This document contains the administrative and academic regulations that are specific for the Department of Neuroscience. This Neuroscience Handbook supplements, but is subordinate to, the Baylor College of Medicine Graduate School Policy Handbook.

This Handbook is not a contract of employment, nor does it alter the nature and status of your relationship with Baylor College of Medicine. This manual sets forth the policies and procedures of the Department of Neuroscience. Neuroscience students, as a condition of their appointment, are required to adhere to, abide by, and follow these policies as they now exist or may hereafter be changed at the sole discretion of the Department of Neuroscience.
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1 Administration of the Neuroscience Graduate Program

1.1 Chair, Department of Neuroscience – Dora Angelaki, Ph.D.

1.2 Director of Graduate Studies – Paul J. Pfaffinger, Ph.D.

The Director of Graduate Studies (DGS) in Neuroscience is responsible for monitoring all aspects of the Graduate Program. The Director position is one of mediator as well as advisor; he presents requests from students to the applicable committees and works with the students to establish goals. The Graduate School office works in close contact with the DGS and the Program Administrator of the Graduate Program in the transmission of forms, grades, and recommendations from various committees as they relate to the student.

1.3 Graduate Program Steering Committee (GPSC) – Paul J. Pfaffinger, Chair

This committee is responsible for the overall operation of the Graduate Program in the Department of Neuroscience. The GPSC has oversight over recruiting and admitting of new students, advising and promoting current students, and determining matters of curriculum and policy.

1.4 Graduate Program Administrator – Wanda Waguespack

The Program Administrator (PA) of the Neuroscience Graduate Program is located in the Department of Neuroscience on the 6th floor of the Smith Research Building. The PA maintains all files relevant to the Graduate Program. Questions regarding pay, mail, registration, and personal files may be directed to her. Students needing to obtain Graduate School forms and/or having questions about the forms also may contact the PA of the Program.
2 Course Requirements

2.1 Program of Courses

The DGS advises and the GPSC approves the curriculum of students who do not have a Major Advisor. First year students will also meet with the GPSC each term to address issues particularly important for first year students. After a student has chosen a Major Advisor, the DGS and the Major Advisor give approval for courses, but the GPSC remains available to meet with any students if the need arises.

2.2 Curriculum

The Graduate Program leading to the Ph.D. in Neuroscience is designed as a five-year program. It is anticipated that the student entering with a majority of the background course work could complete all formal course work in two years or less. The graduate curriculum in Neuroscience is flexible to meet the wide-ranging interests of those wishing to pursue such a field of study while at the same time providing a strong foundation in a number of core areas.

The required courses for the Ph.D. in Neuroscience are:

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Credits</th>
<th>Course Director</th>
</tr>
</thead>
<tbody>
<tr>
<td>REQUIRED in YEAR 1:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Term 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GS-GS-501</td>
<td>Organization of the Cell</td>
<td>2 (D)</td>
<td>S Pedersen / R Sifers</td>
</tr>
<tr>
<td>GS-NE-448</td>
<td>Electrical Signaling in the Brain</td>
<td>3 (D)</td>
<td>Paul Pfaffinger</td>
</tr>
<tr>
<td>GS-NE-453</td>
<td>Introduction to Computation for Neuroscience</td>
<td>1</td>
<td>Paul Pfaffinger</td>
</tr>
<tr>
<td>GS-NE-449</td>
<td>Neuroscience Lab I</td>
<td>1</td>
<td>Paul Pfaffinger</td>
</tr>
<tr>
<td>GS-GS-514</td>
<td>Ethics – Year 1</td>
<td>0.5</td>
<td>Gayle Slaughter</td>
</tr>
<tr>
<td>Term 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GS-NE-451</td>
<td>Brain Cell Biology &amp; Development</td>
<td>2 (D)</td>
<td>Matt Rasband</td>
</tr>
<tr>
<td>GS-NE-431</td>
<td>Analyses of Neuronal Functions</td>
<td>3 (D)</td>
<td>Mauro Costa-Mattioli</td>
</tr>
<tr>
<td>GS-NE-450</td>
<td>Neuroscience Lab II</td>
<td>1</td>
<td>Paul Pfaffinger</td>
</tr>
<tr>
<td>TBD</td>
<td>Journal Club</td>
<td>0.5</td>
<td>Russell Ray</td>
</tr>
<tr>
<td>Term 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GS-NE-455</td>
<td>Neural Systems I</td>
<td>3 (D)</td>
<td>David Dickman</td>
</tr>
<tr>
<td>GS-NE-441</td>
<td>Genetics for Neuroscience</td>
<td>3 (D)</td>
<td>Ben Deneen</td>
</tr>
<tr>
<td>TBD</td>
<td>Journal Club</td>
<td>0.5</td>
<td>Russell Ray</td>
</tr>
<tr>
<td>Term 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GS-NE-456</td>
<td>Neural Systems II</td>
<td>3 (D)</td>
<td>David Dickman</td>
</tr>
<tr>
<td>GS-NE-422</td>
<td>Neurobiology of Disease</td>
<td>2 (D)</td>
<td>Jeff Noebels</td>
</tr>
<tr>
<td>GS-NE-471</td>
<td>Anatomy of the Nervous System</td>
<td>2 (D)</td>
<td>Paul Pfaffinger</td>
</tr>
<tr>
<td>TBD</td>
<td>Journal Club</td>
<td>0.5</td>
<td>Russell Ray</td>
</tr>
</tbody>
</table>

