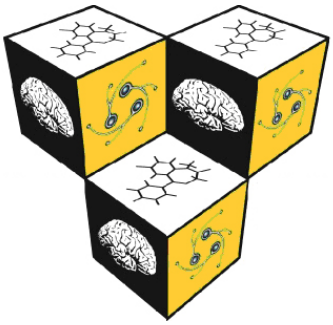
Neuroscience Ph.D. Program

IOWA

Interdisciplinary Graduate Program in Neuroscience



Daniel Tranel, PhD
Program Director

Sheila Baker, PhD
Associate Program Director

Michael Dailey, PhD
Associate Program Director

Maggie Grell-Davis, MA
Program Administrator

HANDBOOK

(January 3, 2026)

I. Program Administration

A. Contacts:

Program Website: https://neuroscience.grad.uiowa.edu/

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B. When are You Required to Contact the Program Office?

Educational Milestones

Students need to contact the Program Office (copy both Maggie and Britt) at each of these milestones:

- Anytime your name, address, home phone number, cell phone number, or office/lab contact information changes
- When you make rotation mentor choices
- When you begin and complete TA-ships
- When you choose your mentor
- Anytime your funding source changes
- When you choose your committee members
- When you have changes in your committee membership
- When you need Britt to assist with scheduling committee meetings
- If you prefer to schedule your committee meetings independently, immediately upon scheduling the meetings
- As soon as you know your comps date
- As soon as you know you plan to defend in a particular semester
- As soon as you know your defense date
- Alumni—whenever you have a change of position, institution, name, or other contact information

Noteworthy Accomplishments

For website updates and to assist the Program Administration with other Neuroscience Program public relations, promotional, and training grant goals, please contact the Program Office when:

<u>Students</u>

- You receive fellowships, grants, or other monetary awards
- You publish papers or chapters
- You receive any honors or awards
- You receive any positive media attention
- Anything else you would like shared with the program via announcements

<u>Faculty</u>

- You receive major accolades of any sort
- You receive any positive media attention
- You receive any award related to your teaching
- You publish something particularly noteworthy
- You receive noteworthy grants or other monetary awards

C. Whom Should You Contact?

Although the Program Administrator and the Program Associate are both happy to assist you or guide you in the right direction, the table below lists the task distribution for some common Program Office requests.

First Contact	Question or Request
Maggie	Registration changes (adds, drops, and change of hours forms)
Britt	Website updates and corrections
Britt	Research rotations and rotation evaluations
Britt	Room reservations
Britt	Travel arrangements and reimbursements
Britt	Meeting arrangements
Britt	Invoice payments (e.g. restaurant or supply bills)
Britt	Reports for Committee meetings
Britt	Reports for Comprehensive Committee meetings
Britt	Poster printing
Maggie	Course evaluations
Maggie	Budget questions
Maggie	Policy questions
Maggie	Stipend questions
Maggie	U-Bill questions
Maggie	Grant and fellowship questions
Maggie	Complaints/concerns/problems
Both Maggie and Britt	At educational milestones listed above

II. Financial Support (stipend, tuition, covered fees)

Graduate students in the Neuroscience Program at the University of Iowa are normally fully supported (stipend, tuition, covered fees) throughout their training in the Program, contingent on satisfactory progress, for a period that normally runs 4 to 6 years (total expected training time). Support commitments are reviewed annually and are normally renewed each year if the student is making satisfactory progress. Whether the student is making satisfactory progress is determined by the student's mentor, the Student Advisory Committee, and the Program Director.

Graduate student appointments include a stipend, which is subject to change each year commensurate with the recommendation of the Office of the Associate Dean for Graduate and Postdoctoral Studies of the College of Medicine. The stipend is set to be competitive with peer institutions. Stipends for students appointed to federal training grants (T32s, F31s, see below) are typically capped at levels below the University of Iowa biomedical stipend level, and in such cases, the difference is made up by the Program, mentor, or from other funds. For students appointed to the Neuroscience Training Grant (appointments normally run from 9/1 through 8/31), the stipend difference will normally be paid by the Program through July of the relevant year, and the August difference will be the responsibility of the mentor.

Tuition and covered fees include the following:

1. Base tuition and associated mandatory fees (technology fee, student activities fee, student services fee, student union fee, building fee, recreation facility fee, arts & cultural events fee, professional enhancement fee for graduate students, student health service fee).
2. All fees associated with core, required, and directly relevant elective coursework.
3. All fees are associated with registration changes, credit hour changes, and other changes that occur in connection with required and directly relevant courses.
4. Summer recreation facility fees (if student is not registered for the summer term and desires access to the recreation facility).
5. The Program will cover the mandatory one-time University Records and Documents Fee (for domestic students) or the International Student Matriculation Fee (international students) at the time of student matriculation.
6. The Program will cover the EPE testing fee for international students. For international students, the Program will cover the International Student Fee in the first year, and the PI will cover this fee in subsequent years.

Fees that are NOT covered by the Program include:

1. Key deposits.
2. Fees associated with extracurricular or other elective courses not relevant to the program of study in Neuroscience.
3. Fines, penalties, parking tickets, and other such violation-associated fees.
4. Mandatory fees are associated with submitting a dissertation, including a degree application fee, a publication and binding fee, and a thesis fee.

5. Fees and regalia rental charges associated with participating in commencement.

Stipend, tuition, and covered fees are paid by either University and/or departmental funds, and/or by extramural sources. Graduate students receive support through the following mechanisms:

A. Training Grants

Students in the early years of training may be appointed to federal traineeships, including the Neuroscience Training Grant (T32). Such appointments are based on merit, and thus are considered honorific.

Eligible first year (and occasionally second year) students may be appointed to the Neuroscience Training Grant. Second year (and occasionally third year) students may be eligible for other T32s (training grants), such as the Interdisciplinary Training Program in Pain Research and the Predoctoral Training in Pharmacological Sciences. Applications to training grants normally require submission of specific materials by certain deadlines, and interested students are encouraged to consult with their mentor, the Neuroscience Program Director, and Program Directors of other potential T32s.

B. Neuroscience Program Graduate Research Assistantships

Students in the first year of training may be appointed to graduate research assistantships and awarded tuition scholarships, from funds allocated to the Neuroscience Program by the Graduate College. On occasion, second-year students may be appointed to such graduate research assistantships.

C. Other Graduate Research Assistantships

Students in the second and subsequent years of training may be appointed to a graduate research assistantship from a research grant or may receive funding from the department in which their research is being performed or may be awarded support from funds provided by the Graduate College.

D. Teaching Assistantships

Students in the second and subsequent years of training may be appointed to a graduate teaching assistantship from funds provided by the Graduate College. Such appointments may take place directly through the Neuroscience Program, or indirectly through affiliated Departments and Programs (e.g., Psychology, Biology).

