Doctoral Program in Neuroscience
Doctoral Student Guidelines

Tulane Brain Institute
Tulane University
New Orleans, Louisiana

(Revised 2020)

Link to Guidelines:
https://sse.tulane.edu/neuro/academics/graduate/phd/resources
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*The guidelines presented in this document conform to the requirements for earning the Ph.D. degree as set forth by the Tulane University School of Science and Engineering (SSE) Graduate Program. Students should consult the following websites for additional information on SSE Graduate Program policies and to access forms related to the Ph.D. in Neuroscience.

**SSE Ph.D. Programs**
https://sse.tulane.edu/academics/graduate/phd-programs

**SSE Forms, Policies, and Procedures**
https://sse.tulane.edu/academics/graduate/forms-policies

**SSE Graduate Program Catalog**
https://tulane.app.box.com/s/vt0qe6vp53d1wyektfx7qavdggu1w69fx

**Neuroscience Ph.D. Program**
https://sse.tulane.edu/neuro/academics/graduate/phd

**Neuroscience Ph.D. Program Resources and Documents**
https://sse.tulane.edu/neuro/academics/graduate/phd/resources

**Tulane Brain Institute**
http://brain.tulane.edu
I. GENERAL INFORMATION

I. A. Program Description
The Neuroscience Doctoral Program is an interdisciplinary graduate program composed of doctoral students and faculty members from departments across five divisions and three campuses of Tulane University. As an educational branch of the Tulane Brain Institute, the program is administered through the School of Science and Engineering and governed by the Neuroscience Doctoral Training Committee. Appointed by the Director of the Tulane Brain Institute, the Committee is composed of a director and five faculty members representing the Main and Medical School campuses. Contributing divisions include the Schools of Science and Engineering, Liberal Arts, Medicine, Public Health and Tropical Medicine, and Primate Center. Faculty research programs are funded through grants competitively awarded by federal, state, and private agencies under four major themes: *Memory and Cognition; Neurodegenerative Disease, Neural Injury and Repair; Hormone-Brain Interactions; and Brain-Body Health.*

Doctoral students conduct cutting-edge research in modern laboratory environments that foster supportive instruction and intensive training in the neurosciences. The Neuroscience Doctoral Program provides graduate students with a broad education in both the theoretical and applied aspects of basic research in the neurosciences. Through their coursework and research, students receive diversified training in neuroanatomy, neurophysiology, neuropharmacology, neuroendocrinology, molecular and cellular neurobiology, behavioral neuroscience, cognitive neuroscience, and research methods. In addition, students have opportunities to present and publish their research findings, and to gain experience in grant writing and teaching pedagogy. The objective of the Neuroscience Doctoral Program is to prepare graduate students for their future postdoctoral training and careers in academia, industry, and related professions.

I. B. General Policies

I. B.1. Degree Requirements
The degree of Doctor of Philosophy (Ph.D.) in Neuroscience is awarded for the successful completion of the required 50 hours of academic credits, passing of a qualifying examination, completion of a dissertation prospectus, and completion and defense of an original empirical research project in the form of a doctoral dissertation. Students are expected to complete their course requirements during their first two years of study. Students must pass the qualifying examination in their third year of study, complete the dissertation prospectus in their fourth year, and complete and defend an original empirical investigation in a chosen field of interest by the end of their fifth year of study. Students are expected to complete all requirements for the Ph.D. degree, including the dissertation, within five years of beginning the program.
I. B.2. Transfer of Graduate Course Credits
Acceptance of graduate credits for courses previously completed at Tulane University or other graduate institutions must be approved by the Neuroscience Doctoral Training Committee and by the SSE Graduate Program. Up to 24 semester hours of transfer course credits may be accepted toward the Ph.D. degree. To be considered for transfer credits, graduate work completed at Tulane University or other institutions must carry a grade of B or better and must have been completed no more than six years before beginning doctoral study in the Neuroscience Program. Graduate course credits earned more than six years before beginning doctoral study must be approved by the Neuroscience Doctoral Training Committee and SSE Graduate Program. The decision concerning the acceptance of transfer course credits will not be reached until after the student has completed at least one semester of successful study in the doctoral program (≥ 9 credits) at which time the student can petition the Neuroscience Doctoral Training Committee to recommend transfer of course credits. Transfer of course credits earned in Tulane’s M.S. Programs in Neuroscience (4+1 and M.S.) is described in Section III A.1.

I. B.3. Continuous Registration as a Full-Time Student Requirement
A student admitted to the SSE Graduate Program must be in continuous registration as a full-time student in a degree-granting division of Tulane University until the degree is awarded. To maintain full-time status, students must be enrolled for 9 credits or more per semester in a degree-granting division of Tulane University or be registered in Dissertation Research (NSCI 9990, 3 credits). The continuous registration requirement applies both to resident and non-resident students. Continuous registration entitles the student to full student privileges. Failure to be so registered is considered de facto withdrawal and the SSE Graduate Program reserves the right not to readmit a student. A student who is readmitted must register for the unregistered semester(s) and pay all applicable student fees retroactively.

