UTSA
Department of Biology

Ph.D. in Biology with a concentration in Neurobiology

Policies and Procedures

2014 - 2015
Overview

The Department of Biology offers a doctoral program leading to a Ph.D. in Biology with an emphasis in Neurobiology. The program provides students comprehensive education and training. Neuroscience faculty members in the Department of Biology are actively involved in laboratory research seeking understanding into the function of the nervous system in areas of neuroanatomy, neurophysiology, neurodevelopment, molecular neurobiology, biophysics, imaging, behavior, and neural modeling. The information outlined below describes the general policies and procedures of the Neurobiology Ph.D. program. These policies procedures are additions to, but do not supersede, University policies and procedures detailed in the UTSA Graduate Catalog and Information Bulletin. The policies and procedures described here are as established by the Doctoral Studies Committee for the Neurobiology Ph.D. program (which will be referred to as the DSC). Changes and updates to this document and to the policies may be made by a majority vote of the DSC. This document was approved by the DSC on August 27, 2012, and supersedes all previous policy statements.

1. Admission

Applications for admission to the Neurobiology Ph.D. program will be solicited once per year, and will be evaluated in accordance with standard UTSA policy. Applicants must fulfill the requirements for the degree as described on the UTSA graduate program website (http://www.utsa.edu/graduate). Applicants will be scored on the basis of all application materials. Applicants will be admitted by the Department of Biology in order of their priority for admission to fill all available positions. The number of students admitted each year will be determined by the availability of funds and the projected capacity of the program to provide adequate training resources.

2. Required Courses and Research Rotations

It is expected that all students will successfully complete the required core courses and research rotations within their first 3 semesters. To remain in good academic standing, students must receive a grade of B or better in all of the required courses. Students not completing the required courses by the end of their third semester, or students receiving a grade less than B, will be placed on academic probation until the deficit(s) are corrected. Students on academic probation will not be eligible for financial support from the Department of Biology. Furthermore, students that have not corrected any and all deficits within a one year period will be recommended for dismissal from the program.

Every student must enroll in the Neurobiology Seminars in Life Science (BIO 7051) and in Biology Colloquium (BIO 7041) every semester. During the Fall Semester, students must attend the Neurobiology Journal Club section of 7041. During the Spring semester, students may attend a Neurobiology colloquium of their choice.

During the first year, students must also complete at least 3 research rotations, each 10 weeks per rotation. The purpose of a research rotation is to expose the students to a diverse set of research environments and opportunities. Students will complete 3 rotations regardless of their research interests or source of support. Faculty responsible for research rotations will insure that students attend laboratory activities and participate in research already underway in
that laboratory. Each student will prepare a Research Rotation Report at the completion of each rotation. The topic of the report will be the research in which the student participated and it will include an Introduction, posing a research problem, a description of the specific goals of the research project and some results achieved on the project while the student was participating. Research Rotation Reports will be submitted to and reviewed by the faculty member supervising the rotation, and is reflected in both the grade and SACS evaluations for the rotation course.

Students are also required to enroll in Supervised Teaching in Life Sciences (BIO 7113) in their second year. The student’s teaching assistant assignment will consist of three hours (1 week) of lecture in an undergraduate or graduate course approved by the DSC. The student must first arrange the lectures with the course instructor. After fulfillment of the supervised teaching requirement, and at the discretion of the Biology Department, it may be possible to serve additional semesters as teaching assistant in select, Department approved courses.

Students seeking transfer of credit must submit a written request to the DSC, including information on the course(s) and justification, before being admitted to candidacy.

3. Selection of Advisors

Selection of an advisor should occur at the end of the three rotations. The selection of an advisor reflects the mutual agreement of the student and the advisor as indicated by signatures on the Advisor Selection Form, and must be approved by the DSC. Changes in advisor must be approved by the DSC. All students must have an advisor assigned by the time of advancement to candidacy. All Ph.D. candidates must have an advisor, and any candidate who is unable to secure sponsorship by a faculty member eligible to act as advisor cannot continue in the program.

4. Admission to Candidacy

To be admitted to candidacy, students must have completed all required courses and rotations, and be in good academic standing. The first step in admission to candidacy is successful completion of the Written Qualifying Examination (Written QE) offered in the summer following the first year. The written QE tests the ability of students to demonstrate that they have acquired a solid foundation in core areas of neuroscience. The exam is not simply a test of factual information gleaned from the core courses, but also requires students to integrate knowledge from courses, seminars, podcasts, and outside readings. To pass the exam, students must be able convey this knowledge in written form, and apply this knowledge to answer questions regarding experimental design and interpretation. The exam is prepared and graded by the DSC, who also determines criteria for success on the examination. Students failing the Written QE must repeat the exam the next time it is offered, typically six weeks after the first exam (approximately mid-August, before the beginning of the Fall semester of their second year). A student failing the exam for a second time will be recommended for dismissal from the program.

