

Handbook for Ph.D. Students in
Neuroscience

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Introduction

This handbook provides information for students enrolled in the Interdisciplinary Doctoral (PhD) Program in Neuroscience at Utah State University. The purpose of the handbook is to convey program expectations and to summarize information from several sources, including:

the General Catalog (<http://catalog.usu.edu/>),
the School of Graduate Studies (<http://rgs.usu.edu/graduateschool/>).

Please consult original sources as necessary to clarify or supplement the information here. The faculty in the Neuroscience Program continually reviews and, as appropriate, refines its programs and operations. Therefore, the requirements, policies, and regulations outlined in this handbook may change at any time. Change may take place before a new handbook is issued, and students must adhere to these changes. Although the program attempts to notify students through posting of information about important changes, it is the student's obligation to ascertain current rules, regulations, financial aid opportunities, deadlines and procedures, program requirements, and the like.

Neuroscience Program Overview

The primary goal of the Interdisciplinary Doctoral Program in Neuroscience is to provide students with a strong educational and research foundation in cellular, cognitive, and behavioral neuroscience. Students will apply critical concepts in neuroscience to understanding normal and disordered processes of sensation, movement, cognition, language, and communication across the lifespan. This goal will be accomplished through a core set of neuroscience courses, advanced electives, and laboratory experiences.

Students in the Neuroscience PhD Program will learn the theoretical, conceptual and methodological issues involved in neuroscience research within one of three emphasis areas: Educational Neuroscience, Translational Neuroscience, or Lifespan Neuroscience. In their courses, students will develop an appreciation of the cognitive factors that influence patterns of brain activation in human and animal models, and they will learn about the effects of disease on brain anatomy and integrity. In their lab rotations, students will gain hands-on experience with data acquisition, data processing, statistical analysis and visualization techniques related to research on brain structures and functions. Upon completion of the program, students will be prepared to design and conduct state-of-the-art neuroscience research that employs a variety of neuroimaging methods and that contributes to the solution of educational, medical, social, and vocational problems.

The Neuroscience PhD program is strongly interdisciplinary, involving faculty in the departments of Psychology, Biology, Kinesiology and Health Sciences, Communicative Disorders and Deaf Education, Engineering, Instructional Technology and Learning Sciences, and Human Development and Family Studies. The faculty are actively engaged in a wide variety of research in the areas of information processing, memory, decision-making, language development, cognitive development, motor development, normal aging, as well as neurodevelopmental, neurogenic and neurocognitive disorders.

Students in the neuroscience doctoral program are expected to align themselves with a focus in one of the aforementioned emphasis areas. Currently, these include *Translational*

Neuroscience, Educational Neuroscience, and Lifespan Neuroscience.

Translational Neuroscience

This focus area emphasizes understanding the signal transduction pathways underlying neurophysiological function in normal and disease states at the molecular, cellular, tissue, system, and organism levels. Students will understand trans-disease processes related to core brain functions that are required for appropriate behavioral regulation, attention, memory, and decision-making. Translational research experiences will combine approaches in genetics, biophysics, electrophysiology, functional imaging, and behavioral analyses in order to explore the mechanisms underlying normal and aberrant neuronal function in a variety of systems across the lifespan. Students will explore the use of animal models as a means for examining underlying causes of neurodevelopmental and neuropsychological disorders starting at the genetic level, working up through fundamental brain functioning, and then observing how these processes are impacted by individual experience throughout the lifespan. Students in this focus area will also understand neurocognitive and neurophysical abnormalities that are the source of a wide range of human disorders including depression, schizophrenia, autism, attention deficit disorder, anxiety, drug addiction, communication disorders, and others.

Educational Neuroscience

This focus area is designed to apply the principles of behavioral, cognitive, and biological neuroscience to core problems in education related to cognition, socialization, learning, and/or teaching. Students will explore the anatomical and functional neurological mechanisms that contribute to cognition, language, and literacy development, as well as the relationships between neural activation patterns and children's performance on cognitive, linguistic, listening, communicative, and literacy tasks. This focus area is also designed to help students understand the neurophysiological, neurobiological, and environmental contributions to sensory disorders, intellectual disabilities, communication disorders, learning disabilities, autism spectrum disorders, and motor disorders in children. Students will learn how to combine behavioral experimentation methods with neuroimaging methods (Near Infrared Spectroscopy, EEG, eye-tracking, and pupilometry) to examine processes involved in accessing, manipulating, storing, retrieving, and classifying information and associated changes in activation patterns across micro- and macro-brain structures during information processing tasks. New advances in translational research and research on the principles of neuroplasticity will lead to greater understanding of the best ways to promote brain changes through language, literacy, and STEM education. Research on educational neuroscience should lead to innovative perspectives on the integration of basic research and educational practices and to the development of sound education policies.