E. Other Means of Support

Students may receive support from other sources, including University of Iowa Graduate Recruitment Fellowships and a variety of nationally competitive NIH, NSF, and other individual awards.

F. Summer Registration

Graduate students in the Program normally do not register for summer term. There are four exceptions to this:

1. Some first-year students who may take courses during their first summer.
2. Students taking the Comprehensive Examination during the summer term.
3. Students who are defending their PhD during the summer term.
4. Students who have a summer fellowship (e.g., from the Graduate College).

Outside of these exceptions, students will not register for the summer. (This policy is broadly in effect for all the biomedical science advanced degree programs at the University of Iowa.)

G. Tax Information

Students should be aware that IRS regulations may require FICA withholding for summer stipend checks for students not registered for the summer term. This can amount to an income loss of about $500, depending on the student's particular circumstances. Neuroscience faculty mentors have the prerogative to pay their student an extra $500 (or whatever the FICA withholding amounts to) for the summer, to offset the withholding. An agreement about this, one way or another, should be reached between the student and faculty mentor at the beginning of the academic year (normally July or August), for the following summer.

For students who are on a federal fellowship (e.g., T32, F30/F31, NSF), it is strongly recommended that the student reviews UI Payroll Services Fellowship Payment Rules, check for a Fellowship Payment form in Year-End Tax Information in Self-Service, and contact UI Payroll Services with questions.

III. Academic Standards

To be eligible for continuation of stipend support and tuition scholarships, graduate students must satisfy the following minimum conditions of satisfactory performance.

A. Registration

The student must pursue continuous, full-time studies (9-15 semester hours per semester prior to passing the Comprehensive Examination, then post-comp registration after completion of the Comprehensive Examination). The Graduate College has a specific definition of “continuous, full-time studies,” with which Neuroscience students must be in compliance, and students are encouraged to consult with the Graduate College for further information.

B. Coursework

The student must complete coursework in a timely manner. Core and elective courses for the Neuroscience Program are normally completed by the end of the second year (or by the end of the first year for MSTP students; see section IV J below).

C. English Proficiency

For students whose first language is not English, the Graduate College specifies that a matriculating graduate student who’s TOEFL score is below the required level must take the English Proficiency Examination (EPE). The EPE is usually taken prior to the student’s initial registration for courses. The student is required to enroll in and complete English as Second Language (ESL) course(s) as prescribed by the results of the EPE. All ESL course(s) should be completed within the first year.

D. Academic Standing

Program Requirements

The student must maintain a cumulative grade point average (GPA) of 3.0 in coursework. No research or independent study taken during a student's graduate training counts in the GPA for this purpose.

Graduate College Policy

The student shall be placed on academic probation by the Graduate College if, after completing 9 hours of graded (A, B, C, D, F) graduate work at The University of Iowa, the student's cumulative grade-point average falls below 3.00.

A student will be returned to good standing when his or her cumulative grade-point average becomes equal to or greater than 3.00.

If, after completing 9 more semester hours of graded (A, B, C, D, F) graduate work at this University, the student's cumulative grade-point average remains below 3.00, the student shall be dropped from the degree program and denied permission to reregister within any Graduate College doctoral degree program. The student may apply for and be accepted into a nondoctoral degree or certificate program.

E. Laboratory and Seminar

The student must maintain satisfactory laboratory and seminar performances as evidenced by grades of “S” or “P” in NSCI:7305, Neuroscience Research, and NSCI:6265, Neuroscience Seminar.

IV. Curriculum

The Graduate College requires satisfactory completion of 72 semester hours to obtain a Ph.D. These hours are obtained through a combination of Core and Elective courses, and seminar and research hours accumulated throughout graduate training.

A. Required Core Neuroscience Courses

Graduate students are required to complete the Neuroscience Program core courses (listed below) prior to taking the Comprehensive Examination. (On rare occasions, core courses may be completed after the Comprehensive Examination, e.g., if a course is not available in a feasible manner. The student should make such arrangements in consultation with their mentor and the Program Directors.) Graduate students are expected to achieve a grade of “B” or better in core courses in order to satisfy this requirement. If a student receives a grade of less than a “B” in a core course, the course may have to be repeated, or a student may have to perform remedial work as specified by the Program Directors and mentor.

Based on courses undertaken prior to entering the Neuroscience Program, some core Neuroscience course requirements may be waived. Students have the prerogative to request such waivers from Program leadership (Directors). The Directors will review such requests and may ask for documentation such as a syllabus and transcript in order to reach a decision.

Core Courses	
PSY:6370	Principles of Neuropsychology, 3 s.h.
ACB:6252	Functional Neuroanatomy, 4 s.h.
BIOL:5653/5658	Fundamental Neurobiology I, 3 s.h., with Discussion (2 s.h.)
BIOL:5654/5659	Fundamental Neurobiology II, 3 s.h., with Discussion (2 s.h.)
NEUR:7235	Neurobiology of Disease, 3 s.h.

B. Elective Neuroscience Courses

To provide training both in an area of specialization and in related areas of neuroscience, students are required to take at least 3 semester hours of Elective Courses.

A representative list of approved electives is provided below. New courses may be added, courses may be discontinued, changed, renamed etc., each year, and thus, this list is approximate, and the actual courses offered in any given semester will need to be determined from the listings on MyUI. Selection of Elective Courses should be done in consultation with the student's Advisor/Mentor and the Program Directors.

Many students with an interest in cellular/molecular/ developmental neuroscience take BMED:5207 Principles of Molecular & Cellular Biology.

Many students with an interest in systems/behavioral/cognitive neuroscience take NSCI:5212 Foundations in Behavioral & Cognitive Neuroscience (please note that NSCI:5212 is currently only offered every other spring semester in the even years). These courses are designated with an * in the list below. The elective requirement is normally satisfied prior to taking the Comprehensive Examination.

(Spring/Fall indicate when these courses have been offered in the past. As noted above, students should consult with MyUI to confirm when the course(s) of interest are *in fact* being offered.)