REQUIRED in YEAR 2:
Term 4

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Instructor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GS-NE-447</td>
<td>Preparing for your Neuroscience Qualifying Exam</td>
<td>2</td>
<td>Joanna Jankowsky / Kim Tolias</td>
</tr>
<tr>
<td>GS-GS-521</td>
<td>Introduction to Biostatistics</td>
<td>2 (D)</td>
<td>Charles Minard</td>
</tr>
</tbody>
</table>

* A different quantitative course may be substituted upon Director’s approval.

Neuroscience students are required to take all of the required courses with a grade of B or better and an additional 6 hours of didactic elective credits, totaling 31 didactic hours. Additional quantitative electives are highly recommended.

MD/PhD students in the Neuroscience Program may transfer credit hours from Medical School to fulfill the following Neuroscience requirements:

- Organization of the Cell (2 credits, didactic)
- Neurobiology of Disease (If this course was taken as an elective in Medical School) (2 credits, didactic)
- Anatomy of the Nervous System (2 credits, didactic)
- Electives

**Current Quantitative Neuroscience Electives:**

- GS-NE-464 Cellular Neurophysiology
- GS-NE-426 Theoretical Neuroscience: Cells, Circuits and Systems
- GS-NE-446 Theoretical Neuroscience: Networks and Learning

The electives may be chosen from the following list of Neuroscience courses or from other appropriate courses at Baylor, Rice University or University of Texas Health Sciences. The PA and/or DGS can give students information to help them choose elective courses.

**ELECTIVES:**

<table>
<thead>
<tr>
<th>Term</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Instructor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term 1 &amp; 2</td>
<td>GS-NE-400</td>
<td>Fundamentals of Human Neuroimaging</td>
<td>6 (D)</td>
<td>David Ress</td>
</tr>
<tr>
<td>Term 1 &amp; 2</td>
<td>GS-NE-426</td>
<td>Theoretical Neuroscience: Cells, Circuits and Systems (taught at Rice)</td>
<td>3 (D)</td>
<td>Fabrizio Gabbiani</td>
</tr>
<tr>
<td>Term 3 &amp; 4</td>
<td>GS-NE-446</td>
<td>Theoretical Neuroscience: Networks and Learning (taught at Rice)</td>
<td>4 (D)</td>
<td>Xaq Pitkow</td>
</tr>
<tr>
<td>Term 4</td>
<td>GS-NE-439</td>
<td>Advanced Functional MRI</td>
<td>4 (D)</td>
<td>Michael Beauchamp</td>
</tr>
<tr>
<td>Term 4</td>
<td>GS-NE-464</td>
<td>Cellular Neurophysiology (taught odd years)</td>
<td>3 (D)</td>
<td>Sam Wu</td>
</tr>
<tr>
<td>Term 4</td>
<td>GS-NE-462J</td>
<td>Concepts of Learning and Memory</td>
<td>3 (D)</td>
<td>Mauro Costa-Mattioli / Daoyun Ji</td>
</tr>
<tr>
<td>Term 4</td>
<td>GS-NE-434</td>
<td>Physiology of the Visual System</td>
<td>3 (D)</td>
<td>Sam Wu</td>
</tr>
</tbody>
</table>