After successful completion of the Written QE, students have until the end of the Spring semester of Year 2 to take the Oral Qualifying Exam (Oral QE). The Oral QE is administered by an examination committee consisting of four members of the graduate faculty of the
Department of Biology. The Oral QE Committee members are selected by the student with the help of his or her advisor. While the committee may include the student's advisor, the advisor can not serve as the committee's chair. Members of the examination committee must indicate their willingness to participate by initialing the Oral Exam Committee form, and the committee's composition must be approved by the DSC at least 1 month before the exam can be scheduled. Should unforeseen extenuating circumstances appear that prevent a member of the examination committee from participating in the Oral QE, a current faculty member of Neurobiology Doctoral Studies Committee will act as an alternate member of the examination committee.

In preparation for the Oral QE, a student will submit to his/her examination committee a preliminary research proposal. Usually, this preliminary proposal will be an early version of the student's subsequent dissertation proposal, but this is not required and in some instances the student's eventual dissertation proposal might be on an unrelated topic in Neuroscience. The proposal should follow the format of the NIH National Research Service Award (NRSA) predoctoral application. This format is described online as a part of the application instructions for the NRSA application process. The instructions are on the form PHS 416-1 (see http://grants1.nih.gov/grants/funding/416/phs416.pdf). The QE proposal should follow the instructions for the Research Training Plan section of the NRSA application, and must include (A) a set of Specific Aims, (B), a Background and Significance section, which poses a research problem and includes a critical literature review that demonstrates a scholarly mastery of the current literature on the topic of the proposal, (C) a statement of Research Design and Methods, in which an experimental approach is developed to address the research problem posed, and the specific experimental methods to be employed are described in adequate detail to allow a determination of their feasibility. This section should also discuss possible outcomes of the experiment and their interpretations. The proposal need not include any actual experimental results. A copy of the final version of the proposal used for the exam should be sent to the chair of the neurobiology Doctoral Studies Committee (DSC).

The Oral Qualifying Exam will generally concentrate on issues raised in the preliminary proposal, but may address any topic in the student's Neuroscience education. In the event that the Oral Qualifying Exam Committee is not satisfied with a student's performance in the exam, the student must repeat the exam in the summer before the first week of the Fall semester of Year 3. Students failing to complete their Oral QE by this time will be recommended for dismissal.

Students successfully completing the Written and Oral Qualifying Examinations, and having completed all of their required course work and research rotations, will be advanced to candidacy by the DSC upon receipt of the appropriate forms, signed by the Qualifying Examination Committee. It is expected that students will have advanced to candidacy by the end of the second year in the program.

5. Formation of the Dissertation Committee

Upon admission to candidacy, students should immediately form a Dissertation Committee to oversee the remainder of the student's education in the program. The Dissertation Committee must consist of at least 4 members of the graduate faculty in the Department of Biology, and one outside member. The outside member may be a member of the faculty of another
Department at UTSA, or a distinguished member of the faculty of another institution, and must first be approved by the Graduate Council. Students have six months after passing the Oral QE to get an outside member for their dissertation committee. The final makeup of the committee must then be approved by the DSC. Any changes in the makeup of the dissertation committee at this point must be approved by the DSC.

Students are required to have at least one annual meeting of their dissertation committee, and must inform the DSC of the time and date of the meetings. The advisor of each student will be asked to make a yearly written evaluation of the student's progress.

6. The Dissertation Proposal

Within six months of admission to candidacy, students must submit a Dissertation Proposal. The student will write the proposal in consultation with the Supervising Professor. The proposal should be organized in a manner similar to the preliminary proposal as described above.

Once the Supervising Professor has approved the Proposal, the student will submit the Proposal to the members of the Dissertation Committee. With all members present, the Committee will question the student on the Proposal, suggest changes if needed, and give final approval of the Proposal, signing the Dissertation Proposal approval form, to be submitted along with the Dissertation Proposal to the Chair of the Doctoral Studies Committee. The signatures of the Chair of the Doctoral Studies Committee, the Department Chair and the Dean of Graduate Studies are also required on the approval form. A copy of the approved Proposal and the approval form will be placed in the student's file.

If the Committee does not approve the Proposal at this meeting, the student has 1 month in which to schedule a second meeting of the Committee and obtain approval of the Proposal. The student should work with the Committee during this time to correct any deficiencies noted by the Committee at its initial meeting.

