer than four members of the Graduate Faculty who do not all have primary appointments in the same department or institute, (2) include at least one member who is not a member of the student's DAC, and (3) be chaired by a member of Graduate Faculty. The student's mentor should serve on the committee but may not serve as Chair. The Request for Oral Examination Form is on the School of Medicine Graduate Studies Forms and Policies page and must be submitted to the School of Medicine Graduate Studies Office no later than 4 weeks before the OE.

Formatting of the Dissertation Document and Preparation for the Defense

The OHSU Graduate Studies policy on formatting of the dissertation is to follow disciplinary conventions for style and formatting. Our program follows formatting guidelines that can be found here:

https://www.ohsu.edu/sites/default/files/2019-03/Preparation%20of%20Dissertation%20and%20Thesis.pdf

All members of the OEC must receive the following at least two weeks prior to the OE:

- An unbound copy of the dissertation from the student
- A copy of the approved Request For Oral Examination Form, which is forwarded to the Chair by the Graduate Studies Office upon approval of the Request for Oral Examination
- A copy of the Instructions for Members of the Oral Examination Committee document, which is forwarded to the Chair by the Graduate Studies Office upon approval of the request for OE.

Students must be registered for at least one hour of BEST 603 credit during the term in which the OE occurs. Students may not take the OE if they are on academic probation or if an Incomplete (I) grade remains on their transcript.

Dissertation Seminar

The OE must be held on campus unless extraordinary situations prevent it and shall be open to the public. It is the responsibility of the graduate student to set the date, time, and place of the OE and to advertise on campus and electronically.

The OE typically addresses issues related to the thesis project, but is not limited to the content of the thesis document.

Questions related to other aspects of the student's graduate education should be anticipated. The public seminar is an important component of the OE and the candidate's performance is evaluated by the OEC in the context of determining the general preparedness of the candidate to receive the degree.

A student who fails the OE may petition the department for the opportunity to be reexamined. Such petitions must be submitted in the form of a letter to the Department Chair within 2 weeks after the exam. The petition letter should include an explanation of any circumstances that may have adversely affected the student's performance on the exam. Moreover, the letter should provide a rationale for expecting a different outcome upon reexamination. The student's request is formally considered at a meeting of the department's graduate faculty within one month of the receipt of the petition letter. The student receives written notice of the department's decision within three days after the meeting. In case of reexamination, the BEHN Department Chair may recommend changes in the composition of the OEC. In accordance with the Graduate Council By-Laws, a student whose petition for reexamination is denied by the department may appeal to the Graduate Council.

Finalizing Ph.D. Requirements

Reference the Guidelines for Completion of Degree - Doctor of Philosophy for a full list of requirements. In general, students should plan to make corrections to the dissertation, submit the dissertation to the library, and complete the Survey of Earned Doctorates.

Students who have not defended may still participate in the graduation ceremony. Students should contact Graduate Studies in advance to confirm their eligibility for participating in the graduation ceremony.

More information about library submission can be found here:

https://libguides.ohsu.edu/digital-collections/how-to-submit-theses-dissertations-capstones

Course Transfer

In accordance with the Graduate Council By-Laws, students may petition for transfer of graduate credit from another accredited institution toward completion of degree requirements in the Behavioral and Systems Neuroscience Graduate Program. Only credit from formal didactic courses (not research or independent study) completed within the last 7 years in which the student earned a grade of B or better are considered. Students must submit their petition (including official transcripts) within the 1st year after matriculation and the total number of transfer hours cannot exceed 45. In general, transfer credits are applied toward elective requirements. All petitions for transfer of graduate credit must be submitted to the Graduate Program Director who will present the petition for approval at the next scheduled faculty meeting. Approved petitions will then be forwarded for final consideration by the Graduate Council. Requests for transfer of specific didactic course requirements must be approved by the Director of the equivalent OHSU course and by the Graduate Program Director.