### 2.3 First Year Oral Comprehensive Exam - Course Material

An oral comprehensive exam is administered during the fifth term of a student's first year in the program. The scope of this oral examination is limited by the required course work experience of Neuroscience graduate students. The examination requires problem solving and comprehensive essay type responses. The examination is administered by a pool of standing committee members comprised of faculty who teach Neuroscience courses in the students' first year. Therefore, not all students will have the same examination committee.
Decisions regarding pass/fail of the exam are made by the faculty members giving the exam and are based on an evaluation of the student’s performance on the individual questions as well as on the overall exam. If a student fails the exam, the examiners will either recommend dismissal from the Program or a re-examination. If a re-examination is offered, the nature of the exam, the grading of the exam and the decision regarding pass/fail are at the sole discretion of the examiners.

2.4 Credit Hours

A minimum of **31 credit hours** of didactic course work (25 hours of core requirements and 6 elective hours) requiring a final exam must be completed prior to admission to candidacy.

31 term hours of this requirement must be from courses which either:

1) have a letter grade assignment (“letter graded” courses) and be graded A-F by objective criteria, or

2) are designated by the Curriculum Committee as “approved pass/fail” graded courses (excluding seminars and journal clubs).

2.5 Seminars

The Department of Neuroscience sponsors a variety of seminars and meetings. All graduate students are **expected** to attend the Neuroscience seminars and the Rush Record Forum. In addition, all students are **expected** to attend at least one of the journal clubs offered by members of the Department.
3 Progress Toward the Degree

3.1 Appoint Major Advisor

The primary responsibility for choosing a mentor resides with the Graduate Student. The Graduate Program Director must approve the mentor selection, but otherwise the Department’s primary role is to identify for students a list of potential mentors from which they can choose. If a student needs to replace a mentor, for any reason, the Department will assist the student in identifying a new mentor, but again the primary responsibility resides with the Graduate Student. Failure to identify a mentor is grounds for dismissal from the program.

On or before July 1, all first year graduate students must submit in writing to the DGS their choice of a Major Advisor. The DGS will then submit the proposed Major Advisor to the GPSC for final approval and appointment.

3.2 Appoint Thesis Advisory Committee

The Thesis Advisory Committee (TAC) for each student consists of the student's Major Advisor, three additional members of the Department of Neuroscience faculty and one faculty member from other departments at BCM or from neighboring institutions (e.g., Rice University, UTH-HSC). As per Section 5.3.2, a “Reporting Member” must be included on the TAC.

The Thesis Advisory Committee is selected by the student and must be approved by the GPSC. The student's advisory committee must be appointed by the end of the third term. The student's Thesis Advisory Committee is appointed by the Dean of the Graduate School upon written request from the Department of Neuroscience. Forms for this request are available online on the Graduate School’s website.

The student must select a Thesis Advisory Committee prior to taking the oral qualifying exam (see Section 4) and must meet with this committee at least twice per year.
4 The Qualifying Examination

4.1 Purpose

The purpose of the qualifying examination is to determine the student's eligibility for admission to candidacy for the Ph.D. degree.

Eligibility is determined by examination of the student’s basic knowledge of Neuroscience and the capacity for originality and scientific approach to research. Both of these criteria are tested by oral examinations.

4.2 Qualifying Examination - Proposal Defense

General -- The oral qualifying exam is an oral defense of a written research proposal. The research proposal may cover any area of neuroscience research, and typically (but not necessarily) represents a project being conducted or contemplated by the student for their thesis project. If there is any question as to the suitability of a topic, the student should consult with their thesis advisor and prospective members of the examination committee. Topics should be chosen from among current, well-studied neurobiological systems. It is good strategy to choose a relatively focused research topic that is somewhat limited in scope, because these are usually easier to defend. Do not, however, choose a topic about which there is very little general knowledge. Choice of appropriate topics will be the responsibility of the student. Failure to choose an appropriate topic will likely result in a requirement of re-writing the proposal.