7. The Dissertation Defense

The student must present his or her Dissertation work at a public seminar and then take and pass a final Oral Examination (the Dissertation Defense).

After the Dissertation Committee accepts the dissertation for examination, the student will consult with the members of the Dissertation Committee regarding an acceptable date for the seminar and Dissertation Defense. At least one month prior to the exam, the student will request that the DSC schedule the Seminar and Defense on that date. Notices of the seminar are posted by the graduate administrative assistant at least one week prior to the Seminar and Defense.

8. Total Duration of Students in the Program

While it is of the utmost importance that a student’s dissertation research be of the highest possible caliber, it is also essential that the student complete all requirements for his/her Doctoral degree in a timely fashion. Students who take an inordinate amount of time to
complete their degree seriously compromise their ability to obtain a professional position upon graduation. As long as a student is in the Program, they are expected to remain in residency and take 21 hours of course work per year (i.e. 9 hours per semester and 3 hours in the summer). It is expected that most students will complete their degree and graduate from UTSA by the end of their 5th year from the time they were admitted.

**Key listing forms in Time Line (next page):**

**Predoctoral:**

P1 - Selection of Advisor

P2 - Program of study

P3 - Selection of QE committee

P4 - Qualifying Exam proposal (Signature page)

P5 - Completion of QE

P6 – Application to candidacy

**PhD candidate:**

C1 – Appointment of Dissertation Committee

C2 - Outside member and tentative Dissertation title approval by graduate Council

C4 - Application for graduate Faculty membership for external committee member(s)

C3 - Dissertation Proposal Approval form (signature page)

C5 - Dissertation Title and defense Date

C6 – Dissertation Approval (signature page)
Milestones Agreement Form  
Neurobiology Ph.D. Program

This form is provided for the purpose of informing students about the academic milestones that they will be expected to reach in order to earn their Ph.D. degree as well as when they are expected to complete these milestones. Students are expected to reach each milestone within the specified time period in order to make satisfactory progress through the program. Students who are not making satisfactory progress may lose funding, be placed on academic probation, or be dismissed from the program. It will be clear after reading this document that pursuit of the Neurobiology Ph.D. degree entails a high amount of effort. It is a full-time job. As such, students in the Neurobiology Ph.D. Program should not keep outside employment.

Academic Advising

Upon entering the Neurobiology Ph.D. program, all students will be assigned an advisor. The advisor will be a member of the Biology department. All students’ first advisor will be the Graduate Advisor of Record, who is the chair of the Doctoral Studies Committee. Upon joining the laboratory of a faculty member of the Biology Department, each student will then have the principal investigator (PI) assigned as his/her advisor.

Academic advising includes the following elements that are designed to ensure that students remain in good academic standing and make satisfactory progress through the program:

- Ensuring that semi-annual reviews between student and advisor and/or supervising committee occur. In addition, all program students will meet individually with the GAR to obtain approval of course enrollment forms for each semester and each summer session. Note that program students who have selected a dissertation advisor will obtain that advisor’s approval of their course enrollment form before meeting with the GAR.
- A student’s selection of a dissertation advisor must be approved by the Neurobiology DSC, and the Department Chair.
- Upon advancement to candidacy, program students will have convened a Dissertation Committee, and will meet with that committee twice each year: once during the fall semester, and once during the spring semester.
- Clarification of the timetable for completing any remaining course requirements, examinations, and other requirements.
- Program students will follow the curriculum order outlined in the Neuobiology PhD Program Policy and Procedures Manual unless approved by the GAR to do otherwise.
- Program students are normally expected to complete the Neurobiology PhD program within five years. Requests to extend this period of matriculation must be approved by the student’s dissertation advisor, the members of the Dissertation Committee, the Neurobiology DSC, and the Department Chair.

Requirements for all Students in the Neurobiology Ph.D. Program

<table>
<thead>
<tr>
<th>Milestones (Overview)</th>
<th>Expected Time of Achievement</th>
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<tbody>
<tr>
<td>Review of Student’s Progress with advisor and</td>
<td>Every semester (except Summer)</td>
</tr>
<tr>
<td>Dissertation Committee (once formed).</td>
<td></td>
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</tbody>
</table>
Successful completion of written qualifying exam. End of summer semester of first year.

Successful completion of oral qualifying exam. End of summer semester of second year.

Core Courses and Rotations Completed. End of first year.

Dissertation Committee Appointed and Approved. Fall of third year.


Dissertation Completed, successfully defended, and Approved By Committee. End of fifth year.

Dissertation Accepted by Graduate School. End of fifth year.

Exit Interview Completed and Submitted. End of fifth year.