Academic Progress

The School of Medicine requires that graduate students maintain an overall 3.0 grade point average in coursework (A=4; B=3; C=2; D=1). Courses graded on a Pass/No Pass (P/NP) basis do not contribute to a calculation of the grade point average. However, an NP in non-graded courses places a student on academic probation. A student can only be on academic probation for one term. Failure to alleviate academic probation within the next term results in the student's dismissal from the program, at the discretion of Graduate Program Director. Students should review the Graduate Council By-Laws for more information regarding GPA and academic probation.

Training in the Responsible Conduct of Research

The National Institutes of Health require continued ethics training for all trainees, fellows, participants, and scholars receiving support through any NIH training, career development, research education, and dissertation research grant (NOT-OD-10-019). To meet this requirement, all graduate students are required to:

- Complete MGRD 650: The Practice and Ethics in Science during their first year
- BSN offers a 1 credit Ethics course every three years. After the first year, all students are required to take this course when it is offered.

Annual Student Evaluation

By the end of the Spring term of each year, all students must submit the Graduate Student Annual Progress Report summarizing their activities during the past year and their plans for future study, as well as an up-to-date degree audit and, if applicable, the latest DAC meeting summary. This report serves as the focal document for the annual student evaluation by the BSN Program Director. The Program Director can solicit additional documents (for example, the student's NIH Biosketch and/or input from the mentor) to help evaluate the student's progress. The student must also submit the signed form to the SOM Graduate Studies Office via the Graduate Student Annual Progress Report Intake Form. Failure to timely provide the progress report, degree audit, and DAC meeting summary results in a student not being in good standing and may result in probation as they are not compliant with professional requirements as described in OHSU Academic Regulations for the School of Medicine Graduate Programs. After reviewing the submitted documents, the Program Director will schedule individual meetings with students.

Terminal Master's Degree

Students completing the Ph.D. degree in BSN are not required to complete an M.S. thesis. However, students admitted to the Ph.D. program may be allowed to complete requirements for the M.S. degree if they wish to withdraw from the Ph.D. program before completing all requirements for the Ph.D. degree. Students must satisfactorily complete the required coursework in the Ph.D. program to become eligible for the M.S. degree. The request to transfer to a terminal Master's Degree requires approval by BEHN faculty and support by the mentor. The M.S. research project must be approved by a Thesis Advisory Committee (TAC) composed of at least three members of the graduate faculty (including the mentor). At least two members of the Committee must have appointments in BEHN. Students may request permission to replace one of the committee members by a recognized scholar who is not a member of graduate faculty; see Graduate Council By-Laws. Composition of the TAC must be approved by the Graduate Program Director, Department Chair and Associate Dean for Graduate Studies. Typically, the Master's project will consist of one or more experiments that can be completed in approximately one year. The thesis document must be prepared according to the Guidelines for Completion of Degree - Master's with Thesis.

The primary responsibility of the TAC is to assist the student in identifying a research project whose scope meets or exceeds Graduate Council standards at the M.S. level. A majority of the TAC members must also approve the thesis document before it is submitted for the OE. Students are strongly encouraged to solicit comments on draft versions of the thesis, but members of the committee must not engage in extensive editing or rewriting of the document. Final approval of the project and document is contingent on the recommendations of the OEC. With the advice of the student and mentor, the Graduate Program Director will recommend at least three members of the graduate faculty (including the mentor) who do not all have primary appointments in the same department or institute for inclusion on the OEC. Moreover, the OEC must include at least one member who was not a member of the student's TAC. Students may request permission to replace one of the OEC members by a recognized scholar who is not a member of the graduate faculty; see Graduate Council By-Laws. Final approval of the OEC is given by the Associate Dean for Graduate Studies once the student submits a Request for Oral Examination Form.

Visit the School of Medicine Graduate Studies Forms and Policies page for Guidelines for Completion of Degree - Master's with Thesis.

Students must present a public seminar describing the M.S. research project, pass the OE, edit the thesis document to the satisfaction of the OEC, and meet all other degree requirements specified by the Graduate Council By-Laws. The OE typically addresses issues related to the thesis project, but is not limited to the content of the thesis document.