Lifespan Neuroscience

This focus area will emphasize the study of changes in central and peripheral nervous system structures from infancy to late adulthood with corresponding effects on behavior in domains such as cognition, language and emotion. This focus area includes the neuroscience of movement and how the motor system interacts with sensory, perception, and cognitive systems. Normative changes in attention, memory, executive functions, and other cognitive processes will be juxtaposed with pathological conditions. Areas of study include normal aging; language and communication disorders; movement variability; movement

timing/sequences; motor planning; motor learning; and functional recovery in populations with disorders and disabilities such as aphasia, apraxia, Alzheimer's disease, and other dementias. Students may focus on neuropsychological assessment of speech, language, listening, and cognitive-communicative functions; variability across different linguistic populations; and language treatment following stroke, traumatic brain injury, neurosurgery, and degenerative disorders. Course work and research experiences may examine the role of genes, environmental factors, and gene-environment interactions in normal aging, disease-free survival and longevity, as well as examining factors that increase risk for depression and disease states that occur in late-life. In addition to foundational courses in neuroscience, seminars will be offered that are specific to each specialty area.

The Interdisciplinary Doctoral Program in Neuroscience is a full-time graduate program. All students will complete a group of core neuroscience courses, as specified below, as well as variety of elective courses in their area of emphasis. Electives must be determined in consultation with the student's program committee. In addition to coursework, students are also required to engage in laboratory experiences with their mentor(s) and to produce finished products (published papers and conference presentations) illustrating their understanding and capability to apply key concepts and skills. **Students entering with a baccalaureate degree are expected to complete the Ph.D. within 5 years. Students entering with a Master's degree are expected to complete the Ph.D. within 4 years.** Failure to make appropriate progress toward completing the program within these timelines can result in dismissal from the program.

Students will be assigned a faculty advisor at the time they are admitted to the program. This faculty member will remain the student's primary advisor through the student's time in the program. Each student's progress in the program will be reviewed annually by all program faculty in a student review meeting. Students will receive written feedback on their progress following this meeting. The feedback will address progress in the areas of:

- Research skills and progress
- Progress toward completion of the program
- Didactic coursework
- Assistantship performance
- Other accomplishments and/or concerns

All students are required to pass a comprehensive exam before advancement to candidacy for the Ph.D. degree. Students entering with a baccalaureate must pass the comprehensive exam prior to the beginning of their 4th academic year in the program. Students entering with a Master's degree must complete the comprehensive exam prior to the beginning of their 3rd academic year in the program.

In addition to coursework, students are also required to engage in research to produce finished products illustrating their understanding and capability to apply key concepts and skills. **Involvement in research above and beyond the Second Year Project and Dissertation projects is required of all students.** Involvement in such research is evaluated during the yearly evaluation process.

Prior to receipt of the PhD, students complete a series of **Professional Milestones** including:

- presenting research at a professional meeting,

- writing and submitting a peer-reviewed paper,
- participating in a grant-writing experience,
- and participating in a teaching experience.

Requirements for the program are described in further detail in the sections that follow.

Timeline

To assist in planning, checklists are available from the Graduate School:
<http://rgs.usu.edu/graduateschool/forms/>

1. Graduate Supervisory Committee (GSC) Formed and Approved

Graduate School policy suggests that **PhD Committees** should be formed by the end of the **third semester**. The committee will consist of five members with at least one member from outside student's home department. The chairperson and two members of the committee must be members of the Neuroscience faculty. A faculty member outside the student's home department may act as co-chairperson. Only one member of the committee can hold the "adjunct" title.

Although many student-professor relationships last throughout the degree program, either the student or the faculty member may terminate the relationship without repercussions. A student may change major professors if the change is agreed upon by all parties. Should there be some concern about the changes made, the transition should be mediated by the program chair and/or department head. After a change in advisement is made, the student is expected to establish another mentoring relationship within six months. Failure to do so will compromise a student's progress in the program and may lead to the recommendation of termination of the program based on the student's inability to make satisfactory progress.