I. B.4. Performance Standards
According to the quality of academic work requirement, students in an SSE Graduate Program must maintain a grade point average of at least 3.0 (B). If a student receives one grade of B-, the student will be considered for probation by the SSE Graduate Dean in consultation with the Neuroscience Doctoral Training Committee. If a student receives two grades of B-, or one grade less than B-, during his/her tenure in the SSE Graduate Program the student will be placed on probation and considered for dismissal by the SSE Graduate Dean in consultation with Neuroscience Doctoral Training Committee. The terms of probation and removal from probation are decided by the Neuroscience Doctoral Training Committee in consultation with the SSE Graduate Dean. Equally important, probation or dismissal will be considered if a
student fails to pass the qualifying examination, complete the dissertation prospectus, or complete and defend the dissertation according to the established time frames (see below).

I. B.5. Grievance Procedures

Procedures regarding academic complaints, including grades, can be obtained from the SSE Graduate Program. The student must first discuss a complaint with the professor; then, if dissatisfied, submit a formal written complaint to the Director of the Neuroscience Doctoral Training Program. https://sse.tulane.edu/academics/graduate/forms-policies

I. B.6. Unified Code of Graduate Student Academic Conduct

The SSE Graduate Program expects students to conduct their academic endeavors with honesty and integrity. Activities covered by the *Unified Code of Graduate Student Academic Conduct* include course work, examinations, and research. This *Unified Code* outlines individual responsibilities as well as procedures to be followed if there is a question concerning a student’s academic honesty or integrity. These values are held in common by all departments and enforced by the sanctions of the Dean of the SSE Graduate Program. All students enrolled in the SSE Graduate Program are subject to these regulations and should be familiar with the *Unified Code*. Principles and activities not covered by the *Unified Code* should be addressed to the Dean of the SSE Graduate Program who will determine the appropriate jurisdiction. https://sse.tulane.edu/academics/graduate/forms-policies

I. B.7. Leave Time

**University Holidays.** Students are eligible for holidays defined in the University calendar. However, students should be aware that the SSE Graduate Program and the Medical School operate on different calendars, so graduate students enrolled for coursework at the Medical School may have to adjust their holiday schedules accordingly.

**Vacation Time.** Students are eligible for two weeks of vacation per year. The summer session during graduate school is time spent in residence, not a vacation period.

**Leave of Absence.** Students may apply for a leave of absence if more than two weeks of leave time is required. Stipend support is suspended during leaves of absence unless extraordinary circumstances prevail. Leaves of absence must be approved by the Neuroscience Doctoral Training Committee and the student’s major doctoral advisor.

I. B.8. Required Withdrawal and Denial of Enrollment

A student may be required to withdraw from any course or the Program and the University, temporarily or permanently, for any of the following reasons:

1. Work below the standards specified by the school in which the student is enrolled.
2. Violation of the *Unified Code of Graduate Student Academic Conduct* or other misconduct.
3. Possibility of danger to the health of the student or other students if enrollment continues.

The University reserves the right to forbid any student’s continued enrollment without assignment of reason. The SSE Graduate Program, however, will provide a student with a statement of reason in writing from Neuroscience Doctoral Training Program. An appellate procedure has been established in cases involving academic performance or possible infringement of academic freedom. The SSE Graduate Program also has appellate procedures in cases involving non-reappointment of fellowships or scholarships when the formal terms of the first award have given reasonable expectation of renewal. Such procedures may also apply to cases in which a graduate, teaching, or research assistant, is relieved of a position before the end of the term of the appointment or is not reappointed when the formal terms of the first appointment have given reasonable expectation of reappointment. Detailed procedures can be obtained from the SSE Graduate Program. Resignation from the SSE Graduate Program must be made in writing to the Dean of the SSE Graduate Program. The student who finds it necessary to withdraw or to resign should contact the SSE Graduate Office to complete the proper forms. https://sse.tulane.edu/academics/graduate/forms-policies

I. C. Financial Policies

I. C.1. Tuition Waiver, Stipends, Fees
Students are guaranteed to receive financial support for five years as long as satisfactory and timely progress is made toward the degree. Financial support includes a full tuition waiver and a stipend paid every other Friday over twelve months of the year. Tuition waivers do not include full reimbursement of University fees. Full-time graduate students are required to pay University fees that cover academic support, health services, student activities, and use of the Reily Student Recreation Center. In addition, federal law requires that all students must carry health insurance, which can be purchased through the University. Doctoral students receive a health insurance supplement to cover 50% of their premiums from SSE or their advisors’ grants. Students covered by insurance policies outside the University must provide proof of alternative coverage and are not eligible for the 50% supplement.

I. C.2. Teaching Assistantships
Most students are funded during their first two years by teaching assistantships. Tuition waivers, stipends, and health insurance supplements are provided by the School of Science and Engineering. Teaching assistantships typically require the student to participate in teaching of undergraduates on the Main campus. The time commitment for a teaching assistantship varies depending on which course a graduate student is assisting but should not exceed 8-10 hours per week during the semester. Teaching assistant ships are funded by SSE and doctoral students are expected to perform their duties throughout the semester professionally and conscientiously
while supporting students in their learning and assisting faculty members in their teaching.

https://tulane.app.box.com/s/bw2asc79oc8b3t70wpy3sk3ye8bw2ysy

I. C.3. Research Assistantships
After the first two years in the Neuroscience Program students are supported through research assistantships provided through their permanent laboratories. Tuition waivers continue to be provided by the School of Science and Engineering. Beginning on May 15 following the second year of study, stipends and health insurance supplements are paid by the permanent laboratory through the advisors’ research grants or extramural fellowships (see below). Therefore, major advisors must develop plans to provide support during their students’ tenure in the program after the second year and throughout subsequent years to graduation.