Questions related to other aspects of the student's graduate education should be anticipated. The public seminar is an important component of the OE and the candidate's performance is evaluated by the OEC in the context of determining the general preparedness of the candidate to receive the degree.

A student who fails the OE may petition the department for the opportunity to be reexamined. Such petitions must be submitted in the form of a letter to the Department Chair within 2 weeks after the exam. The petition letter should include an explanation of any circumstances that may have adversely affected the student's performance on the exam. Moreover, the letter should provide a rationale for expecting a different outcome upon reexamination. The student's request is formally considered at a meeting of the department's graduate faculty within one month of the receipt of the petition letter. The student receives written notice of the department's decision within three days after the meeting. In case of reexamination, the BEHN Department Chair may recommend changes in the composition of the OEC. In accordance with the Graduate Council By-Laws, a student whose petition for reexamination is denied by the department may appeal to the Graduate Council.

Ethical and Professional Behavior

Graduate students are expected to maintain high ethical standards. Graduate students should demonstrate honesty in all aspects of research activities. All graduate students are required to take courses concerning ethics and science. Student should continue to learn about and avoid sources of error in scientific research. It is essential that student do not misrepresent scientific findings or misappropriate credit. Students should demonstrate cooperation, responsibility and respect in interactions with other students, faculty and staff. Students should be considerate of the cultural and individual diversity of all individuals.

Students who are involved in unethical or unprofessional conduct such as cheating, misrepresentation of research findings, plagiarism (failure to credit the original author) and/or disruption of the learning process are subject to disciplinary action up to and including dismissal from the program.

Students observing unethical behavior by students, faculty, and/or others on campus or in a virtual setting are obligated to report these transgressions. Visit the Affirmative Action and Equal Opportunity page for further guidance.

See the OHSU Code of Conduct for further information.

Graduate Student Stipends

"*The stipends provided to students offset the cost-of-living during the period of training and are not considered equivalent to salaries or other forms of compensation provided to individuals supported on research grants*." NIH

All full-time, active BSN Ph.D. graduate students can expect to receive a stipend in accordance with the School of Medicine Graduate Student Stipend Policy.

Please refer to the School of Medicine Graduate Student Stipend Policy for more information.

Travel to Scientific Conferences

The Department of Behavioral Neuroscience and the BSN Graduate Program encourage graduate students to present their work at national conferences. The full travel policy is described in **Appendix 2**.

Written Request Requirement

First year students are required to submit a written request for travel funds to the Graduate Program Coordinator at least one month in advance of the proposed travel. The request should include a brief description of the purpose of the trip and estimated costs for transportation, hotel, meals, lodging, registration fees and other related costs. Late requests are not considered. Cost sharing information (e.g. resources to be provided by your mentor) should be included in the request, if available. All direct payments and reimbursement follow OHSU Central Financial Services policies and procedures.

International Travel

All OHSU graduate students are required to submit an International Away Elective Form & Student International Travel Waiver of Liability form before they travel outside the U.S. on OHSU-related business.

Teaching and Educational Outreach Activities (BEHN)

The program does not require students to participate in teaching to meet degree requirements. However, the faculty recognizes that teaching may be an important part of a student's future career goals, and they support participation in activities that strengthen teaching-related skills. For example, the required departmental seminar course (BEST 607) is designed, in part, to help students develop and refine their oral presentation skills. In addition, there are many educational outreach opportunities that involve interacting with grade school students and other members of society.

Given the program's emphasis on coursework and research training during the first few years, the department does not permit students to serve as course instructors during that time. Accordingly, prior to advancing to Ph.D. candidacy, students interested in teaching should, in consultation with their faculty mentors, limit such activities to occasional guest lectures, classroom or laboratory demonstrations, including potentially serving as TAs for the BEST 640 course. Upon advancing to candidacy, students interested in obtaining more formal or extensive teaching experience may wish to seek such opportunities at one or more of the local colleges and universities. The Graduate Program Director and other program faculty can provide information and assistance in identifying such opportunities, including opportunities to participate in BEST 650 (teaching practicum) which provides a more directed teaching experience. Students should consult with their mentor and the Program Director if they are offered opportunities outside of OHSU (e.g., Cold Spring Harbor; Marine Biology Laboratory; Keystone Symposia; local colleges). The teaching practicum at Portland State satisfies elective requirements, but serving as a teaching assistant does not.