Students may ask anyone for advice on the selection of topics for the proposal. The student, however, should inform any faculty members that the advice being sought concerns an oral exam proposal to avoid potential inappropriate communication. Under no circumstances should a faculty member be asked to design an experiment that is similar to one being planned for the proposal. Faculty members are allowed to read or otherwise critique a proposal or hear a practice talk provided it is clear to all parties that the advice being solicited is in the context of preparation for an oral exam. Faculty members should limit their advice to general recommendations concerning the scope of the proposal and suggestions concerning experimental techniques relevant to the proposed studies. The proposal should thus be the work of the student with only advisory input from other students, faculty, or the thesis advisor. Under no circumstances should any part of the proposal be copied from other published or unpublished material without giving proper acknowledgment.

The written proposal should be about 6 pages plus 1 page Specific Aims, excluding references. Figures can be included in the body of the proposal or at the end. Diagrams and figures are strongly encouraged. The qualifying exam is modeled after the NIH NRSA, http://grants.nih.gov/grants/funding/416/phs416.htm, with the expectation that it be submitted, if possible, in the coming year.

The proposal should contain the following sections:

- **Specific Aims**: What you intend to do. List three to four long-term objectives and describe concisely and realistically what the specific research described in this proposal is intended to accomplish and the hypotheses to be tested. One page is recommended.
• **Background and Significance:** This section should briefly describe in your own words the literature relevant to the proposal. Include a critical evaluation of the current state of knowledge in the field and of the literature cited in the text. This section should also describe why this work is important by relating the specific aims to previous research. Also, you should describe the gaps in the current knowledge that the proposed research will address and the relevance of this knowledge to the overall problem in the field. Two to three pages are recommended.

• **Preliminary Data:** Describe any unpublished preliminary data of your own or others that are relevant to this proposal.

• **Research Design and Methods:** List each specific aim and describe in logical detail the experiments and procedures to be used to test your hypotheses. Include the means by which the data will be collected, analyzed, and interpreted. Discuss potential difficulties and limitations of the proposed experiments and alternative approaches to achieve the aims. This section should also contain a description of the possible outcomes of the proposed research.

• **Reference List:** You should read and be prepared to answer questions about all papers listed in your references.

### 4.3 Specific Rules for the Qualifying Exam

Students are required to take the Qualifying Exam before June 30 of the second year, as per Graduate School policy. Since the topic of the qualifying exam for neuroscience students is typically based on the student’s thesis topic, the exam should also serve as the Year 2-Spring Status Report Committee meeting for the June 30th deadline. The student will bring two different forms to the exam/committee meeting:

- Neuroscience Form: Qualifying Exam Guidelines and Rules
- Qualifying Exam Results form and QE Written Evaluation Rubric
- Year 2-Spring Status Report form
- Neuroscience Form: Reporting Member Checklist Overview

For additional information, refer to the GS Policy Handbook, Section 9.8.

The Qualifying Exam is conducted by an Examining Committee comprised of the student's thesis advisor and the thesis advisory committee. The Reporting member will serve as the chair of the exam. It is the student's responsibility to schedule the oral exam at a time convenient for all members of the thesis advisory committee. **All members must be present.**

At least two (2) weeks before the exam, students are responsible for submitting the “Qualifying Examination Date” form (which you may obtain from the Graduate School website) to the Graduate School for approval. In addition, two weeks prior to the oral examination, a copy of the written research proposal must be presented to each member of the Examining Committee. One week before the exam, the student is required to submit the Qualifying Exam Guidelines and Rules form to the program administrator.
Prior to the start of the exam, the chair of the examining committee will ask the student to leave the room. During this time the committee members will discuss the written proposal and decide if an exam should be conducted. If the exam is to proceed, the student will be asked to reenter the room and give a 25-30 minute summary of the proposal describing background, significance, preliminary data, and experimental design using a combination of slides and white board. Clarifying questions may be asked during the course of this summary presentation. Following the oral presentation of the proposal, the floor is open to the committee to ask any questions about the proposal.

The student should be an expert in the area of the proposal and should also be prepared to answer questions on general scientific knowledge. Good preparation for the exam includes reading relevant literature in the field, paying particular attention to the details of the experiments to be performed and the reasons why these experiments are being proposed, and reviewing all courses taken during the first two years of graduate school. In particular, the student should be prepared to answer questions dealing with the following:

- Details of the experimental techniques to be used for the proposed research. If techniques are cited in the proposal, the student should be able to explain them in detail and to draw and diagram the expected results.
- The biological significance of the project.
- The existing body of knowledge, including work done in different experimental systems relevant to the project. Relevant details of any literature should be cited in the proposal.
- Difficulties and limitations of the proposed procedures.
- Alternative approaches to achieve the specific aims.
- Possible outcomes of the proposed experiments and the next steps to be taken in each case.
- Specific details of the biological or theoretical process being studied.
- Future directions of the proposed research beyond the specific aims.
- Other topics related to the proposal, especially those covered in the student's course work.
- General knowledge of Neuroscience.