I. C.4. Extramural Fellowships
Financial support of doctoral studies also may be obtained through competitive grants awarded directly to doctoral students submitted in collaboration with their advisors. Pre-doctoral fellowships are available through various national, state, and private funding agencies, including but not limited to the following:

- **National Institutes of Health** – Individual Fellowships

- **National Science Foundation** – Graduate Research Fellowships

- **Private Foundations** – List Compiled by National Institutes of Health
  [https://www.fic.nih.gov/Funding/NonNIH/Pages/predoctoral-graduate.aspx](https://www.fic.nih.gov/Funding/NonNIH/Pages/predoctoral-graduate.aspx)

Funds obtained from competitive awards typically become available as long as one year after the submission of proposals. In some cases, proposals unfunded upon first submission may be resubmitted in the next review cycle adding additional time. Therefore, proposals should be submitted well ahead of the date when fellowships expect to be activated by students.

I. C.5. Outside Employment
Because of the nature of doctoral training full-time or part-time employment outside the program is strongly discouraged. Training in a doctoral program is labor and time intensive requiring focused effort on the part of students. Should a student deem outside employment to be necessary due to extenuating circumstances, approval must be obtained from the advisor and Neuroscience Doctoral Training Committee.
II. STUDENT ADVISEMENT

II. A.1. The Temporary Advisor
First-year students will meet with the Director of the Neuroscience Doctoral Program regularly to consult on issues that include planning the first-year curriculum, scheduling research rotations, assigning of teaching assistantships, and adjusting to the first year of doctoral study. First-year students are strongly encouraged to consult with the Director in the event of any academic, research, or personal difficulties that may arise during the first year of study.

II. A.2. The Permanent Major Advisor
Selection of a permanent major advisor is made after three research rotations have been completed and before the beginning of the second year of study (see below). Selection of a major advisor is a mutual decision agreed upon by the student and the faculty member who must be a member of the faculty of the Tulane Brain Institute. Importantly, the major advisor must be able to provide funding to support the student’s research, and monthly stipends and health insurance supplements after the second year of study through research grants or extramural pre-doctoral fellowships awarded to the student. In the event of an unexpected lapse in funding, an advisor can request a teaching assistantship from the Neuroscience Program to support a student for a limited period after the second year. The major advisor will provide a written report of the student’s progress to the Doctoral Training Committee in May of each year for discussion during the annual meeting of the faculty of Tulane Brain Institute. Visit “How to Pick a Graduate Advisor” at https://www.cell.com/neuron/pdf/S0896-6273(13)00907-0.pdf.

II. A.3. The Doctoral Committee
The student’s Doctoral Committee should be chosen by the student in consultation with the permanent advisor by the end of the second year. The student should carefully consider what strengths the members of the committee will contribute to the student’s research and training experience. The student’s Doctoral Committee is made up of at least four but no more than six faculty members [including the advisor], of which three must be members of the Tulane Brain Institute. Members of a Doctoral Committee must represent at least two different departments. The responsibilities of the major advisor and Doctoral Committee are to provide guidance and support to the student during graduate training. Specifically, the student’s Doctoral Committee is responsible for monitoring student progress, administering and evaluating the written and oral components of a qualifying examination, participating in the preparation and defense of a dissertation prospectus, recommending the student for candidacy to the Ph.D., evaluating the written and oral components of the dissertation, and recommending the student for the degree. Changes to student committees may be made by mutual agreement of the student, the concerned faculty member, and the advisor with consent of the Doctoral Training Committee.
III. IMPORTANT MILESTONES OF PROGRESS

III. A. Overview
The pursuit of the Ph.D. degree is a journey with five major milestones. (1) Students must successfully complete a curriculum consisting of core and elective courses taken during the first two years of study. (2) Students complete three rotations in different laboratories, each 6-8 weeks in duration, during the first year of study in order to identify a permanent laboratory. (3) Students must pass written and oral components of a qualifying examination in the third year of study administered by the Doctoral Committees. (4) Students must prepare and defend a dissertation prospectus before their Doctoral Committees in the fourth year of study. (5) Students must complete their dissertation research, prepare a written form of the dissertation, orally defend the dissertation, and receive approval from their Doctoral Committees as the final step toward earning the Ph.D. within five years. Please visit “How to Be a Graduate Advisee” at https://www.cell.com/neuron/pdf/S0896-6273(13)01191-4.pdf.

III. A.1. Required Course Work
A minimum of 50 course credits are required for the Ph.D. in Neuroscience. Of these 50 credits, 38 credits are fulfilled by completing core courses (20 credits), research rotations (6 credits), and elective courses (12 credits). Up to 12 additional credits may be satisfied by registration in Research in Neuroscience-PhD (NSCI 7980). Credits earned in Dissertation Research (NSCI 9990) do not count toward the 50 required credits. Course credits taken beyond the 50-credit minimum are included in the tuition waiver. Up to 15 course credits toward the final 50 required credits can be earned in Tulane’s Master’s Programs in Neuroscience (4+1 and M.S.). However, the following courses taken at the Master’s level cannot count toward the Ph.D. degree: (Brain Institute Seminar, Trends in Neuroscience, Research in Neuroscience). Course descriptions are available at https://catalog.tulane.edu/science-engineering/interdisciplinary-graduate-programs/neuroscience-phd/#requirementstext.

III. A.2 Core Courses
The completion of core courses is required of all doctoral students, which comprise 20 of the 50 total credits required for the Ph.D. in Neuroscience.