Students must consult with their faculty mentors before making any commitment to outside teaching or outreach activities. Agreement of the faculty mentor is documented by filling out the SOM Graduate Studies Teaching Activity Approval Form which is kept in the student's academic file. Decisions to participate in such activities must always be tempered by the need to meet formal program requirements in a timely manner, to achieve excellence in research (e.g., publications), and to complete the Ph.D. dissertation.

Time Constraints

The time period from matriculation to granting the Ph.D. degree is limited to 28 consecutive terms (seven academic years) unless waived due to a leave of absence or family leave.

For more information, please consult the Graduate Council By-Laws.

Sick Leave, Vacation and Leave of Absence

Please consult the Vacation & Sick Leave Policy for Graduate Students Receiving a Stipend as well as the Academic Adjustment Policy for New Parents located on the Office of Graduate Studies Forms and Policies page.

Accommodation

Our program is committed to all students achieving their utmost potential. If you have a disability or think you may have a disability (physical, learning, hearing, vision, psychological) which may necessitate a reasonable accommodation, please call Affirmative Action and Equal Opportunity (AAEO)at (503) 494-0082 to discuss your needs. Because accommodations can take time to implement, it is important to have this discussion as soon as possible. All information regarding a student's disability is kept confidential in accordance with relevant state and federal laws.

Please visit the Affirmative Action and Equal Opportunity (AAEO) page for more information.

Dismissal

Students may be suspended or dismissed from the graduate program only by the Dean of the School of Medicine. See Article X, Section B of the Graduate Council By-Laws for more information.

Grievances

Students have the right to grieve matters related but not restricted to the following areas: rights of authorship on scientific publication, student-mentor relationships, laboratory safety concerns, and grading policies. Students may not grieve disciplinary action, grades (including failure of the QE or failure of the OE), dismissal or other action taken under the Professional Conduct Policy. See Article XI of the Graduate Council By-Laws for more information.

Exceptions

Individual student requests for waiver of a requirement specified by the departmental guidelines must be approved by the faculty, Graduate Program Director, and the Department Chair. In the case of requirements specified in the Graduate Council By-Laws, it may also be necessary to obtain approval from the Graduate Council and Associate Dean for Graduate Studies.

Appendix 1. Detailed course descriptions

BEST 607 General Information

The seminar course (1 credit/term; 1 hour/week) is offered in the Winter and Spring terms each year. The format is that of a journal club focusing on a particular research topic, but not a content-oriented mini-course. The course should not be organized so that each class builds on the information provided in the previous classes. The primary purpose of the seminar is to: (a) give students experience making oral presentations, (b) teach students to think critically about research, and (c) expose students to contemporary issues in behavioral neuroscience.

The course director(s) identifies one or more topics or themes to be used in guiding paper selection. Themes should be clearly relevant to behavioral neuroscience. One paper is presented each week. The specific criteria for paper selection will be determined by the course director(s). The presenting student can propose a specific paper but it must be approved by the course director.

BEST 607 Attendance Requirement

All BSN graduate students in their 1st, 2nd, and 3rd years are required to register for credit and participate fully by attending and submitting a critique of the week's paper prior to its presentation (see below).

One excused absence is permitted per term. As a courtesy, inform the Course Director in advance by email. It is expected that an absent student will still submit a critique of the assigned paper. Additional absences may affect the student's grade and should be approved in advance by the Course Director and Graduate Program Director.

BEST 607 Organization and Structure

One to two faculty members are assigned as Course Director(s) during each term. A senior graduate student or a postdoctoral fellow may provide assistance with organization and discussion. The Course Director remains responsible for assigning grades.