A faculty member is not obligated to students, other faculty, or administration to perform any activities during noncontract or off-time periods, including summer months. A faculty member who chooses to perform professional duties during off time (e.g., noncontract, vacation, holiday periods), does so on a completely voluntary basis and will not be compensated for such activity in any way.

Students are urged to consider the composition of their committees so that the committee members (and chairperson) can provide strength to the conceptual thrust of the dissertation and that specialized assistance in the area of research design and data analysis is available. The GSC is responsible for guiding the student in completing appropriate course work and dissertation. The GSC will define course work requirements for each student to meet individual needs.

Students need to choose a supervisory committee as soon as possible. Students are admitted to the program to work with a specific chairperson. Other members of the committee will be agreed upon jointly by student and chairperson, but the student will approach the other potential committee members to invite them to serve. In the event a student has difficulty in defining or obtaining a committee, the program chairperson may be consulted at any time.

Once the committee has been chosen, the student must complete and submit to the department a committee form to officially constitute the committee. Forms are available at: <http://rgs.usu.edu/graduateschool/forms/>

2. Program of Study Form Approved and Signed by Graduate Supervisory Committee

Once the supervisory committee has been formed, it is suggested that the student and committee meet early to develop the Program of Study. When approved, the program of study becomes the program for which the student will be held accountable. Changes to the program of study must be approved by the student, major professor, and department head.

3. Second Year Project

Students who did not complete a master's thesis must complete a **Second Year Project during the first 5 semesters** of the program. **Failure to do so in a satisfactory manner may result in dismissal from the program.** This project is developed with the student's primary faculty mentor starting early in the first semester. More information about this project is provided below.

4. Comprehensive Exam

Students are required to pass a comprehensive exam prior to advancement to doctoral candidacy. **Students entering with a baccalaureate must pass the comprehensive exam prior to the beginning of the 4th academic year in the program. Students entering with a Master's degree must pass the comprehensive exam prior to the beginning of their 3rd academic year in the program.** Comprehensive exams must be submitted no later than 30 days prior to these deadlines so that faculty members will have adequate time to grade the submission before the deadline expires. Students failing the comprehensive exam or failing to pass the exam by the deadlines outlined above will not advance to doctoral candidacy and may be dismissed from the program. More information about this requirement is provided below.

5. Dissertation Proposal Developed in Conjunction with the Graduate Supervisory Committee Chairperson

Early in the student's program, informal preparation (e.g., selection of an area of research interest) should begin on the dissertation proposal. This is done by meeting with the GSC chairperson to define a research problem and develop the proposal.

Preliminary research should begin as soon as is feasible and drafts of sections should be submitted periodically to the major professor for critiquing. Primary responsibility for development of the dissertation rests with the student and the major professor, but individual committee members should be consulted on sections that involve their special expertise.

When the chairperson believes that the dissertation proposal is in defensible condition, approval is given to schedule the defense. In general, **proposals are limited to 30 pages.**

6. Dissertation Proposal Formally Reviewed in a Meeting with the Graduate Supervisory Committee

The student will initiate a proposal meeting with the full committee. During the meeting, the committee will make final input regarding requirements for the research. The committee has an obligation to assure the proposed research, when completed, will be a sufficient contribution to new knowledge. **The student is responsible** for obtaining the statistical and research expertise necessary to carry out the research and is expected to cover all costs of the research where projects are not specifically funded.

7. Approved Dissertation Proposal with Completed Graduate Student Proposal Cover Sheet Placed in Student's File

When the proposal is accepted and the Proposal Cover Sheet signed by the GSC, a copy is then placed in the student's file.

If human subjects are involved in the study, approval by the University's Institutional Review Board (IRB) for Human Participants must be obtained **in advance of collecting data**. To do this the student completes the "Application for Review of Research Using Human Subjects" form (available on-line at <http://irb.usu.edu>). The student's proposal must be approved by his/her committee prior to submitting the research to the IRB for review. The student's GSC chairperson must be listed as the principal investigator on the IRB application and must sign all application forms.

If research animals are involved in the study, approval by the University's Institutional Animal Care and Use Committee (IACUC) must be obtained **in advance of collecting data**. To do this the student completes the IACUC Application form (available on-line at <http://iacuc.usu.edu>). The student's proposal must be approved by his/her committee prior to submitting the research to the IACUC for review. The student's GSC chairperson must be listed as the principal investigator on the application and must sign all application forms.