Graduate Neuroscience I (NSCI 7110, 3 credits) – Offered only during fall semesters, this course encompasses the basic principles of neuroscience at the graduate level, focusing on cellular and molecular neurobiology, neurophysiology and plasticity, and developmental neurobiology.

Graduate Neuroscience II (NSCI 7120, 3 credits) – Offered only during spring semesters, this course encompasses the basic principles of neuroscience at the graduate level, focusing on systems neuroscience and behavioral neuroscience as well as neuroanatomy.
Methods in Neuroscience (NSCI 6150, 3 credits) – Offered only during fall semesters, this course encompasses experimental design as well as contemporary theories, methodological approaches, and common techniques used in neuroscience research. Basic and translational neuroscience methods are included. Approaches include molecular, cellular, genetic, biochemical, computational, and behavioral.

Brain Institute Seminar (NSCI 6030-02, 1 credit) – Offered every semester, this seminar series is designed to provide students with exposure to contemporary research conducted by neuroscientists at Tulane and from other local and national institutions. Students receive academic credit for Brain Institute Seminar during their first four semesters of study in the doctoral program, but are expected to attend throughout their period of graduate training.

Trends in Neuroscience (NSCI 6040-02, 1 credit) – Offered every semester, this course is designed to allow students to learn to critically read and interpret scientific literature and to present and discuss research with their peers. Students receive academic credit for Trends in Neuroscience during their first four semesters of study in the doctoral program.

Univariate Statistics I (PSYC 6090, 3 credits) – Offered only during fall semesters, this course covers experimental design and statistical analyses used in scientific research. Topics include z-distribution, t-distribution, analysis of variance, post-hoc tests subsequent, correlation, simple and multiple linear regression, and chi-square analysis. Students may petition to substitute other graduate-level statistics courses taught at Tulane for Univariate Statistics I.

Responsible Conduct of Research (INTD-6010, 0 credit). Offered during the fall semesters by the Tulane University Research Compliance Office, this course is required by the federal funding agencies for students earning doctoral degrees in a biomedical-related science.

III. A.3. Elective Courses
A minimum of 12 course credits (4 elective courses) may be obtained for courses with numbers of 6000 or 7000. A list of some appropriate three-credit elective courses follows. Students should consult other departments and programs for other electives of potential interest, which must be approved by the Director of the Neuroscience Doctoral Program.

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<th>Skill Courses</th>
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<td>Molecular Neurobiology</td>
<td>Behavioral Endocrinology</td>
<td>Graduate Communications</td>
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<tr>
<td>Developmental Neurobiology</td>
<td>Psychopharmacology</td>
<td>College Teaching Pedagogy</td>
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<tr>
<td>General Endocrinology</td>
<td>Neurobiology of Disease</td>
<td>College Teaching Practicum</td>
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<tr>
<td>Biochemistry</td>
<td>Neurobiology of Aging</td>
<td>Univariate Statistics II</td>
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<tr>
<td>Genome Biology</td>
<td>Synaptic Organization of the Brain</td>
<td></td>
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<tr>
<td>Neural Microengineering</td>
<td>Neurobiology of Learning &amp; Memory</td>
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Course descriptions are available at https://catalog.tulane.edu/science-engineering/interdisciplinary-graduate-programs/neuroscience-phd/#courselstex.
III. A.4 Laboratory Rotations

Research rotations must be conducted in the laboratories of faculty members of the Tulane Brain Institute. The choice of rotation laboratories should be based on research areas not on specific techniques available in a laboratory, which can be learned during the dissertation research. Students should review the research profiles of faculty members of the Tulane Brain Institute and should contact laboratory heads reggrading rotations well in advance of the period when they plan to rotate.

Number of Rotations. Students complete research rotations in three different laboratories before choosing a permanent laboratory. Students preferring to choose a permanent laboratory before completing three rotations may petition the Director of the Doctoral Program for an exception. However, students are strongly urged to complete three rotations before making final decisions on the permanent laboratory in which their doctoral research will be conducted.

Time Frame of Rotations. Research rotations should begin in the fall semester of the first year of study, and should be completed no later than the summer of the first year. Enough time should be spent in each rotation laboratory to permit the student to complete the research objectives outlined by the faculty member at the beginning of the rotation, typically 6-8 weeks.

Academic Credit for Research Rotations. Three credits will be earned for the first research rotation completed during the first semester in the doctoral program and three additional credits will be earned for the two research rotations completed during the second semester (Research Rotations, NSCI 7100). Grades are recommended by the supervising faculty members based on performance and assigned by the Director of the Neuroscience Program.

III. A.5. The Qualifying Examination

The SSE Graduate Program and the Neuroscience Doctoral Program require that all students pass a Qualifying Examination. The Qualifying Examination is an important milestone in a student’s progress toward the doctoral degree. The purposes of the Qualifying Examination are (1) to assess the depth of the student’s knowledge in neuroscience and (2) to assess the student’s ability to integrate and apply knowledge to answer a scientific question. These assessments are based on the quality of an original grant proposal prepared by the student.

Time Frame. Students are required to pass the Qualifying Examination by December 15 of their third year. A student who fails to meet the deadline must appear before the Doctoral Training Committee of the Neuroscience Program with the major advisor within 30 days after the December 31 deadline at which time the student’s future status in the Program will be decided.