The Course Director is expected to attend all classes. In the event that the Course Director is unable to attend a class on a given date, they should find another faculty member to facilitate and oversee discussion.

BEST 607 Presentations

One student presents the seminar paper each week. The Graduate Program Coordinator maintains a list of student presentation dates and will share with future Course Directors to ensure fair distribution of presentation assignments.

Presentations should not contain an excessive amount of background information requiring weeks of preparation. Instead, the presentations should focus on material contained in the assigned paper. In addition to presenting the assigned paper, the presenter leads the discussion based on the critiques received. The student presenters will send their paper to faculty with relevant experience and encourage them to attend the presentation. Additionally, students will strongly encourage their mentor(s) to attend their presentation. Course Directors should set and enforce time limits on the presentation to ensure sufficient opportunity for group discussion.

BEST 607 Critiques

All students, except for the presenter, provide materials requested by the course director. This will vary depending on the course. In some instances, questions for discussion are requested. In other cases, a critique is requested that typically contains elements of the following:

- Brief summary of the findings
- Is there a clearly stated hypothesis?
- Were the correct statistical analyses employed?
- Which steps to ensure robust and replicable results were used?
- Were the results sufficiently and clearly described?

- Do the results validate the conclusions?
- What were the strengths and weaknesses of the paper?
- Does the rationale for the reported experiments provide adequate justification for the study?
- Are there clear or possible ethical issues with the study to consider?

The entire critique should be approximately ½ page long and limited to the most important issues. Do not discuss possible interesting experiments the authors could have carried out unless they would be required to make the paper acceptable to you.

Critiques are posted in the Forum tool in the Sakai course management system. Students post their critiques by 12 noon the Monday before seminar. The critiques will be published and available later that day.

Note to faculty: The Forum tool in Sakai has a moderation feature, which is helpful to manage distribution of student critiques. When moderation is on, forum posts are not immediately available to registered students on the Sakai site. They are held for review by either the Teaching Assistant or Course Director. Once the post is reviewed and approved, it is visible to other members of the site – specifically registered students. The generally accepted practice is to have students submit their critiques by the Monday at 12:00 pm deadline, then either the Course Director or Teaching Assistant approves all the posts after all critiques have been submitted. Please contact the Graduate Program Coordinator for more information.

BEST 607 Grading

The individual course syllabus should contain a paragraph explaining how grades will be assigned. Grading should be based on the thoroughness of the presentation (if applicable), the weekly critique of the paper, and the participation during discussion.

BEST 607 Evaluations

Presentation evaluation surveys are sent to students, postdocs, and faculty the day of the presentation. Results are collected and distributed to the student presenter the following Monday.

BEST 607 Student Expectations

- Show up on time.
- Engage in the presentation.
- Participate in the discussion.
- With the exception of technology required for the presentation, do not use electronic devices during class time. In extreme circumstances, such as family emergencies, explain the need for the potential use of an electronic device prior to class to the course director.
- Present on a regular basis.
- Encourage mentor and faculty with relevant expertise to attend.
- Submit paper critique by the Monday at 12:00 pm deadline.
- Communicate with Course Director regarding deadline extension requests, absences, and other course-related issues.

BEST 607 Course Director Expectations

- Select theme/topic.
- Select paper in consultation with each student to be presented in each class.
- Create syllabus, presentation schedule, and grading rubric.
- Provide feedback to presenters.
- Provide assistance for discussion moderation.
- Assign grades.

Appendix 2. Department of Behavioral Neuroscience Travel Policy

(Updated March 2023)

The following information is intended to help make the travel and reimbursement processes as smooth as possible for members of the Department. Please send any questions to Osvaldo Hernandez (hernanos@ohsu.edu).