The thesis advisor observes the exam and can ask questions. If a committee member is committing a factual error, the advisor can speak to the chair to correct matters. If an advisor appears to be participating inappropriately, for example by answering questions directed to the student, the committee chairperson has the right to ask him/her to leave the examination. The advisor and student must both leave the room during the evaluation of the student's performance by the committee.

After the oral examination has ended, the committee will discuss the performance of the student. They will evaluate the quality of the written proposal, the oral presentation, the experimental design of the proposal, the familiarity of the student with the general research area he/she chose to investigate, the familiarity of the student with the specifics of the research project (such as detailed knowledge of the experimental techniques employed), the ability of the student to understand the larger biological significance of the project he/she has chosen, the general knowledge of the student, and the ability of the student to think on his/her feet and answer questions. These evaluations will be weighed together and the committee members will be asked to put forth a recommendation.
The possible outcomes of the exam are discussed below and are usually decided by majority vote of the committee. The possible outcomes are:

1. **Pass**

2. **Incomplete:** If a conditional pass is chosen, a discussion will determine the conditions. A conditional pass should not be given if the student is expected to take another oral exam, even if it is to be more limited in scope than the original exam. A conditional pass can take many forms. Primarily, it requires additional work by the student to address particular deficiencies. These additional requirements may include:
   - Rewriting the entire proposal addressing the deficiencies that emerged during the examination.
   - Rewriting a portion of the proposal.
   - Writing a second proposal on a subset of the original aims.
   - Writing a paper in the area thought to be deficient in the student's background.
   - Taking and passing a course(s) in the area(s) of weakness.
   - Doing a reading with members of the committee or others in the areas of weakness.
   - Other conditions may be imposed as deemed appropriate by the committee.

3. **Failure:** Any request by the committee for a retake of the oral exam is considered a failure. Upon failure, the committee may recommend re-examination or immediate dismissal. Re-examination may entail preparing a new proposal and repeating the entire process, a re-defense of essentially the same proposal, or a re-examination that is more limited in scope than the first exam. The timetable for such re-examination can be flexible and should be determined by the committee in consultation with the student and advisor, but should normally be taken within one full term of the original examination date. In the event of a second failure, the student will be recommended for dismissal by the program. The student may appeal the dismissal.

A “Qualifying Examination Results and QE Written Evaluation Rubric form” form as well as a Year 2 Spring Status Report form must be completed and signed by the members of the committee. The student should bring the forms to the examination and obtain the signatures at that time.
5 Graduate Student Training Policy

5.1 Mission Statement

Our Mission is to establish Baylor College of Medicine as one of the truly outstanding Neuroscience Research and Educational Centers in the World by taking a leadership position in the understanding of brain function and disease required to produce significant breakthroughs in human mental health. Specifically we will create a scientific environment that allows us to recruit and retain the most outstanding neuroscience researchers in the world. To truly reach our potential the Department of Neuroscience must play a key role in creating a synergistic environment that optimizes collaborations between all Neuroscience researchers at the College. Recognizing that brain research is still in its infancy we must also create an outstanding educational environment that will produce the next generation of neuroscience researchers to establish ourselves as true leaders in this discipline.

5.2 Goals of Policy

This policy was developed to provide greater oversight and mentoring of our Graduate Student Training Faculty to ensure that we satisfy our Mission to provide outstanding graduate training for our students. The policy provides a set of benchmarks and procedures to improve our Graduate Training and to identify and respond to problems in graduate education more rapidly and effectively while remaining in synchrony with the overall rules and procedures of the Graduate School of Biomedical Sciences.

5.3 Laboratories available for Rotations and Mentoring of Students

Both Primary and Secondary Faculty will be required to respond yearly (by June 1) to verify their interest in participating in Graduate Student Mentoring for the matriculating class. The annual verification does not affect Training Status, but rather is used to provide a list of available labs to the students in the matriculating class. This list will be used by incoming students to select laboratory rotations. In addition, specific introductory meetings will be held to ensure the students are fully aware of all their available opportunities.