Every semester, sign up for 1 hour of 7041, and 7051. Fall semester, 7041 must be Neuro Journal Club. After advancement to candidacy, sign up for at least 1 hour of Doctoral Dissertation every semester.

**Milestones (year-by-year)**

**Year 1 –**
- Attend the weekly Neurobiology seminar.
- Complete four core courses: BIO 5423 (Neuroanatomy), BIO 5433 (Neurophysiology), BIO 6233 (Quantitative Biology), and BIO 5443 (Neurochemistry); and earn a grade of B or better in each course.
- Pass the written qualifying exam by the end of the summer semester.
- Complete three research rotations of 10 weeks each (Bio 7571-3 Experimental Techniques in Biology) in laboratories of three different program faculty members.
- Select a dissertation advisor in whose lab the student will pursue his/her dissertation research.
- Perform Doctoral Research for academic credit (BIO 7211-6) during the summer.

**Year 2 –**
- Attend the weekly Neurobiology seminar.
- Complete the Supervised Teaching in Biology course (BIO 7113).
- Complete at least two elective courses (= graduate level lecture courses in Biology or related area) and earn a grade of B or better in each of these courses.
- Perform Doctoral Research for academic credit (BIO 7211).
- Convene an Oral Qualifying Exam Committee and pass the oral qualifying exam by the end of the summer.
• Advance to candidacy.
• Perform Doctoral Research for academic credit (BIO 7211-6) during the summer.

Year 3 –
• Have the dissertation committee set with an outside member by the end of the Fall semester.
• Attend the weekly Neurobiology seminar.
• Complete all remaining elective courses by the end of the fall semester earning a grade of B or better in each of these courses.
• Convene a Dissertation Committee and have this approved by the Neurobiology DSC and Graduate School.
• Perform Doctoral Research for academic credit (BIO 7211-6).
• Meet once during each semester with the Dissertation Committee.

Year 4 –
• Attend the weekly Neurobiology seminar.
• Perform Doctoral Dissertation (must have a minimum of 18 hours of Doctoral Research to take Doctoral Dissertation) for academic credit (BIO 7311).
• Meet once during each semester with the Dissertation Committee.
• Perform Doctoral Research for academic credit (BIO 7211) during the summer.

Year 5 –
• Attend the weekly Neurobiology seminar.
• Perform Doctoral Dissertation for academic credit (BIO 7311-3).
• Meet once during each semester with the Dissertation Committee.
• Defend the doctoral dissertation to the satisfaction of the Dissertation Committee.

Degree Completion Checklist for Students
• Maintain active student status by registering for courses every fall and spring semester.
• Submit your signed Milestones Agreement Form to your advisor before the end of your first semester.
• Complete all required organized coursework.
• Schedule and successfully complete required qualifying exams.
• Select the Chair and members of your dissertation committee.
• Have your committee approved by the Neurobiology DSC and the Graduate School.
• Prepare and successfully present your dissertation proposal.
• Apply for Advancement to Candidacy upon completion of the required core course work, and completion of the written and oral qualifying exams with passing grades.
• Enroll in required research/dissertation hours and complete your dissertation.
• Successfully defend your dissertation.
• Submit required documentation to the Graduate School for completion and graduation.
I have read this form and have had the opportunity to discuss the information contained in it with my advisor. I understand the academic milestones that I am expected to reach in order to successfully complete the Neurobiology Ph.D. program, as well as the expected timeline for completing these milestones.

__________________________________________  __________________________
Student’s Signature                                    Date

__________________________________________  __________________________
Advisor’s Signature                                    Date
Neurobiology PhD Student Timeline

Complete Core Courses and Rotations

- Year 1
- Fall
- Spring
- Summer

Elective Courses, Doctoral Research

- Year 2
- Fall
- Spring
- Summer

- Take written QE & select advisor (P1)
- Final deadline to complete oral QE, form dissertation committee and be admitted to candidacy.

Semester after passing the Written QE, select QE committee (P3), submit QE proposal (P4) and take oral QE (P5). Then form dissertation committee (P6, P7, P8) and apply for candidacy (P9)

Elective Courses, Doctoral Dissertation

- Year 3
- Year 4
- Year 5
- Year 6

- Final Deadline for approval of dissertation proposal (C1)
- Thesis Defense (C2-C5) and Graduation

Every year, submit Annual Report of progress on form C9
After formation of thesis committee, arrange committee meeting every semester and submit form C10

Every semester, sign up for 1 hour of 7041, and 7051. Fall semester, 7041 must be Neuro Journal Club
After advancement to candidacy, sign up for at least 1 hour of Doctoral Dissertation every semester