Procedure for the Qualifying Examination. The student will schedule a meeting of the newly
formed Doctoral Committee in the summer of the second year or fall of the third year to discuss the Qualifying Examination. At that meeting, the general topic of the grant proposal will be agreed upon. The topic will typically be related to the student’s area of research. The student will have six weeks from the date of the meeting to submit the written version of the grant proposal to the Doctoral Committee. The student will not be able to discuss the scientific content of the grant proposal with anyone, including his/her advisor or fellow students, after this point. The grant proposal will be in the area of the student’s research, but will include a significant portion (1/3 to 1/2) that reflects original ideas of the student, that is, not derived from previous discussions with the student’s advisor. Two weeks after submitting the written document to the student’s Doctoral Committee, an oral examination will be administered by the Doctoral Committee based primarily on the written proposal.

The Written Grant Proposal. The grant proposal follows the format of an SF 424 R01 proposal, three years in duration and similar to the format of a major research proposal submitted to the National Institutes of Health. The Qualifying Examination includes the following: Title, Project Summary (one paragraph), Project Narrative (a few sentences), Specific Aims (one page maximum), Research Strategy (twelve page maximum), References (no page limit). It is not necessary to include information on the budget, facilities, or approvals for use of animal or human subjects. Margins can be no less than 0.5 inches on all sides and pages are to be numbered. Acceptable fonts are 11 point or larger for Arial, Helvetica, Palatino Linotype, or Georgia typeface.

The Qualifying Examination should be written as a clear and concise narrative. Background material should confirm that the student understands the system under study, as well as the approaches and techniques that will be employed to study that system. A sound rationale should be provided to support the experimental hypotheses. Most importantly, the proposed experiments should be designed to actually test the proposed hypotheses. Potential outcomes should reflect thoughtful interpretation of the expected results, however, potential limitations posed by the proposed experimental approaches also should be identified. A relevant and comprehensive reference section must be included as part of the proposal. For more detailed instructions on preparing a SF 424 R01 proposal visit https://grants.nih.gov/grants/how-to-apply-application-guide/format-and-write/write-your-application.htm.

The Oral Presentation. Thorough preparation through reading, self-examination, and integration lays the foundation for an effective oral presentation. The student should know the topic well, both at the focused level of a specialist and at the broader level of a generalist. During the oral presentation the student should demonstrate command of the subject matter and stimulate the interest of committee members in the topic. At the beginning of the presentation, the student can build self-confidence by residing in comfortable territory while
presenting a general introduction to the project. An effective proposal summarizes existing literature, identifies conflicts or gaps, and proposes experiments to address those issues. Over-presenting findings obtained by other researchers early in a presentation place the student in the position of defending data that are unfamiliar, wasting valuable time. As students proceed through the defense of their proposal all figures, graphs, and data that are presented should be fully explained. A well-designed oral presentation transforms the examination into a lively discussion when committee members engage the student and each other. Rather than an interrogation of the student, the discussion becomes an intellectual roundtable in which problems are solved, experiments are refined, and novel paths of investigation are identified.

**Requirements for Passing the Qualifying Examination.** To pass the Qualifying Examination, the student must receive no more than one negative vote from the members of the Doctoral Committee. Separate votes are taken for the written and oral components of the examination. Should a student fail either components of the examination, the Doctoral Committee may require re-examination on either or both parts, additional coursework, or may recommend dismissal from the Neuroscience Program.

**III. A.6. The Dissertation Prospectus**

This Dissertation Prospectus represents another important milestone in the student’s progress toward the degree, as it is the final requirement for admission to candidacy for the Ph.D. within the SSE Graduate Program. The Prospectus, like the Qualifying Exam, is thus a requirement of the SSE Graduate Program, as well as the Neuroscience Doctoral Program. Until a student’s Prospectus has been approved by the Doctoral Committee and the Dean of the SSE Graduate Program, the dissertation work has no official status.

**Time Frame.** The Dissertation Prospectus must be submitted to the student’s doctoral committee and defended orally at the end of the fourth year of study by August 15. A student who fails to meet this deadline must appear before the Doctoral Training Committee of the Neuroscience Program with the major advisor within 30 days after the August 15 deadline at which time the status of the student in the Neuroscience Program will be decided. The Dissertation Prospectus should be approved at least one year before a student plans to defend the dissertation.

**The Nature of the Dissertation Prospectus.** The Dissertation Prospectus is an outline of the work that the student is proposing for the dissertation research, to which the student’s Doctoral Committee gives its approval. The Prospectus provides a flexible framework for the student during the progress of the dissertation research. The Prospectus is a map, rather than a contract. In consultation with the student’s Doctoral Committee, later experiments can be added to or deleted from those originally proposed based on the outcomes of earlier experiments.

**Two Required Formats of the Prospectus.** The Prospectus must be prepared in two formats,
(a) a long format for submission to and approval by the student’s Doctoral Committee and
(b) a short format for submission to and approval by the Dean of the SSE Graduate Program.

a. The long-format Prospectus that is submitted to the student’s Doctoral Committee should include a scholarly review of the relevant literature, which also will serve as the foundation for the introduction to the dissertation. Commonly, students present findings from experiments already conducted during their graduate tenure. The Prospectus should also include detailed descriptions of the proposed experiments, including hypotheses, rationales, techniques, statistical analyses, experimental controls, and references. There is no prescribed length of the long-format version although the narrative should be clear and thorough.

b. The short-format Prospectus that is submitted to the Dean of the SSE Graduate Program should be approximately three double-spaced typewritten pages. The cover sheet should state the student’s name, department, the title of the proposed dissertation, and the names of the chair, and the other members of the Doctoral Committee. The introduction of the prospectus should contain a summary of earlier work on the problem. The body should include an orderly description of the plan for the investigation. The conclusion should clearly state the anticipated outcomes. Major sources should be included in a reference section that does not count toward the three-page limit.