Elective Courses		**Fall**	**Spring**
BIOL:3343	Animal Physiology	x	
BIOL:2254	Endocrinology	x	
BIOL:3212	Bioinformatics for Beginners	x	
BIOL:5199	Critical Readings in Biology	x	x
BIOL:6188	Seminar: Writing in the Natural Sciences		x
BMED:5207	Principles of Molecular & Cellular Biology	x	
CSD:2110	Phonetics: Theory & Applications	x	
CSD:2111	Basic Acoustics for Sp & Hrng	x	
CSD:6230	Psychoacoustics	x	
CSD:5234	Acquired Cognitive-Communication Disorders	x	
HHP:6300	Motor Control Seminar	x	x
IMMU:6241	Writing a Scientific Proposal	x	

MATH:5750	Mathematical Biology I	x	
PCOL:5135	Principles of Pharmacology		x
PCOL:5137	Neurotransmitters (1 s.h., module 3)		x
PCOL:6207	Ion Channel Pharmacology (1 s.h., module 2)		x
PCOL:6225	Growth Factor Receptor Signaling, 1 sh (1st module)		x
PSY:1001	Elementary Psychology	x	x
PSY:3320	Psychopathology	x	x
PSY:5610	Proseminar in Cognition and Perception	x	
PSY:7210	Advanced Topics in Behavioral & Cognitive Neuroscience: Neuroscience of Learning & Memory	x	
RHET:7940	Public Speaking for Academics	x	
GENE:6200	Current Topics in Genetics		x
NSCI:5212	Foundations in Behavioral & Cognitive Neuroscience (offered even numbered years)		x
NSCI:5365	Seminar: Neuropsychology and Neuroscience ("Morning Meeting") (same as PSY:5365; NEUR:5365)	x	x
STAT:6300	Probability and Stochastic Processes I	x	
MMED:6220	Mechanism of Cellular Organization, 3 s.h.	x	
MMED:6226	Cell Cycle Control, 1 s.h. (2nd module)		x
MMED:6227	Cell Fate Decisions, 1 s.h. (3rd module)		x

All students register for NSCI:6265 Neuroscience Seminar and NSCI:7305 Neuroscience Research each semester until they reach the minimum number of semester hours needed to graduate (72 s.h.). Once 72 s.h. is reached, students must register for NSCI:6265 Neuroscience Seminar each semester until they graduate.

C. Quantitative Methods, Statistics, and Programming

Required coursework

The Neuroscience Program requires a one-semester course (≥ 3 s.h.) in quantitative methods/statistics. This course will normally be completed before the Comprehensive Examination. Students with an extensive background in statistics can petition the Program for an exemption to this requirement (see IV.A. above). (As an introductory primer, students may also be interested in: PCOL:5204, "Basic Biostatistics and Experimental Design." This is a 1-2 s.h. module offered in the Fall semester, appropriate for biomedical graduate students.)

To satisfy the statistics requirement, students may take one of the following:

PSY:5050, "Quantitative Methods in Psychology," taught by Professor J. Toby Mordkoff in the Department of Psychology. Professor Mordkoff normally offers this course in the Fall semester. This is a 4 s.h. course.

BIOS:4120, “Introduction to Biostatistics,” 3 s.h. This course has traditionally been offered in both Fall and Spring semesters.

Recommended coursework

A second course in quantitative methods/statistics is strongly recommended, depending on students’ needs for such coursework given the nature of experimental designs and datasets they are likely to utilize in their research. Potential options for such advanced coursework are listed below. Additional statistics courses can be counted towards elective requirements. Students are encouraged to consult with their Mentor and with the Program Directors to determine whether additional statistics courses might be useful for their program of study.

BIOS:5510	Biostatistical Computing, 2 s.h. each module, R (Aug-Oct), SAS (Oct Dec)
BIOS:6210	Applied Survival Analysis, 3 s.h., SP
PSQF:6243	Intermediate Statistical Methods, 4 s.h., FA & SP
PSY:5055	Mixed-Effects Modeling in Psychology, 4 s.h., FA
STAT:6560	Applied Time Series Analysis, 3 s.h., SP
STAT:4540	Statistical Learning, 3 s.h., FA

Training in computer programming and data analysis

Students who are interested in expanding their exposure to computer programming outside of the scripts used in their mentors’ labs (e.g., MATLAB) are encouraged to take courses in versatile languages such as Python or R. For example, a listing of regularly offered courses using Python appears below:

CS:1110	Introduction to Computer Science, 3 s.h., FA & SP
CS:2110	Programming for Informatics, 4 s.h., FA
CS:5110	Introduction to Informatics, 3 s.h., FA

In addition, UI’s Information Technology Services (ITS) occasionally offers workshops that introduce participants to “R,” a programming language for statistical computing and graphics (e.g., “Introduction to R,” or “Data Visualization Using R”). Future workshops are posted on the ITS Research Services’ Events page (ITS Events) as they are scheduled.

UI students also have access to an on-line training environment (“LinkedIn Learning”) that provides access to thousands of online courses on programming, coding, statistics, productivity, web design, graphic design, and more. The site has training in the installation and use of tools such as “R” and programming languages such as “Python,” as well as courses in statistics, data analysis, data visualization, Excel, SPSS, etc. For available courses, see: LinkedIn Learning.

D. Seminar (NSCI:6265)

The Neuroscience Seminar Series provides a weekly forum for research presentations by faculty and students of the Program, and by invited guest speakers. The Seminar is attended by all students in the Program, by Program faculty, and by faculty and guests from other Departments and Programs on campus.

Graduate student attendance is required. Each semester, students will be allowed up to 2 unexcused absences from Seminar. Students with more than 2 unexcused absences in a semester will receive an Unsatisfactory (U) grade for that semester.

Acceptable excuses for missing Seminar include:
1. Attending a required class (e.g., Principles of Scholarly Integrity).
2. Attending research conferences, out-of-town meetings, or interviews
3. Religious holidays.
4. Family emergencies.

Examples of absences that will <u>not</u> normally be excused include:
1. Testing research participants.
2. Running late on research testing with an animal or participant.
3. Being tied up with an experiment.
4. Illness.

Some of these events may not be avoidable, but that is why <u>students are permitted 2 unexcused absences per semester</u>. If students are unsure about whether a particular reason for being absent will be considered excused or unexcused, they should check well in advance with the Chair of the Seminar Committee **(Dr. Marco Hefti; marco-hefti@uiowa.edu)**.

In all cases, students should email the Chair of the Seminar Committee, named above, and the Program Associate **(Britt Hokanson; britt-hokanson@uiowa.edu)** well before any expected absences. Student attendance at Seminar is of paramount importance.

Attendance is tracked by a sign-in sheet that students should sign at the beginning of Seminar, as soon as they arrive. Students who do not sign in will be counted as absent and unexcused (unless they had prior permission as above), no matter whether they were physically in attendance or not. Also, punctuality is required. Students who are more than 10 minutes late will receive a warning the first time and will be counted as absent and unexcused on subsequent occasions. *Note, signing in on behalf of an absent party (or recruiting another to do so on your behalf) is considered a form of academic dishonesty.*

High-spirited discussions are encouraged. Presentations are monitored to ensure a high level of quality. The format encourages student-faculty interactions. Invited speakers are introduced by a neuroscience graduate student. Invited speakers are scientists with national and international prominence. The Seminar meets throughout the Fall and Spring semesters.

Graduate students in the Program present at Seminar according to the following schedule:

1. First year students give a Rotation Talk, usually at the end of the Spring semester of their first year (ca. April/May). First-year students select one of their three rotation projects and describe the goals and results of the research in a brief (approximately 10 minute) presentation. Typically, four first-year students split a one-hour seminar slot. Each Rotation Talk is followed by a brief question-and-answer follow-up. Rotation Talks should include an "Elevator Talk" portion (see below), adjusted in length to be proportionate to the length of the presentation (e.g., a shorter presentation, on the order of 10 minutes, would have a briefer Elevator Talk than a presentation 2-3 times that long).