5.3.1 Procedures for Assignment of Students to a Mentor's Lab

Three criteria must be satisfied to assign a student to a mentor’s lab:

1) Student must have successfully completed all laboratory rotation requirements including at least one laboratory rotation in the lab.

2) A completed and signed application for placement, which also requires the signature of the Chair (confirming commitment for financial support), must be submitted to the Graduate Program Director.

3) The Graduate Program Steering Committee must review and approve the assignment before the Graduate Program Director can sign the required
graduate school paperwork. It is the student’s responsibility to ensure that all these steps are completed before the Graduate Program Director will sign the official Graduate School forms completing the assignment.

5.3.2 Procedures for forming Graduate Student Advisory Committees

Graduate students and their advisors are free to select the composition of their Thesis Advisory Committee under the Guidelines provided by the Graduate School with the following additional restrictions:

1) Graduate Program Director will not sign off on the committee unless it contains at least one “Reporting” faculty member, who is not also the mentor that is approved by the Departmental Graduate Program Steering Committee for ensuring quality control in student examinations and student progress.

2) If concerns are raised about the lack of student progress or issues of non-professional conduct then a review will be conducted by the Department Graduate Program Committee.

5.3.3 Benchmarks for Successful Mentoring of a Ph.D. Student

The Graduate Program has developed the following Benchmarks to help PI’s and students track progress towards Ph.D. completion. These criteria assume the student has achieved candidacy by the end of their 2nd year. If academic problems occur to delay the student in the first 2 years, or other “leave of absence” issues occur, then these timelines will be adjusted accordingly.

1) Ph.D. projects should be planned and mentored to be completed within 5.5 years from the date of matriculation in the program. M.D./Ph.D. students have already completed some of their Ph.D. course requirements so the Ph.D. portion of their training should be completed in less time – the aim is 4.5 years.

2) Ph.D. students must be given sufficient time to participate in the training activities of the Department, including but not limited to: preparation time for required examinations, attendance at Departmental Seminars, attending student journal club (to be created), attending other journal clubs, active participation at our annual retreat, active participation in Graduate Student day, and timely completion of required course work.

3) Ph.D. students are expected to be provided with multiple opportunities to present their research at national meetings with a first abstract submitted by the end of their 2nd year in the lab, i.e. by the end of Year 3.

4) By the end of their 2nd year in the lab, Ph.D. students should submit an NRSA or equivalent Grant Application, if eligible.

5) Ph.D. students are expected to be involved in the submission of their first manuscript either as a first or middle author by the end of their 3rd year in the lab, i.e. in Year 4.

6) Ph.D. students must have a first author manuscript accepted or in press for peer reviewed publication before they can ask for permission to write.

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7) Ph.D. students should have published at least 2 peer reviewed publications based on their thesis work within a year of graduating, at least one of which must be a first author publication.

8) The Department is developing Teaching opportunities for Graduate students. It is expected that students will be provided with sufficient time to develop their teaching skills through this program.

9) Ph.D. students should be explicitly mentored about, and exposed to, opportunities for post-doctoral work or other post-graduate options at least 1 year before completion of the Ph.D.

10) The thesis must be written by the graduate student in a manner approved by the graduate school. The thesis must include a scholarly Introduction to the question addressed in the thesis research and a scholarly Discussion that places the thesis work in its proper context and discusses the implications of the work and important future directions. The Methods and Results chapters may be a compilation of the in press and published thesis work.

The Reporting member of the thesis advisory committee is responsible for monitoring how well these Benchmarks are being met and for notifying the Graduate Program Steering Committee of potential problems as soon as they become evident. If sufficient resources and mentoring are being provided and the graduate student continues to fall behind, then a remediation plan with clear guidelines must be developed. Failure by the student to correct the problem can result in the thesis project being terminated by the Graduate Program Steering Committee with or without a terminal master's degree, depending upon the actual progress made. If insufficient resources or mentoring are being provided then a remediation plan must be developed. Failure to correct the problem can be grounds for removal of the mentor from the Training Faculty.
6 Faculty Training Procedures

6.1 Procedures for Establishing Faculty Training Status

Faculty that wish to be mentors for Neuroscience graduate students must be approved by the Neuroscience Graduate Training Program prior to having students rotate in their laboratory. Minimum criteria for participation are:

a. An appointment as a Primary or Secondary Tenured or Tenure track Faculty in the Department of Neuroscience.

b. Financial Commitment agreement from Primary Appointment Chair for participation in the Neuroscience Graduate Training Program.

c. Training Status must be renewed every 3 years for non-Tenured Faculty or every 5 years for Tenured faculty by the Neuroscience Graduate Training Program. For Primary Faculty, this review will be conducted as part of the normal promotion/evaluation process. For Secondary Faculty, a specific review process will be conducted.

d. Agreement to abide by the rules and procedures for Graduate Student mentoring and research training.