Approval of the Prospectus. The student will submit the Prospectus to the Doctoral Committee, and approximately two weeks later meet for the purpose of approval of the Prospectus. The student should present background information, hypotheses, and experimental designs to the committee in a seminar format, which will be followed by a period of questions and discussion on the proposed research plan. The student should be prepared to respond to questions on the relevant literature, research techniques, and the feasibility and significance of the proposed research. While the format may appear similar to that of the oral Qualifying Examination, its purpose is to agree on a creditable research project for the student to pursue the dissertation research. For approval of the Prospectus, the student must receive no more than one negative vote from the members of the Doctoral Committee. If the Committee does not approve the Prospectus, the Committee will recommend to the student an appropriate course of action. Approval of the Prospectus must be obtained at least one year in advance of the dissertation defense. The student must petition the Neuroscience Doctoral Training Committee for approval if the time between approval of the Prospectus and defense of the dissertation is expected to be less than one year. After the members of the student’s Doctoral Committee have signed the proper SSE form, the student should obtain the signature of the Neuroscience Program Director, who will submit the signed form along with two copies of the short-format version of the Prospectus to the Dean of the SSE Graduate Program recommending approval of the Dissertation Prospectus. https://sse.tulane.edu/academics/graduate/forms-policies
III. A.7. Admission to Candidacy for the Ph.D.
Following successful completion of the required graduate coursework, the passing of the Qualifying Examination, and the approval of the Dissertation Prospectus, the student is recommended by the student’s Doctoral Committee to the Dean of the SSE Graduate Program for admission to candidacy for the Ph.D. The recommendation for admission to candidacy is made by the Neuroscience Program Director and must bear the signature of the Director before submission to the SSE Graduate Program.

III. A.8. The Dissertation
The written Dissertation represents the culmination of the research efforts of the student during doctoral training. A scholarly work of original research, the Dissertation reflects the student’s ability to perform independent research and to prepare that work for presentation in a professional manner. "The dissertation is the necessary demonstration that the candidate is worthy of taking a place among research scholars in the discipline. It must demonstrate not only mastery of the literature of the subject, but also the ability to carry on independent research that results in a genuine contribution to knowledge or an original interpretation of existing knowledge, and it must do so in a literate and lucid fashion." (SSE Graduate Program Catalog) https://tulane.app.box.com/s/vt0qe6vp53d1wyektfx7qavdgu1w69fx

Time Frame. The time frame for completion of the dissertation research and the writing of the Dissertation will vary somewhat from student to student, depending on the complexity of the project undertaken and the success of the experimental strategies used. The expectation of the Neuroscience Program is that students will complete all requirements within five years after entering the Program. The Dissertation Prospectus should be approved by the student’s Doctoral Committee at least one year before the completion of the Dissertation. The Application for Degree form, which can be found on the student’s Gibson Online homepage, should be submitted to the SSE Graduate Program several months before the expected graduation date.

The Written Dissertation. The Dissertation must be written in a form acceptable to the SSE Graduate office, which has detailed requirements for the format in which the document must be prepared. The Dissertation may be written as a free-standing document, incorporating an introduction, statement of the problem, materials and methods, results, discussion, and bibliography. However, if the student has submitted or is submitting the research for publication, the Dissertation may consist of an introduction and review of the literature, followed by individual chapters containing the material submitted for publication, and a final summary of the overall findings. Because it is in the best interests of the student to publish research in the peer-reviewed literature, the latter approach may be preferable, as findings will be prepared for publication, as well as for the Dissertation, increasing the likelihood of manuscript submissions before students depart the program.
**The Oral Defense.** When the student has completed a satisfactory draft of the Dissertation in consultation with the major advisor the student may schedule the final oral defense of the Dissertation. The student should submit the Dissertation to all members of the Doctoral Committee at least two weeks before the date of the oral defense. Printed copies of the Dissertation should be provided to committee members who prefer hard copies rather than electronic versions. Notice of the time and place of the oral defense will be announced to all members of the Neuroscience Program, who are invited to attend the public portion of the oral defense. During the oral defense, the student will present a brief seminar, providing background for the problem and summarizing the major findings. Following the public defense the audience will be dismissed and the members of the student’s Doctoral Committee will remain for additional questions. The student should demonstrate mastery of the subject area during the period of questioning by the Doctoral Committee. At the end of the questioning period, the student will be excused and the Doctoral Committee will vote on approval of the Dissertation. To pass the examination, the student may receive no more than one negative vote from the members of the Doctoral Committee.