2. From the second year on, students give a 25-minute presentation (including time for questions), once per year. Two students split a one-hour seminar slot. Each presentation is followed by a short question-and-answer session.

3. Students in the last semester of the Program are not required to give a Seminar presentation. Of note, all students are required to attend Seminar until they officially graduate (including after they have had their final defense).

All students are required to give a brief "Elevator Talk" at the beginning of their presentations in Seminar. This is a short, several-sentence summary of their research, in lay language suitable for an educated but non-scientific audience. The Elevator Talk is also required for the short Rotation Talks (see #1 above), adjusted to be proportionate in length.

E. Data Blitz

One Seminar slot, late in the academic year (normally during the Spring semester), will be reserved for a Data Blitz. The Data Blitz is one hour of brief, intense data presentations by neuroscience graduate students, using the following procedures:

1. Graduate students who are post-comps are eligible to participate.

2. A maximum of 10 presentations is allowed. Securing a slot in the Data Blitz is on a first-come, first-serve basis, and students may self-nominate to participate.

3. Formal and strict presentation rules are followed, including:
   a. Three slides are required (typically an Introduction/Background slide, Data slide, and Interpretation/Conclusions slide).
   b. There is a maximum 5-minute time per presentation.
   c. Any questions must be within the 5-minute time window.

4. If there are more than 10 eligible and interested students, a second Seminar slot will be devoted to another Data Blitz.

F. Scholarly Integrity / Responsible Conduct of Research

First year students must complete web-based training modules of Collaborative Instruction Training Initiative (CITI). Students must complete with a passing grade of 80% or higher four modules in the fall semester (August) and four modules in the spring semester (January).

Second year students will enroll in a 0 semester hour course, which includes the following elements (both include four 90-minute small group sessions):

1. BMED:7270 Scholarly Integrity/Responsible Conduct of Research 1 (fall)

2. BMED:7271 Scholarly Integrity/Responsible Conduct of Research 2 (spring)

In addition, students continue to participate in education in Scholarly Integrity and Responsible Conduct of Research throughout their graduate training. This is accomplished via special presentations during Seminar, laboratory-specific training and education, and instruction delivered in NSCI:6265, Neuroscience Seminar.

G. Laboratory Rotations

In order to gain more widespread experience in neuroscience research and to aid in selecting a laboratory home and thesis project, students perform three laboratory rotations prior to selection of a thesis advisor. The laboratory rotations are normally carried out in research laboratories of Neuroscience Program faculty. (A rotation can be completed with a faculty person outside the Neuroscience Program, with special permission of the Student Advisory Committee and Program Director.)

The length of each lab rotation is flexible and can vary from 10 to 16 weeks. Two lab rotations may be completed in the same laboratory with the approval of the Program Director and Associate Director. During the first week of each rotation, students discuss the goals and expectations (for example, hours in lab, readings, mastery of techniques, and anticipated progress on a project) with the lab advisor.

Lab rotation performance is evaluated as satisfactory/unsatisfactory (S/U), and consists of 3 components:

1. A copy of the **Graduate Student Laboratory Performance Rubric** which is completed jointly by the student and research advisor, see Appendix III.
2. A written evaluation by the research advisor (to be shared only with Program Leadership) including indicators for why, or why not, the student may be welcome to affiliate with the lab for their thesis research.
3. A written evaluation by the student (to be shared only with Program Leadership) of the opportunities provided in the lab rotation.

Modification of the lab rotation requirement is at the option of the Program Director and Associate Director.

Dates for lab rotations are approximately as follows (exact dates for a particular academic year are available through the Neuroscience Program Office):

- **1st Rotation**: late August (beginning of Fall semester) through early November
- **2nd Rotation:** early November through late January
- **3rd Rotation:** early February through mid-May.

For each academic year, the official rotation schedule and dates will follow the schedule set by the Research Training Group and Office of Graduate and Postdoctoral Studies, with the understanding that the Neuroscience Program retains the prerogative to maintain flexibility and accommodations in the schedule so that rotations can be completed in the most effective and productive manner possible.

H. Teaching

During the course of their graduate studies, students are expected to gain experience in teaching and to establish their credentials in teaching excellence. Students are required to serve at least one semester as a teaching assistant. This requirement can be met by serving as a teaching assistant in a neuroscience-related course such as Functional Neuroanatomy (small groups and lab), Fundamental Neuroscience, Neurophysiology, Neurobiology of Disease, Principles of Neuropsychology, or a related course.

Consult with the Program Director to determine if a Neuroscience program elective or related course will satisfy this requirement. Funded or partially funded teaching assistantships may be available either through the Neuroscience Program or through related Departments and Programs (e.g., Psychological & Brain Sciences, Biology, Anatomy & Cell Biology).

Students normally pursue funded teaching assistantships after they have completed the Comprehensive Examination. Such teaching assistantships must have prior approval from the Program Director and Associate Director. Following the arrangement with the Program Director and the course instructor for which the student will be serving as a teaching assistant, the program office should be notified at the beginning of that assistantship.

In addition to serving in a formal teaching assistantship, students gain teaching experience through presentations in Seminar, participation in journal clubs, and participation in lab meetings during their rotations and thesis research.

Additional instruction in teaching, designed specifically for graduate students, is offered through the Office of Graduate Teaching Excellence (OGTE), which operates under the auspices of the College of Education (COE). In partnership with the COE and the Graduate College, OGTE enables all University of Iowa doctoral students to complement their home discipline's curriculum and research training with the

development of effective teaching skills. OGTE provides doctoral students with the knowledge and skills needed for success in the classroom when they accept academic positions upon graduation and/or after completion of post-doctoral training. OGTE's goal is to provide students who intend to enter academia with the tools and preparation to be effective teachers.

The Graduate Certificate in College Teaching is available to all University of Iowa PhD students enrolled under the Graduate College (including all Neuroscience Program students). To earn a Graduate Certificate in College Teaching, the coursework requirements from each of the 3 Categories listed below must be completed. A minimum of 12 semester hours is required for the Graduate Certificate in College Teaching. Previous teaching experience will not be permitted to waive any of these requirements. Interested students should consult the Graduate Certificate in College Teaching website at: College of Education: Graduate Certificate in College Teaching .

Formal approval in writing from the student's mentor and the Neuroscience Program is required for students who wish to pursue the Graduate Certificate in College Teaching (see Appendix V**)**.

Category 1 - Minimum of 6 s.h. required.
Choose TWO:

- Teaching and Learning in Higher Education (3 s.h.) GRAD:7385, EPLS:7385
- Seminar in College Teaching (1-3 s.h.) PSQF:6217
- Teaching in Epidemiology EPID:7200
- Teaching Sociology (3 s.h.) SOC:7010
- Design of Instruction (3 s.h.) PSQF:6205

Category 2 - Minimum of 3 s.h. required.
Must enroll twice, under the supervision of TWO different professors.
NOTE: Teaching Assistantship duties may not be used to satisfy the teaching experience requirement.