Faculty not satisfying all these criteria cannot serve as a primary mentor but may be eligible to act as a co-mentor with a Faculty member that is a member in good standing of the Training Faculty.

6.2 Procedures for Participating in Laboratory Rotations or Mentoring of Students in Matriculating Class

Both Primary and Secondary Faculty will be required to respond yearly (by June 1) to verify their interest in participating in Graduate Student Mentoring for the matriculating class. Primary Faculty will have their active participation verified as part of the Annual Review process with the Chair of Neuroscience. Secondary Faculty will renew their active status by submitting a form to the Director of the Graduate program indicating that they have the interest, time, space, and financial resources required for Graduate Student Training. The annual verification does not affect Training Status, but rather is used to provide a list of available labs to the students in the matriculating class. However, the Graduate Program Steering Committee will review all requests for participation in rotations. If currently a lab has a large number of students (>3-4), and there is strong evidence for lack of clear productivity and timely completion of the thesis projects, then the Faculty will not be allowed to participate in rotations and accept graduate students that year. This restriction will continue until their status in the program is re-instated (by fulfilling the benchmarks outlined above for the existing students).
7 Evaluation of Training Status for Faculty

The Review of Training Status for Faculty every 3-5 years will examine the following factors:

7.1 Number of Students Successfully Mentored

Successful mentoring will require completion of a Ph.D. Project and successful Defense and publication of the Thesis work. If the recommended Benchmark criteria approved by the Graduate Program Steering Committee were not met, the Reporting member will provide an analysis of the problems that occurred and whether there was a sufficiently serious mentoring problem that would need to be addressed before additional students could be placed in the lab.

7.2 Status of Current Students under Mentorship

For students that have not completed their Ph.D., we will examine:

a. A review by the “Reporting” member student committee for each student in our program being mentored by the P.I. to determine if student progress is satisfactory relative to our benchmarks. If a problem with mentoring is identified, a remediation plan must be developed before Training Status can be granted or renewed.

b. Whether the PI has the resources to financially support the students being mentored.

c. The number of students being mentored in the lab from all Programs to determine if the PI has the time available to properly mentor our students. Our general rule is no more than 3-4 students should be mentored at a time. If this number is exceeded, then the PI must provide a justification or a remediation plan to continue as a Training Faculty member.

7.3 Failure to Successfully Mentor Students to complete a Ph.D.

For every student that was not successfully mentored to a Ph.D., the “Reporting” member of the Thesis Advisory Committee will prepare a report with the Graduate Program Director outlining the issues that led to the failure. Successful mentoring requires a commitment of the mentor to work with students and ensure that they are placed on projects with reasonable starting hypotheses and scopes. If poor mentoring is identified as a contributing factor, then a remediation plan must be developed with the Graduate Program Director that is approved by the Graduate Program Steering Committee before additional students can be placed in the lab.
7.4 Active Participation in all aspects of the Graduate Program:

Training Faculty are expected to participate in the education of all our students. Active status will review faculty participation in the following activities essential to our Graduate Program:

a. Didactic Teaching of Graduate Student
b. Participation in other training opportunities like serving on Advisory Committees, participating in Journal clubs, or other training activities like Graduate Student Day, etc.
c. Participation in the annual Department Retreat.
d. Serving on Committees to ensure the quality of our Graduate Program.

7.5 Provisional Training Status

New Faculty appointments or faculty on a remediation plan will have Provisional training status until they have successfully trained at least one student. Provisional training faculty will be mentored by the “Reporting” faculty member of the student’s committee to ensure that they are developing good mentoring skills or are successfully completing the requirements of any remediation plan. Provisional Faculty are limited to mentor at most 3 Ph.D. students from all departments at one time unless an exemption is granted by the Graduate Program Steering Committee.