**Submission of the Dissertation in Final Form.** Following the oral defense, the Doctoral Committee may make recommendations for revisions to the Dissertation. Once these revisions have been made, the student prepares the Dissertation in final form for submission to the SSE Graduate Program. A guide to the preparation of the Dissertation may be obtained from the SSE Graduate Program office that should be consulted by the student and the advisor during the writing of the final form of the Dissertation. If the Dissertation does not conform to the requirements of the SSE Graduate Program, it will not be accepted and the student’s graduation may be delayed as a consequence. The final copy of the Dissertation must be accompanied by an abstract of the dissertation research (not more than 350 words in length), and both the Dissertation and the abstract must be accompanied by appropriately formatted cover sheets, signed in black ink by the student and by the members of the Doctoral Committee.

https://sse.tulane.edu/academics/graduate/forms-policies

The deadline dates for dissertation submission vary by year, and are posted on the SSE Graduate Program academic calendar. On or before the deadline date for dissertation submission, the student is required to submit the following:

1. Original signed unbound copy of the Dissertation to SSE Graduate Program Office.
2. Original signed abstract of the Dissertation (≤ 350 words) to SSE Graduate Program Office.
3. Electronic copies of the Dissertation with signatures to ProQuest and The Digital Repository of the Tulane Library for official publication. Students pay ProQuest directly for copyrighting if desired. https://sse.tulane.edu/academics/graduate/forms-policies
IV. EVALUATION OF STUDENT PROGRESS

IV. A.1 Meetings of the Doctoral Committee
Students must meet with the members of their Doctoral Committees a minimum of four times during the period of study in the program as follows: (1) To plan the Qualifying Examination; (2) To orally defend the written version of the Qualifying Examination; (3) To orally defend the written Dissertation Prospectus; (4) To orally defend the written version of the Dissertation. Additional meetings of the Doctoral Committee should be called by the student and the advisor as needed. During meetings of the Doctoral Committee students receive advice on their ongoing research and keep committee members abreast of their research progress. The student and the Doctoral Committee should agree on when to begin writing the Dissertation, an objective best achieved if the Doctoral Committee receives updates on the student progress.

IV. A.2. Annual Review by the Neuroscience Program Faculty
Major advisors must prepare and submit a written summary of student progress for review at the annual meeting of the Neuroscience Program faculty convened in May of each year.

IV. A.3. Inadequate Progress and Remedies for Inadequate Progress
Timely attainment of milestones, including passing of the Qualifying Examination and approval of the Dissertation Prospectus, is expected. A student who fails to meet these deadlines must appear before the Doctoral Training Committee of the Neuroscience Program along with the major advisor within 30 days after the deadlines at which time the future status of the student in the Neuroscience Program will be determined. Deadline for passing of the Qualifying Examination is December 31 of the third year of study. Deadline for approval of the Dissertation Prospectus is May 31 of the fourth year of study.

IV. A.4. Dismissal from the Neuroscience Program
It is the goal and desire of the faculty of the Neuroscience Program that all students should complete the graduate program and earn the Ph.D. However, if a student consistently fails to meet required performance standards either of the SSE Graduate Program or the Neuroscience Program, the student may be considered for dismissal from the program.

V. PROFESSIONAL DEVELOPMENT

V. A.1. Attendance at Seminars, Trends, and Other Events
To function effectively, scientists must keep abreast of current developments in the field. Regular attendance at weekly Brain Institute Seminars, Trends in Neuroscience meetings, and monthly Downtown-Uptown Neuroscience Krewe (DUNK) sessions allows students to learn the skills of engaged listening and critical thinking that are required for scholarly evaluation of
contemporary research in neuroscience. Additionally, students are encouraged to attend seminars and colloquia sponsored by departments and programs outside Neuroscience on both campuses, as well as those offered by other local and regional institutions.

V. A.2. Presentation of Research in Local Settings
Whatever career path a student may plan to pursue – in academia or in industry or other professions – the ability to clearly present one’s work in an oral format will be required. To learn and perfect this critical skill, students should be prepared to present their research during the course of their progress toward the Ph.D. Confident public speaking ability is attained through repetition and practice, and is easiest to achieve before friendly audiences. Students have opportunities to present their research findings at meetings of their home laboratories, colloquium series in their departments, monthly sessions of the *Downtown-Uptown Neuroscience Krewe* (DUNK), and annual poster sessions held by the School of Science and Engineering and the Health Sciences Center. Additionally, doctoral students in their third year and beyond are required to give research presentations at the annual Brain Institute Retreat.

V. A.3. Presentation of Research at Regional and National Conferences
Regular presentation of one’s research at regional and national meetings is an essential part of career development, both for students and for active scientists. For students especially, conference attendance provides a forum at which student can make contacts that may be important in securing post-doctoral positions or employment after graduation. Conference attendance is a key pathway to establishing a professional identity among one’s colleagues. Both poster presentations and oral presentations have merit, and certain kinds of data lend themselves better to one or the other type of presentation. While conference attendance can be expensive, the SSE Graduate Program, the Graduate Studies Student Association (GSSA), and the Neuroscience Program offer financial support once per year to students who attend and present as first authors at national conferences. In addition, many scientific societies provide travel funds that are awarded on a competitive basis to students who present their research findings. Travel awards usually are posted in pre-registration announcements from the sponsoring societies. [https://sse.tulane.edu/academics/graduate/forms-policies](https://sse.tulane.edu/academics/graduate/forms-policies)

V. A.4. Publication of Research in Peer-Reviewed Journals
Even more important than presenting research findings at scientific meetings is the necessity for publishing in peer-reviewed scientific journals. The journals targeted for submission is an important decision and should be made in consultation with the major advisor. Students should prepare their results for publication as they obtain them, rather than waiting until the end of their training when faced with writing the Dissertation and transitioning to new positions. Under these circumstances dissertations are written but manuscripts often are not. Therefore, it
is to students’ advantage to submit research findings for publication in a timely manner.