- Enroll in EDTL, EPLS, PSQF, RCE, U:7380 Practicum in College Teaching (1-3 s.h.) when supervised by a College of Education faculty member.
- Enroll in GRAD:7400 Practicum in College Teaching, (1-3 s.h.) when supervised by a faculty member in a College other than Education.

Category 3 - Minimum of 3 s.h. required.

- PhD ePortfolio in College Teaching (3 s.h.) EALL:7475 / 07X: 475

For additional information and to enroll in the certificate program, please contact Dennis R. Maki, Director, or Mitchell Kelly, Associate Director.

Teaching completed under the auspices of the Certificate in College Teaching may be used to satisfy the Neuroscience Program's teaching requirement. This will be determined on a case-by-case basis by the Program Director and Associate Director. Students who wish to request that their Certificate teaching experience be counted

as their Program-required teaching experience should submit the request in writing to the Program Director and Associate Director.

I. Timetable for Course of Study

In consultation with the Program Director and Student Advisory Committee, each student's program of study is designed individually in relation to prior undergraduate training and graduate research goals. Prior to beginning studies in the Neuroscience Graduate Program, each student meets with the Program Director to prepare a program of study.

Thereafter, the Student Advisory Committee meets with each student on a regular designated schedule, to plan for course registration, assist with the selection of faculty mentors for lab rotations, and assess the student's progress in the program (see Section V.C below). Students normally choose a thesis lab by the end of their first year.

J. Medical Scientist Training Program (MSTP)

Some students matriculate into the Neuroscience Program from the MSTP to pursue their PhD training. MSTP students typically complete a somewhat abridged curriculum of pre-comprehensive examination instruction and coursework, due to their having already satisfied several core requirements. Specifically:

1. Coursework: MSTP students normally can complete necessary coursework within one year and can then sit for the Comprehensive Examination. MSTP students have normally completed some core and eligible elective coursework prior to matriculating into the Neuroscience Program.

2. Laboratory Rotations: MSTP students normally can opt for fewer than 3 laboratory rotations and may only do 1 or 2 lab rotations prior to choosing a mentor (some matriculating MSTP students will have already selected a home lab). MSTP students have normally completed some laboratory rotation work prior to joining the Neuroscience Program.

3. In most cases, MSTP students are eligible to perform the Comprehensive Examination in the summer following their first year in the Neuroscience Program.

4. Decisions about coursework, laboratory rotations, and choosing a mentor are made in consultation with the Student Advisory Committee, the Training Mentor, and the Program Director, along with the Directors of the MSTP.

V. Plan of Study for the Neuroscience Program

A. Coursework

First Year:

Fall

Principles of Neuropsychology (3 s.h.)
Fundamental Neurobiology I (3 s.h.) with Discussion (2 s.h.)
Neuroscience Seminar
Neuroscience Research
Lab Rotations

Spring

Functional Neuroanatomy (4 s.h.)
*Optional, Statistics or Elective
Neuroscience Seminar
Neuroscience Research
Lab Rotations

*Note that taking a second course in the Spring semester of the first year is marked as Optional. Functional Neuroanatomy is a time-consuming course, and most students opt to take only that course. Students with prior formal coursework in neuroanatomy, or extensive prior experience with neuroanatomy, may have the bandwidth to take an additional course along with Functional Neuroanatomy, e.g., a Statistics course or an Elective. (This does not apply to MSTP students, who have already taken Neuroanatomy and will have a different plan of study for the first Spring semester.)

Selection of a PhD mentor (thesis advisor) is normally finalized by around the end of the spring semester of the First Year.

Students may take an Elective course during the summer of the first year. Some students may find it beneficial to take a Statistics course during the summer of the first year.

Second Year:

Fall

Neurobiology of Disease (3 s.h.)
Statistics and/or Elective(s)
Neuroscience Seminar
Neuroscience Research

Spring

Fundamental Neurobiology II (3 s.h.) with Discussion (2 s.h.)
Statistics and/or Elective(s)
Neuroscience Seminar
Neuroscience Research

The Comprehensive Examination is typically completed during the second summer. The deadline for taking the Comprehensive Examination is September 15, at the end of the second summer.[1]

B. The Comprehensive Examination

1. Students take the Neuroscience Program Comprehensive Examination during the second summer of their program of study (except for MSTP students; see Footnote 1). The normal time frame for completing the Comprehensive Examination is from mid-May through the end of August (students may complete the Exam earlier, with Program approval). The deadline for taking the Comprehensive Examination is September 15, at the end of the second summer.

Students are eligible to take the Comprehensive Examination when the following minimum requirements are met:

   a. The student is in good academic standing as defined by the Graduate College. Students who are not in good academic standing per Graduate College policy are not eligible to take the Comprehensive Exam.
   b. The student has completed all required Neuroscience Program core courses with a grade of at least "B" in each course. Students failing to achieve a "B" grade in such courses may have to retake the course and achieve a grade of "B" or higher or may have to perform remedial work as specified by the Student Advisory Committee and Program leadership. Based on courses undertaken prior to entering the Neuroscience Program, the Student Advisory Committee may waive some core Neuroscience course requirements. It is to be understood that material presented in these courses may be included in the Comprehensive Examination, and students must demonstrate competence just as if they had taken the University of Iowa Neuroscience Program course(s).
   c. In addition to the required coursework, it is strongly recommended that academic preparation prior to taking the Comprehensive Examination includes at least one course in statistics.

2. The goal of the Comprehensive Examination is to ensure that students have a broad knowledge of the field of neuroscience so that:
   a. students can be conversant with neuroscientists in any area of the field, and;
   b. students can bring a broad interdisciplinary perspective to their own research. The examination provides a means of assessing whether students have obtained the requisite broad knowledge. In addition, preparing for the examination is intended to be a useful educational

[1] Students who matriculate into the Neuroscience Program from the MSTP are exceptions: for these students, coursework is normally completed after one year, and the Comprehensive Exam is taken after the first year.

experience for students.

3. The student, in consultation with their advisor, shall select a Comprehensive Examination Committee by the beginning of the Spring semester (before MLK day in January) of their second year.

   The proposed Committee must be submitted to the Chair of the Standing Comprehensive Examination Committee for approval. The Comprehensive Examination Committee for each student shall consist of 5 Faculty members (at least 4 members must be tenure track) who will usually be the same as members of the Thesis Committee (see Section IV.C below), with the exception that the thesis advisor is replaced by a member of the Standing Comprehensive Exam Committee. (The thesis advisor does not participate in the Comprehensive Examination.)