8. Application to Candidacy Form Completed

This form must be submitted to the School of Graduate Studies **at least three months prior** to the scheduled dissertation defense date. This form may **not** be submitted until all other program requirements have been completed, **including successful completion of the Specialization Area specific comprehensive exam**. The form can be obtained on-line at <http://rgs.usu.edu/graduateschool/forms/>. Prior to being admitted to the candidacy students are required to have:

- Completed the majority of their coursework
- Successfully defended their dissertation proposal
- Successfully passed their comprehensive examination

9. Dissertation Research Conducted

As in the writing of the proposal, the actual research is conducted under the primary supervision of the chairperson, with input along the way from other members of the GSC as needed. Each step of the research should be checked by the student and the chairperson. The research should conform to the requirements of the proposal, to sound methodological practice and to the desires of the committee. The Graduate School offers a USU Publication Guide for Graduate Studies to aid in the writing of the dissertation that is located on the forms page: <http://rgs.usu.edu/graduateschool/forms/>.

10. Dissertation Written to the Satisfaction of the Graduate Supervisory Committee Chairperson

The chairperson will supervise the student in writing and rewriting the final product until it is ready to present to the full committee. Other committee members may be asked for help or input as appropriate but should not be asked to review the product until it has first been approved by the chairperson. The student, not the chairperson or the committee, is responsible for writing the final product. Therefore, the student should expect to continue making revisions until the product is adequate and should not expect the chairperson to do the rewriting.

11. Dissertation Defense

When the chairperson is satisfied that the manuscript is in excellent condition, the student arranges a public meeting where the completed research is presented and defended. The appointment for examination form (available online at <http://rgs.usu.edu/graduateschool/forms/>) is signed by the entire committee and must be submitted to the graduate school **at least 10 working days before the defense**. Each committee member must receive a copy of the dissertation at least **four weeks** before the scheduled defense. Committee members who believe that the dissertation is not ready for defense will notify the student and the major professor prior to the oral examination. The student and major professor may postpone the defense in order to make revisions in the thesis or dissertation.

The oral examination is a defense of a final document. Minor changes may be made following the defense. If major changes are needed, another defense will be scheduled for the new document. The defense should not be used as an opportunity to discuss the research and propose changes in the dissertation. Following the final defense, the final copy of the dissertation is prepared embodying changes approved by the committee members. It is then signed by the committee members.

After signatures are obtained from the entire committee, the final paper must have formatting approval by a departmental reviewer, after which it is submitted electronically to the Graduate School Office. Many students elect to personally pay a formatter. If students do not do this, they are responsible for all proofreading and formatting.

Approval of a completed dissertation requires a unanimous vote of the committee. If unanimous approval is not obtained, the Dean of the School of Graduate Studies must resolve the matter.

Second Year Project

Students entering with a baccalaureate degree must complete a **Second Year Project during the first 5 semesters** of the program (fall semester of the 3rd year). **Failure to complete the project in a satisfactory manner may result in dismissal from the program.** This project is developed with the student's primary faculty mentor starting early in the first semester.

The project proposal will include a review of the relevant literature and propose a novel research question. Starting in 2018, the proposal will consist of an Introduction, Methods, and Expected Results/Interpretation sections (20 pages double spaced max).

Semesters 1, 2, Summer:

With the guidance of the primary mentor, the student will learn the research skills and the literature related to the 2nd year research project.

Semester 3:

Students will present (15 min) their proposal to their committee. An abstract will be provided to all neuroscience faculty and students via the meeting organizers.

Semesters 3, 4, & Summer:

Students will complete the project and prepare a publication-quality paper (approximately 40 double-spaced pages) with feedback from the primary mentor.

Semester 5-6:

Students will present (30 min) the final paper to their committee. All neuroscience faculty/students should be invited. The paper and presentation will be evaluated by the student's committee. Students will receive one of the following grades:

1) Pass

2) Conditional Pass

-Appropriate revisions must be submitted within 2 weeks to Pass

-The revised paper should include a 1-page response to the previous reviews that details how concerns in the previous version were addressed

3) Fail

- Student will be dismissed from the program

Comprehensive Exam

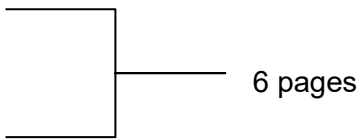
Students are required to pass a comprehensive exam prior to advancement to doctoral candidacy. **Students entering with a baccalaureate must pass the comprehensive exam prior to the beginning of the 4th academic year in the program. Students entering with a Master's degree must pass the comprehensive exam prior to the beginning of their 3rd academic year in the program.** Comprehensive exams must be submitted no later than 30 days prior to these deadlines so that faculty members will have adequate time to grade the submission before the deadline expires. Students failing the comprehensive exam or failing to pass the exam by the deadlines outlined above will not advance to doctoral candidacy and may be dismissed from the program.