General Reimbursement Policy Notes

- Funds for travel generally come from mentor grants, training grants, or other available non-department funds. The department does not have discretionary funds available for travel with the exception of first-year students as noted below in the **Behavioral and Systems Neuroscience (BSN) Graduate Student** section.
- Generally, travel expenses are not reimbursable until AFTER the travel is complete. It is best to contact the administrative team to assist with processing payment for travel expenses as much as possible to avoid the traveler having to wait long periods for reimbursement.
- Travel funded by grant projects may have certain restrictions placed on it by the funding agency or OHSU. It is best to clear travel expenses through the administrative team first, to ensure restrictions are met, in order to avoid reimbursement requests being declined.
- Reimbursements must be submitted to Accounts Payable within 60 days of the last day of travel, so it is best to submit reimbursement requests to the administrative team immediately after travel is complete to avoid reimbursement requests being declined.
- International Travel requires extra planning, including completing OHSU's travel screening tool and registration process. Read through the International Travel page on O2 to ensure you've completed all the necessary steps.

Pre-Travel Expenses

Pre-travel expenses are those that must be paid or reserved prior to the actual travel:

- Conference/Meeting Registrations
- Abstract Fees
- Poster Printing Costs
- Airline Tickets
- Lodging

Generally, it is best to have the administrative team assist with payment for these pre-travel expenses. Travelers should research and forward information required for making payment on pre-travel expenses to Osvaldo Hernandez (hernanos@ohsu.edu). Travelers should include the OHSU account information each expense should be charged to. If travel is paid by a grant account, a short justification for how travel benefits the aims of the grant project is also required.

In-Travel Expenses

In-travel expenses are those incurred during travel, and which cannot be paid ahead of time:

- Ground Transportation
- Airline baggage fees
- Meals
- Parking

Generally, these expenses will need to be paid for by the traveler. Travelers should save receipts and submit them to Osvaldo Hernandez (hernanos@ohsu.edu) after returning from travel, along with a Travel Information Form (attached). Josh will prepare a reimbursement request in iExpense for the traveler to review and approve. Once approved, reimbursements will be added to the traveler's paycheck for the active pay period.

Additional Expense Notes

- Airline Tickets
  - Airline tickets must be Coach or Economy class, and any upgrades are generally prohibited.
  - In the case of travel funded by grants, the granting institution may also impose additional restrictions. Federal grants, for example, require the traveler to select a domestic US airline for travel when at all possible, even on international flights. This is another reason why it is best to work with the administrative team to purchase airline tickets.
  - Additional information around airline travel restrictions is available on both the OPAM and Central Financial Services O2 pages.
- Meals
  - Reimbursement for the cost of meals during travel can be requested in two ways:
    - As an exact reimbursement: save receipts and get reimbursed that exact amount. This method requires itemized receipts that show the food items ordered and their corresponding costs.
    - As a per diem reimbursement: don't save receipts and get paid back a set amount based on which meals you were responsible for (those the conference or travel host didn't provide). The amount paid back (the per diem rate) is different depending on the travel location and changes over time as costs increase. US cities typically have a per diem rate between $60 and $80 per day, and are broken out down on a per meal basis. Travelers can indicate which meals they would like to request a per diem reimbursement for on page 2 of the Travel Information Form (attached).

BSN Graduate Students

- The Department of Behavioral Neuroscience and the BSN Graduate Program encourage graduate students to present their work at national conferences. The following policies apply to science-related travel.
- First year students:
  - First year graduate students are eligible for travel reimbursement up to $1,000 either through training grant appointments or the department. The allowance is available the day the student matriculates and expires on June 30th of the following year. That is, during their first year in the program. If a training grant appointment is received during this period, reimbursement shall be from the training grant travel allowance.
  - After June 30th, the allowance expires even if not used.
- Second year and later students:
  - $1,000 will be made available to all BSN graduate students. The primary sources of funding are mentor research grants and training grants. Students should discuss travel plans with their mentor and identify the appropriate funding source prior to making any travel arrangements. Allowances renew according to funding award dates or by matriculation anniversary date.
  - In exceptional circumstances, funding may be requested from Department of Behavioral Neuroscience funds.