   Each student's Comprehensive Examination Committee is Chaired by a member of the Standing Committee. The Chair is chosen randomly by the Standing Committee chairperson (who will distribute workloads evenly across the Standing Committee members). The Chair is responsible for conducting the Examination, assimilating feedback from the Committee, and communicating this to the student and the Graduate College. The Chair is responsible for composing a detailed feedback letter for the student, outlining strengths and weaknesses in the Comprehensive Exam (both written and oral portions). Completion of the feedback letter within ten days of the exam is of particular importance in cases of Reservations or Fail (and for Reservations, the Graduate College requires the Letter to be submitted by 14 days after the exam is completed).

   At least 3 of the 4 members (beyond the Chair) must be members of the Neuroscience PhD Program. The Committee may include up to 2 additional members (excluding the student's mentor) recruited for their expertise in the student's research area. This is at the Committee's discretion, although students may be given the opportunity to suggest 2 such additional members for their Committee. To represent a reasonable diversity of research interests, no more than 3 of the Committee members may be from any one department. Faculty members from outside the institution may be chosen; this requires approval from the Graduate College.

   The Comprehensive Examination Committee's actions and decisions are made objectively and autonomously. Exam outcomes will be reported to the Graduate College (cc'd to the Program Director) using standard Graduate College exam report procedures. Appeals of the Committee's decisions must follow procedures outlined in Section VII-B.

4. Students will be required to write a proposal for the Research Plan of an NRSA grant.

a. **Topic.** The topic can be related to work that is currently being conducted in the student's home lab, but must involve a novel component, for example one Specific Aim which is different from other aims that the lab has researched or proposed research on; some preliminary data collection, or analysis of existing data, by the student. The options for introducing novelty will be fairly flexible to accommodate the variety of research and mentoring styles within the Neuroscience Program. The committee will judge the proposal following guidelines similar to those followed by grant or article reviewers, e.g., the proposed work may extend existing findings or on-going work to some extent but must propose to advance the field in some way.
b. **Scope.** A meritorious proposal will demonstrate the student's awareness of the implications of the proposed work at several levels, for example, the relationship between molecular/cellular and systems-level functioning, the impact of neurophysiology on cognition and behavior.
c. **Format.** The format of the written proposal will be based on the NIH format for a PHS SF424 (R&R) Individual Fellowship Application. Specific instructions will be provided by the Committee and will be closely modeled on the prevailing NIH format.
d. Students must carefully and thoroughly address NIH guidelines for promoting scientific reproducibility, rigor, and transparency.

5. The proposal must be the primary work of the student. The application may be prepared with reasonable assistance and guidance from the student's mentor. The student may seek advice and guidance from other faculty, as well, on an ad hoc basis. This typically would take the form of discussion of any aspect of the proposal (e.g., aims, hypotheses, background, methods, analyses, ethics, feasibility) with experts in that area. This could include members of that student's comprehensive exam committee. The proposal should be written solely by the student and not edited by anyone else.

The proposal must be accompanied by a letter from the student (and signed by the mentor), detailing the mentor's degree and nature of involvement, including which parts or aspects of the proposal and work were conducted independently, as well as any significant input from other individuals. This is analogous to the "Respective Contributions" portion of the NRSA application, which requires a description of the role played by the PI in writing the proposal.

6. The student must submit the proposal (a written document) to all committee members at least two weeks prior to the scheduled exam.

   If the student needs assistance finding a suitable date for their committee, they should inform the Program office and provide a current list of their committee members. The Program office will then send out a scheduling poll

to all parties involved. Once a consensus is reached, the Neuroscience Program office will proceed with finding an appropriate room for the comprehensive examination.

If the student needs assistance finding an available room for their exam but already has chosen a date, they should inform the Neuroscience Program office so an appropriate room may be reserved. An updated list of committee members is also requested.

If the student does not need assistance with scheduling and room reservations, they should inform the Neuroscience Program office with a current or updated list of their committee members, date, and time of their exam; the program office will submit the Graduate College Request for Doctoral Comprehensive Examination form.

7. After the written proposal is submitted, the student will be required to defend it orally. The oral exam takes place approximately two weeks after submission of the written proposal. The oral defense is approximately two hours in duration, and it is conducted by the Comprehensive Examination Committee.

8. One purpose of the oral exam is to determine whether the student's written submission adequately represents the student's knowledge. For example, a student's proposal may seem to be unsatisfactory due to unclear writing, and it may become clear during the oral exam that the student's knowledge is satisfactory. Or, if a student has included material in the proposal but does not actually understand the material, this may become apparent during the oral exam. At the oral defense, the student may be queried on issues beyond the scope of the written proposal (e.g., farther-reaching implications of the study; broader issues in neuroscience more generally).

9. At the outset of the Oral Defense, the Chair will dismiss the student from the room, and ask committee members for their general appraisal of the written document. Major points of discussion should be broached, and the committee should reach a consensus about important topics on which the student will be queried.

   Importantly: "Fatal flaws" in the written document should be identified well ahead of the Oral Defense meeting, and at the very latest, not less than 24 hours before the Defense. It is not appropriate for committee members to raise "fatal flaws" for the first time at the Oral Defense per se. Other (non-fatal) flaws are fair game for the defense itself, and students should be provided an opportunity to defend their science.

10. By at least the last 15-minute block of the oral Comprehensive Exam session, the Comprehensive Examination Committee will dismiss the student from the

room, and then evaluate the student's performance. This evaluation must include both the written document and oral examination, in approximately equal weights. For example, a deficient written document may be "rescued" by a stellar oral defense; contrarily, an outstanding written document may be outweighed by a very deficient oral defense. The overall evaluation is graded as follows: **Pass**, **Reservations**, or **Fail**. Assuming a 5-person Committee (for Committees of other sizes, see Table below), a **Pass** performance requires at least 4 positive votes. If 2 or more members of the Committee judge the student's performance unsatisfactory and report negative votes, the student will be graded as **Fail**. If there are 2 or more votes of reservations, and less than 2 negative votes, the Committee will report an outcome of **Reservations** (see #10 below).