Comprehensive Exam Details

The exam must be completed without the aid of others (e.g., student's advisor, prior instructors, peers).

The exam consists of a 7-page (excluding references) single-spaced research proposal. The proposal should review the relevant area of research, identify a significant gap in knowledge in that area, and propose a novel, interesting, well-justified, and methodologically sound experiment to fill that gap.

The proposal must include the following sections:

- 1) Specific Aims (1 page)
 - 2) Background and Significance
 - 3) Methods
 - 4) Expected Results and Interpretations
 - 5) Potential Pitfalls and Future Directions
- 
- 6 pages

The exam is graded by at least 3 specialization faculty members. Students will receive one of the following grades:

1) Pass

2) Conditional Pass

-Appropriate revisions submitted within 1 week may earn a Pass

-The revised proposal should include a 1-page response to the previous reviews that details how concerns in the previous version were addressed

3) Fail with Retake

- Students who receive a grade of Fail with Retake on their first comprehensive exam may request a new set of topics be assigned for the purpose of a retake

- Only one retake will be permitted

- Second comprehensive exam must be completed within 3 months of receiving the Fail with Retake decision.

- Should the student not meet this deadline, the grade will be changed to Fail and the student will be dismissed from the program

4) Fail

- Student will be dismissed from the program

Course Work

Students entering the program with a bachelor's degree will be required to earn a minimum of 64 credits for graduation. Students entering with a master's degree must earn a minimum of 44 credits. Students will complete 20 hours of core neuroscience courses, 11 hours of statistics, research design, and research methods courses, 21 hours of electives, qualifying exams, and 12 hours of dissertation credits for a total of 64 credits post bachelors.

Course Prefix and Number	Title	Credit Hours
Required Courses	PSY 6200: Fundamentals of Neuroscience I	3
	PSY 6210: Fundamentals of Neuroscience II	3
	PSY 7110: Cognitive Neuroscience	3
	PSY 7830: Mechanisms of Neuropsychiatric Diseases	3
	PSYC 7090: Program Seminar (students are expected to attend ProSeminar sessions any semester they are enrolled, but only receive credit for 2 semesters)	2: 1 per semester for 2 semesters
	PSY 7140: Methods in Neuroscience (may be repeated for elective credit)	3
	BIOL6750/COMD7830/ITLS 6870/PSY7820: Special Topics (may be repeated for elective credit)	3
	PSY / EDUC 6570: Introduction to Educational and Psychological Research or BIOL 5610 – Animal Physiology Laboratory and ADVS 6070 – Principles of Laboratory Animal Research	3
	PSY / EDUC 6600: Research Design and Analysis 1 or STAT5200: Design of Experiments	3
	PSY / EDUC 7610: Measurement, Design and Analysis 2 or ITLS6760/EDUC 7700 Grant Writing	3
	USU 6900: Research Integrity	0
	PSY 7970/FCHD 7970/PEP 7970/BIOL 7970 (or other 7970): Dissertation	12
Sub-Total		41

Course Prefix and Number	Title	Credit Hours
Electives (23 credits)		
Examples of general course electives		
	BIOL 4450: Neurobiology	3
	BIOL 5210: Cell Biology	3
	BIOL 5970: Protein Structure/Function and Purification	3
	BIOL 6190: Molecular genetics	3
	BIOL 6280: Animal Molecular Biology	3
	FCHD 7033: Research Methods 3: Dyadic and Longitudinal Data Analysis	3
	PSY 7670: Literature Reviews in Education and Psychology	3
	PSY 7900/COMD 6900/PEP 7900/: Independent Study	Var
	PSY 7910/COMD 7910/PEP 7910/FCHD 7060/BIOL 6910: Independent/Advanced Research	Var
	PSY 7140: Methods in Neuroscience	3
	BIOL6750/COMD7830/ITLS 6870/PSY7820: Special Topics	3
	PSY 7780: Multivariate Statistical Analysis I	3
	PSY 7790: Multivariate Statistical Analysis II	3
	PSY 7810: EEG Methods	3
	STAT 5100: Linear Regression	3
	STAT 6100: Advanced Regression	3
Examples of focus area electives		
Translational Neuroscience		
	BIOL6323: Computational Biology Research	3
	BIOL6390: Genes and Behavior	
	BIOL6600: Comparative Animal Physiology	
	PSY 7100: Biological Basis of Behavior	3
	COMD 7420: Electrophysiology	3
	PSY 6670: Neuropsychopharmacology	3
	PSY 6680: Neuroeconomics	3
	PSY 7820: Neuropsychology: Principles and Assessment	3
	SPED 7820: Research Instrumentation in Neuroimaging	3
	PSY 6650: Theories of Learning	3
	PSY 7740: Behavioral Pharmacology	3