**V. A.5. Training in Research Ethics**

*Research Conduct.* The ethical conduct of scientific research is essential for students as well as established scientists. Students are required to participate in the *Responsible Conduct of Research* seminar course offered by Tulane University Research Compliance Office during the fall semesters. Fabrication, falsification, and plagiarism constituted research misconduct that may subject the student to dismissal from the program, as well as sanctions by funding agencies.

- **Fabrication** is making up results and recording or reporting them.
- **Falsification** is manipulating research materials, equipment or processes, or changing or omitting data or results so that research is not accurately represented in a research record.
- **Plagiarism** is the appropriation of another person’s ideas, processes, results, or words without giving appropriate credit, including those obtained through confidential review of other’s research proposals and manuscripts.
- Research misconduct does not include honest error or honest differences of opinion.

*Subject Protection.* Protection of subjects during the conduct of research is a mandatory requirement of contemporary science. Students who plan to conduct research with non-human subjects must follow procedures set forth by the Tulane University Institutional Animal Care and Use Committee (IACUC) and complete training relevant to the species under study [https://research.tulane.edu/iacuc](https://research.tulane.edu/iacuc). Students who will conduct research with human subjects are required to complete CITI training (Collaborative Institutional Training Initiative), which is offered by the Tulane University Internal Review Board (IRB) [https://research.tulane.edu/hrpo](https://research.tulane.edu/hrpo). Additionally, it is the responsibility of doctoral students and their advisors to be certain that students read approved protocols and understand the ethical issues relevant to their studies.

*Employee Protection.* As employees of Tulane University, doctoral students should be aware of the occupational and environmental health and safety policies set forth by the Office of Environmental Health and Safety (OEHS) intended to promote safe work practices at all times. It is the responsibility of doctoral students to complete safety training appropriate to the risks in their work environments and the responsibility of laboratory supervisors to document the completion of training. Visit the OEHS website for details. [https://risk.tulane.edu/oehs](https://risk.tulane.edu/oehs)

**V. A.6. Training in Relevant Skills**

In addition to the training opportunities that the Neuroscience Program provides in the theory and practice of research in the neurosciences, students are encouraged to take advantage of opportunities to develop other skills that are often essential to successful careers in science. These include skills in the writing of grant proposals and teaching at the college level.
Communication Skills. Students interested in formal training in grant proposal writing should complete Graduate Communications (NSCI 6660, 3 credits), an elective course that provides intensive training in techniques of contemporary proposal writing for submissions to federal, state, and private funding agencies, as well as in techniques on oral and poster presentations. Additionally, students should attend workshops sponsored by the University on grant proposal writing that are presented every other year by professional external consultants.

College Teaching Skills. Some graduates earning the Ph.D. in Neuroscience will assume academic positions in which teaching will be an important component of their professions. College Teaching Pedagogy (NSCI 7240, 3 credits) and College Teaching Practicum (NSCI 7241, 1-4 credits) prepare doctoral students to teach at the college level using contemporary educational approaches. Students interested in college teaching in their futures should consider these courses as a part of their formal doctoral training that will facilitate their transition into the academic profession and increase their competitiveness on the academic job market.

VI. STUDENT MATTERS

VI. A.1. Student Representatives

Selection Process. The doctoral students will elect two Student Representatives to the Neuroscience Program each year. Nominations will be solicited by the standing Representatives in November and elections will be held in December by email ballot. Students beyond their first year in the program residing in permanent laboratories can be nominated. Because both campuses must be represented nominees who receive the highest vote totals from each campus will be elected by popular vote for one-year terms running from January 1 to December 31.

Responsibilities. The duties of the Student Representatives include the following activities:
- Meet with the Director of the Neuroscience Doctoral Program monthly to offer suggestions to improve the student experience, present concerns regarding issues that affect students, report on beneficial features of the program, provide updates on student-organized events.
- Solicit nominations and conduct voting to select one student-hosted speaker to present each semester at Tulane Brain Institute seminars.
- Propose and organize annual events that promote the professional career development of current students.
- Organize annual service events for graduate students of the Neuroscience Program.
- Assist the office staff of the Tulane Brain Institute with organizing and hosting various events throughout the year including the annual interviews of applicants for incoming classes, the Tulane Brain Institute spring retreat, and other events sponsored by the Institute.
- Serve as a resource for students with questions or concerns about the Neuroscience Program.
- Form student committees that can provide assistance to the Representatives with the various activities described above.
- Assist in familiarizing newly-elected students with their duties as Representatives to the Neuroscience Program.

VI. A.2. Student-Faculty Lunches
The Take a Professor to Lunch program allows doctoral students to interact personally with faculty members in order to identify potential rotation advisors or Doctoral Committee members, or simply to discuss a topic of interest related to neuroscience. The faculty member must be a member of the Tulane Brain Institute and cannot be the host student’s major advisor. Student-faculty lunches are especially valuable for newer students to learn about faculty members, their research programs, and their career histories. Each student can host one lunch per semester. Students planning to host faculty member(s) should contact the Neuroscience Program Office for request forms and additional details regarding venues and reimbursements.

VI A.3. Student Affairs
Doctoral students in Neuroscience are encouraged to take advantage of the wide-range of services offered by the Office of Student Affairs related to student health and welfare. As explained on their website, “At the heart of our work is a desire to connect our students with resources and programs that nurture their growth, challenge their perspectives, and expand their worldviews. Together, we offer housing, health, support, and counsel. We provide outlets for recreation, venues for understanding, and opportunities for resolution.”

https://studentaffairs.tulane.edu/