Committee Member Votes and Results Based on Committee Size

Committee Membership	Pass	Still pass, if:	Fail	Reservations
Seven Members	5 positive votes	2 negative votes*	3 negative votes	3 reservations votes
Six Members	4 positive votes	2 negative votes*	3 negative votes	3 reservations votes
Five Members	4 positive votes	1 negative vote*	2 negative votes	2 reservations votes
Four Members	3 positive votes	1 negative vote*	2 negative votes	2 reservations votes

**Or a member who is unable to attend*

11. A vote of **Reservations** occurs when a Committee member judges that the deficiencies displayed by the student were modest and can be readily rectified. An overall grade of **Reservations** occurs when 2 or more Committee members vote "Reservations" (and there are less than 2 negative votes). In the event of a grade of **Reservations**, the Comprehensive Examination Committee will report these reservations to the student, the Program Director and Graduate College. Feedback (in the form of a letter) from the Comprehensive Examination Committee will be provided within 10 days of the Comprehensive Exam stipulating what actions the student must take to have the Reservations removed.
    a. The student must satisfy the stipulated actions within four months of the original exam, or at an otherwise specified deadline mutually agreed to by the student and the Comprehensive Exam Committee.
    b. At the discretion of the Comprehensive Examination Committee, remedial work may include revision of the written proposal, assignment of specific readings, further in person oral examination in a particular area, additional coursework, or other procedures as appropriate.
    c. The Comprehensive Examination Committee will determine whether or not the student has satisfactorily completed the actions stipulated for removal of the Reservations. In the event that the Reservations have been removed, the student will have passed the comprehensive examination, and the outcome will change from **Reservations** to **Pass**.

d. If a student does not satisfy the stipulated actions adequately and by the specified time, the outcome of the examination will change from **Reservations** to **Fail**.

12. In the event of a report of **Fail** of either the first examination or the Reservations, the student may request a reexamination. The second administration of the comprehensive examination cannot occur earlier than four months after the completion of the first examination.

    A second grade of **Fail** will result in dismissal of the student from the Program for failure to make satisfactory progress.

13. For all outcomes (**Pass, Reservations, Fail**), the Comprehensive Exam Committee will provide a written summary of feedback to the student, within ten days. This summary may vary in scope, depending on the nature of comments and student performance, and feedback is generally expected to be more detailed for **Reservations** and **Fail** outcomes.

14. **Food and beverages**: The Neuroscience Program endorses the March 18, 2020, resolution passed by the Graduate Student Senate that eliminates the expectation placed on graduate students to provide food and beverages at comprehensive exams, committee meetings, or thesis seminars and defenses. Providing food and beverages is strictly optional. This policy also applies to Parts V.C (Prospectus Meeting) and V.D (Final Exam/Thesis Defense) below.

C. Thesis Committee and Prospectus Meeting

1. The student shall select a **Thesis Committee** after successful completion of the Comprehensive Examination. The Thesis Committee shall consist of members of the graduate faculty (normally five in number, although a higher number is permissible in special circumstances) who are particularly competent to advise the student during the thesis research phase of training and to evaluate the dissertation in its final form.

   The student's Thesis Committee will normally overlap substantially with the student's Comprehensive Exam committee, with the exception that on the Thesis Committee, the student's advisor will replace the standing member of the Comprehensive Exam committee. At least four Thesis Committee members must be members of the Neuroscience Program faculty. The composition of the Thesis Committee can deviate from these rules, with special permission of the thesis advisor and Program Director. Deviations must have approval from the Graduate College as well.

   All Thesis Committees must be approved by the Program Director. Students and their Thesis Committees are required to meet at least once per year after

the Prospectus Meeting.

2. **Prospectus Meeting**: By May 1st at the latest after successful completion of the comprehensive examination, the student shall hold a Prospectus Meeting. The Prospectus Meeting is a formal meeting in which the student defends the research proposal that will be the subject of the student's dissertation. The meeting is held with the student's Thesis Committee and is chaired by the student's PhD advisor.

   In unusual and compelling circumstances, students may petition the Program for an extension of the May 1 deadline. Approval of extensions is at the discretion of Program Leadership, and will be done on a case by case basis, taking into account all relevant considerations.

   The prospectus is meant to serve as a sort of "contract" between the Thesis Committee and student – and provided the student performs the work outlined in the prospectus, they would normally qualify for the PhD final defense (see below).

   The prospectus should outline the research the student is proposing for their dissertation (PhD). The research should be original and should align with the spirit of a dissertation (an original contribution from the student). In some cases, some of the research may have already been done (and even published). This is acceptable in principle; however, the majority of the research should be "proposed" (not already finished), so that the Committee has the prerogative to give advice, input, etc.

   a. The student will prepare a written document (this is often an expanded version of the document used for the Comprehensive Examination). This "**prospectus document**" will normally consist of:
      i. **Introduction** (Chapter 1): This is a scholarly, broad and reasonably deep lead-in to the proposed research. The Introduction should be approximately 25 pages in length (double-spaced with .5 to 1.0 inch margins, 11 point font), although it is understood that some Introductions may be longer or shorter than this benchmark, depending on the specific topic and situation. Regardless of actual page length, the Introduction should clearly and comprehensively summarize previous literature on the topic, identify open, unanswered questions and/or deficiencies in the extant literature, and set up the proposed research questions, objectives, and hypotheses. The Introduction will address the scientific premise of the research by comprehensively summarizing previous work on the topic (helping to address the issues of rigor and transparency in research). The Introduction will indicate how the proposed research will address open questions and contribute to existing work.

ii. **Specific Aims** (Chapter 2): It is typically beneficial to include a separate chapter, after the Introduction, that lays out the specific aims and hypotheses/predictions, and includes examples of how the hypotheses can be supported and falsified and examples of possible outcomes.
iii. **Methods** (Chapter 3): The prospectus document should include a Methods section that has detailed, comprehensive information about participants, tests, quantitative approaches, power calculations, and plans for statistical analyses of the data. This will typically go beyond the scope of what would be normally included in an NRSA-type document, due to space constraints of the NRSA format and the potentially expanded scope of the prospectus proposal. The Methods section should address fully the issue of scientific rigor, viz., the strict application of the scientific method to ensure robust and unbiased experimental design, methodology, analysis, interpretation, and reporting of results. There are no page limits for the Methods section, and the Methods should in general resemble the scope and detail that one would normally find in full-length articles in peer reviewed specialty journals (not high-profile journals with highly restrictive word counts).
iv. **Preliminary data** (if applicable) (Chapter 4): Preliminary data should be included, if available.
v. **Other**: If some of the work has been published already, the Prospectus can be rearranged to include a published paper as a separate Chapter.

Working within the overall structure described above, and using the recommended guidelines as a starting point, the Thesis Committee will have the prerogative to set the exact formula for the prospectus document according to the Committee's consensus about best practices for the particular situation. This may necessitate that the student and advisor consult with members of the Thesis Committee prior to finalizing the prospectus document for the Prospectus Meeting.

b. The written prospectus document shall be distributed to the members of the Thesis Committee at least two weeks prior to the Prospectus Meeting. Students may wish to reach out to Committee members ahead of the Prospectus Meeting, to identify areas of concern ahead of time.
c. In the Prospectus Meeting, the student and the Thesis Committee will reach a consensus regarding the planned dissertation project. In short, the meeting should provide a venue for the student and faculty to reach a consensus about the scope of the proposed work. The timeline should be spelled out and agreed upon, so that there is consensus and transparency in expectations for meeting deadlines

and finishing the dissertation. Revisions may be necessary. A follow-up meeting may be necessary on occasion.

d. When all the members of the Thesis Committee have formally approved of the Prospectus, the student and mentor should notify the Program Office that the Prospectus has been defended successfully. The Program Office will record and track this information.
e. The prospectus is, in a nutshell, a blueprint for what the student will do in terms of their dissertation research. This is distinct from the comprehensive exam, which is an NRSA-style proposal that may or may not be (or may be only in part) what the student intends to do for their dissertation research.