Course Prefix and Number	Title	Credit Hours
		3
Educational Neuroscience		
	PSY 6530: Developmental Psychology	3
	FCHD 7520: Development in Childhood	3
	PSY 6650: Theories of Learning	3
	PSY 6600: Cognition and Instruction	3
	ITLS 6870: Cognitive Load Theory	3
	PSY 7110: Advanced Theories of Cognitive Psychology	3
	PSY 7820: Neuropsychology: Principles and Assessment	3
	SPED 7820: Multidisciplinary Seminar on Language and Literacy	3
	SPED 7820: Research Instrumentation in Neuroimaging	3
		3
Lifespan Neuroscience		
	FCHD 7920: Aging Mind – Aging Brain	
	PSY 7270: Lifespan Psychopathology	
	PSY 7820: Neuropsychology: Principles and Assessment	3
	COMD 6130: Neural Bases of Cognition and Motor Speech Disorders	3
	COMD 6120: Adult Language Disorders	3
	COMD 6140: Dysphagia	3
	PEP 6850: Neural Aspects of Rehabilitation I and II	3
	PEP 6860: Motor Development	3
	PEP 6840: Fundamentals of Motor Behavior	3
	PEP 7870: Advanced Motor Behavior Seminar	3
	PEP 7820: Variability and Dynamical Systems	3
		3
Sub-Total		23
	Total Number of Credits	64

Professional Milestones

Prior to the final defense of the dissertation, student must complete the 3 professional milestones described below. Completion of milestones is verified by the faculty mentor and/or dissertation committee and documented on the yearly evaluation.

1) External Professional Presentation

All students must serve as the presenting author of a presentation (poster session or oral presentation) at an appropriate external professional conference.

2) Peer-Reviewed Paper

Each student will make significant contributions to a data-based paper that is submitted for publication in a peer-reviewed journal. The preference is for students to graduate with at least one first-author publication. However, given the time constraints of some types of research, there may not be time to design a study, collect data, analyze it, submit a paper, revise it, and get a formal editorial decision during a doctoral program. In such cases, students would not be expected to have a first-author publication before graduation. Most students in the program serve as an author on multiple such articles and generally serve as the lead author on at least one publication.

3) Teaching

Students will graduate from the program with critical competencies and experience planning and teaching university courses related to their focus area. Each student will have a teaching experience that is appropriate for their discipline. The preference is for students to TA for at least one course and to take primary responsibility for teaching an undergraduate course. However, the faculty realizes that this is outside the norm for some departments.

4) Grant Writing

Students are expected to complete a grant-writing experience in which they write and submit a student research grant to an external agency or assist their mentor or another faculty member with the preparation of an external research grant. The preference is for students to write and submit an NSF or NIH doctoral dissertation grant. However, the faculty realizes that not all disciplines conduct the type of research that would be funded by these agencies. In those cases, students should assist faculty in writing an external grant and/or should write a grant to an external agency such as a foundation.

Additional Policies and Procedures

Review of Students' Academic and Professional Progress

At the end of each academic year, program faculty will meet privately and review students' progress toward completing program requirements and professional development. Students will receive written feedback on their progress every year; a copy of the form is included as an Appendix to this Handbook. The feedback will address progress in the areas of:

- Research skills and progress
- Progress toward completion of the program
- Didactic coursework
- Assistantship performance
- Other accomplishments and/or concerns

Students who fail to maintain acceptable progress may be dismissed from the program

E-mail

It is expected that all students will maintain an e-mail account to receive critical program, departmental, and university information. Each graduate student should inform the program director of changes to their e-mail address .

Changing Focus Area

Should a student wish to change from one focus area to another (e.g., Translational Neuroscience to Lifespan Neuroscience), the application must be approved by the program director, the chairperson of their graduate committee, and by the Neuroscience faculty. Students desiring to transfer may be asked to follow all of the normal admission procedures, deadlines, etc.

Reasons for and Notification of Dismissal

"The student's department and the School of Graduate Studies monitor the progress of graduate students. For continued participation in a graduate program, a student must complete requirements in a timely manner. In reviewing a student's progress, several factors will be considered, including demonstrated ability to develop a [research] proposal, independence in the conduct of research, performance on comprehensive examinations, GPA, and special program requirements. Satisfactory progress also involves maintaining the standards of professional ethics and integrity expected in the student's discipline." (USU General Catalog).

The Neuroscience Program strives to maintain high standards in all of its programs. In keeping with this goal, graduate students are expected to maintain: (1) high academic standards of achievement; (2) consistent and timely progress towards the completion of degree requirements; and (3) high standards of personal conduct and behavior that will reflect positively upon the program and the profession. To assist in maintaining such standards, any one or more of the factors listed below will result in a student being considered for dismissal.

1. Possessing a grade point average less than 3.0 in USU graduate courses (matriculated or provisional) during two consecutive semesters.
2. Any of the following: (1) any characteristics which would, in the judgment of the faculty, make the student unsuited to engage in a career in neuroscience; (2) conduct unbecoming a professional neuroscientist; or (3) failure to comply with departmental, college, and university regulations or procedures.
3. Failure to continuing making adequate progress on programmatic requirements (e.g., excessive delay in forming a supervisory committee or completing research requirements) represented by a score of 1 in any area on the annual evaluation.
4. Failure to complete the 2nd year project or to pass the comprehensive exam.
5. Academic dishonesty or research misconduct including cheating, falsification of information, and plagiarism.

Procedures for Dismissing a Student From the Neuroscience Program

The following procedures are consistent with those outlined in *The Code of Policies and Procedures for Students at Utah State University*:

<https://studentconduct.usu.edu/studentcode/index>.

- 1) Upon the recommendation of a student's program committee, the Neuroscience faculty hold a vote to recommend dismissal of a doctoral student. Program committees must ensure they are recommending dismissal of a student for reasons outlined in the appropriate program handbook and / or as stated in university policies. Program committees must also ensure due process in any dismissal procedures.
- 2) This vote may be conducted either at convened faculty meeting or via e-mail. Not all faculty need to vote and a simple majority of those voting is needed to uphold the dismissal recommendation. If voting occurs outside of a convened meeting, faculty must vote within 2 working days of the recommendation being put forward for a vote.
- 3) Assuming support for the dismissal, the Director of the Neuroscience Program will write a memo to the Dean of Graduate Studies recommending the student be dismissed from the Neuroscience PhD program. Note that this dismissal would preclude a student from requesting a transfer to another focus area.
- 4) If faculty do not vote to uphold the dismissal recommendation, specific reasons for non-support must be provided. In instances in which the faculty cite lack of adequate due process as a reason for non-support, the program committee recommending dismissal should address these concerns and then, may again move forward with a recommendation for dismissal. If concerns other than due process ones are raised, those faculty raising the concerns must take responsibility for the student and for addressing those concerns. If these faculty then decide the concerns cannot be remediated, they can again recommend to the entire faculty that the student be dismissed.
- 5) Per university policies, the dismissed student retains the right to appeal the dismissal.

Grievances and Appeals

If the student wishes to appeal a dismissal recommendation, the grievance process as outlined in the Student Code should be followed. This includes appealing first to the Program faculty and second to the relevant department head. If these appeals are unsuccessful the continued channel is: the Dean of the School of Graduate Studies, the USU Grievance Board, the Hearing Officer, the Provost, and the President of the University. If the student's grievance is related to discrimination or harassment the AA/EO Director is also included in concert with the Dean of the School of Graduate Studies. For more information on the grievance process see section VII-1 of the Student Code (available online at

<http://www.usu.edu/studentservices/studentcode/article7.cfm>

USU Student Code

Graduate students in the Interdisciplinary Doctoral Program in Neuroscience are expected to conduct themselves in a professional manner at all times in line with the USU Student Code. The Student Code is available at

<https://studentconduct.usu.edu/studentcode/index>. The code outlines student rights and responsibilities, university regulations, and discipline and grievance procedures. Students are referred to the document to answer questions related to procedure.

Financial Assistance

Several types of financial support are available to graduate students in Neuroscience. Students are expected to work closely with their chairperson to arrange for financial assistance. A brief description of each source of support is outlined below, along with an overview of application and awards procedures and deadlines.

Graduate Assistantships

Doctoral students may be employed on .50 FTE (20 hrs per week) assistantships as long as they remain in good standing in the program. Students may be assigned to one of the following 3 types of assistantships:

A **graduate instructor (GI)** is a graduate student assigned to teach one or more sections of a course for an entire semester. A GI must be the instructor of record.

A **graduate teaching assistant (GTA)** is a graduate student assigned to assist one or more faculty with instruction. A GTA may lecture in a course occasionally, tutor students, or assist in some other teaching capacity, such as teaching a lab or recitation session under faculty supervision.

A **graduate research assistant (GRA)** is a graduate student assigned to work under faculty guidance on one or more research projects.

Tuition Awards

Doctoral students are eligible for the doctoral tuition award that covers the in-state portion of tuition for classes on a student's doctoral program of study. Out-of-state tuition awards are awarded to non-Utah residents during their first year in the program. After that, students must obtain Utah residency unless they are international students (in which case the out-of-state portion of tuition will continue to be covered). **All tuition awards are contingent on a student having a .5 FTE assistantship.**

Student Representation and Responsibilities

The faculty assumes that all graduate students are responsible for progress in their graduate programs and expects them to show initiative and independence in all aspects of their programs. A major function of the program is to train competent neuroscientists who can work in research, academic, or applied settings.

Graduate students are also provided an opportunity to participate in setting and reviewing departmental policies and procedures through representation on major departmental committees. In addition, elected graduate student representatives are invited to attend departmental faculty meetings.

For many of the program requirements described previously in this manual, such as grant proposal and article for publication there is a form which must be signed by the GSC members

upon completion of the particular requirement. It is the graduate student's responsibility to see that these signed forms are placed in his/her file as soon as the requirement has been met.

Student Resources

For the most up-to-date information on graduate school policies, please see the “Graduate Catalog” tab on the School of Graduate Studies home page (<http://rgs.usu.edu/graduateschool/>)

Appendix : EXAMPLE STUDENT SELF-ASSESSMENT / EVALUATION

Interdisciplinary Doctoral Program in Neuroscience
Utah State University

Date: _____

Student: _____ Faculty Advisor: _____

Year Entered Program: _____ Entered with a Master's Degree? Yes ____ No ____

Due Date:

It is important to complete Pages 1 & 2 of this form and provide it to your faculty advisor ELECTRONICALLY by the due date in order to ensure that you receive a yearly evaluation. Each student in the program must receive a yearly evaluation to maintain good standing in the program. Your faculty mentor will review the full evaluation with you after the faculty evaluation process is complete.

Instructions:

- 1) Attach copies of your:
 - a. Updated Plan of Study. Please ensure that your Plan of Study is current and accurate.
 - b. Current Supervisory Committee Forms
 - c. Transcript with course grades
 - d. CV
- 2) Complete the sections below.
- 3) Provide these materials to your faculty advisor by the due date for your annual evaluation.

PART I: To be completed by student

Milestones completed since entering the program: (enter semester completed)

_____ 2 nd Yr Project Proposed	_____ Presentation
_____ 2 nd Yr Project Completed/Approved	_____ Grant Writing
_____ Doctoral Committee Approved	_____ Paper Submitted
_____ Doctoral Program of Study Approved	_____ Comprehensive Exam Passed
_____ Dissertation Proposed	

List your accomplishments in the previous academic year (e.g., presentations at professional conferences, publications submitted or accepted, grants submitted or funded, courses taught).

Briefly describe areas in which you feel you need to improve.

Part II: To be completed by Faculty

Faculty Evaluation of Student Performance

Students are expected to:

- Earn A's in all of their courses. A grade of "C" is "Unacceptable".
- Be productively involved in research for the duration of the program leading to publishable products.
- Actively* participate in the Neuroscience Seminar.
- Be mature, professional, and involved departmental/program citizens.

Students demonstrating *Unacceptable* performance in any of these areas may be dismissed from the program

Note: Performance is rated as "Exceptional" only for truly unusually exceptional accomplishments in an area.

	Unacceptable 1	2	Meeting Expectations 3	4	Exceptional 5
Involvement in Research					
Program Seminar Participation (attendance and quality)					
Maturity/Professionalism					

Ability to Work with Others					
Responsiveness to feedback					
Performance in Assistantships					
Timely Progress Toward Completion of Program					
Course Grades					

Comments / Recommendations:

Standing in Program: Good__ Probationary____ Recommend Dismissal_____

Faculty Advisor

Student

Neuroscience Program Coordinator