3. In addition to the Prospectus Meeting, the Thesis Committee has three principal roles.
    a. To review the organization and progress of thesis research.
    b. To review the written thesis.
    c. To conduct the PhD Thesis Defense (Final Examination, see below).

4. The Thesis Committee shall meet with the student on a regular basis and at least once per year after the Prospectus Meeting, to review the research plans and progress of the student and suggest and approve modifications as appropriate.

    Modifications to planned dissertation work are not uncommon, and are permissible so long as the Mentor and Thesis Committee are in full support. For example, issues may arise during the conduct of the planned work that necessitate reconsideration of projected N's, experiments, control/comparison groups, etc. It is appropriate to consider changes to the planned work, but any such changes should be done in full communication with the mentor and committee members, and the mentor and committee members should approve all such changes before they are implemented.

D. Final Examination (Thesis Defense)

1. The work for the PhD degree culminates in a final oral examination (Thesis Defense) administered on campus.

2. In accord with Graduate College rules, the Final Examination may not be held until the next session after satisfactorily completing the comprehensive examination; however, a student must pass the final examination no later than five years after satisfactorily completing the comprehensive examination. Failure to meet this deadline will result in a reexamination of the student to determine his or her qualifications for taking the final examination.

    The procedures to be followed are the same as those for the comprehensive examination (see Section IV.B. above).

3. The Final Thesis Seminar is open to the public. Friends and family are encouraged to attend the Thesis Seminar. The subsequent Thesis Defense is private and administered by the Thesis Committee; other members of the faculty of the Graduate College are especially invited to attend and subject to the approval of the Thesis Chair, to participate in the examination.

4. Thesis Defense (Final Examination): The student is required to present to each member of the Thesis Committee a complete copy of the thesis at least two weeks prior to the final defense date.

   At least two weeks prior to the scheduled exam, the student must submit to the Neuroscience Program office the date/time/location of their exam so that the Program office can complete and submit the Graduate College Request for Final Examination form. The student should keep in mind that the date of final deposit for each semester (including summer semesters) is set by the Graduate College and is the deadline for receipt of the thesis in order to graduate in that semester. Students who are in the final stages of preparing their thesis should check with the Neuroscience Program Office for important Graduate College deadlines.

5. After a formal Thesis Seminar by the student, the thesis committee shall conduct the Thesis Defense as described below.
   a. The student, through the Neuroscience Program Office, should file an Application for Degree in the Office of the Registrar.
   b. The Thesis Defense shall be scheduled, publicized, and conducted in accordance with procedures set forth in the Manual of Rules and Regulations of the Graduate College of The University of Iowa. The Thesis Defense will be conducted immediately following the Thesis Seminar presented by the student. The Defense is an oral examination administered on campus.
   c. During the Thesis Defense, the student will answer questions relating to the thesis work. These questions can cover a wide range of topics including the development of the hypotheses in the thesis, the relevant literature, experimental procedures, interpretation, and future directions. Intensive questioning on areas of knowledge constituting the immediate context of the investigation is expected.
   d. Report of Final Examination (Thesis Defense): The final examination will be evaluated as **Pass** or **Fail**. For the standard 5-person committee, 2 or more negative votes will make the grade a **Fail** (see Table under section B.9 for other committee sizes and voting outcomes).

      In case of a **Fail** outcome in the Final Examination, the candidate is not eligible for reexamination until the next academic session. The examination may be repeated only once, at the option of the Neuroscience Program.

E. Publication Requirement

Students are required to have a *minimum* of one first-author publication in a peer-reviewed journal prior to graduating with a PhD degree in Neuroscience. The article must be formally accepted and "in press" or published prior to graduation. A co-first-authored peer-reviewed publication will count towards this requirement.

VI. Program Committees

Program Committees provide guidance and execution of the policies and procedures of the Program in all major areas that comprise a PhD training program. The Committees operate autonomously from the Program Director, with the Chair of each Committee serving as a liaison between the Committee and the Program Director.

Committee membership is guided by several principles: (1) There is multi-departmental representation, from both basic science and clinical departments; (2) Faculty members are qualified to serve and are interested in participating; (3) Committee membership is rotated (on a 3-year cycle; see below) so that there is a mixture of more experienced and less experienced members, ensuring continuity of committee purpose and function; and (4) There is student representation on all appropriate committees (students have 1- or 2-year cycles). Faculty and students are invited (or volunteer) to participate on committees by the Program Director.

Additional specific term policies, which apply to faculty members on the Admissions Committee, Seminar & Research Day Committee, Outreach Committee, Comprehensive Exam Committee, Evaluation and Tracking Committee, and Awards Committee, are as follows:

1. A term is 3 years.
2. It is expected that after serving a term, the faculty person will rotate off the Committee.
3. With appropriate justification and at the discretion of Program Leadership, a faculty person may serve a second term on a Committee.
4. Committee Chairs will be selected from amongst Committee members, by the Committee members, and/or by Program Leadership, and with final approval by Program Leadership.
5. For Committee Chairpersons, the outgoing Chair will remain on the Committee for one additional year as ex officio, in order to provide the new Chair with advice and guidance.

A. Executive Committee

The **Executive Committee** sets overarching agenda and policy for the Program. The Executive Committee meets approximately once every two months, and more often as necessary, to review and discuss issues of general program importance. Membership is comprised by the Program Director, Associate Director, Chairs of other Program committees, a student representative, and a Graduate College leader (ex officio).

B. Admissions and Recruitment Committee

The **Admissions and Recruitment Committee** is responsible for all activities related to recruitment and admissions. A major function is the annual review of applicants,

including selection of applicants for on-campus interviews, admission recommendations, and recommendations for nominations for special fellowships (e.g., Presidential, Dean's). The Committee meets frequently during the admissions "season" (December through March).

The Admissions and Recruitment Committee is comprised by approximately 7-8 faculty members who represent the diverse topics and expertise of the Program (covering the range from cellular/molecular to behavioral/systems neuroscience). There are 3 student representatives, chosen to provide continuity of expertise and knowledge.

An important function of the Admissions and Recruitment Committee is recruitment. This includes targeted efforts to recruit promising UI undergraduates into our Program, and participation in recruitment efforts such as attending fairs and promotional activities at colleges and universities throughout the nation in order to promote our Program to undergraduates.

C. Student Advisory Committee

The mission of the **Student Advisory Committee** (SAC) is to enhance graduate student experience and facilitate successful and timely completion of the PhD degree in Neuroscience. The SAC meets periodically with all students in order to monitor progress, provide guidance and feedback, and identify potential problems that threaten progress. In cases in which students are not making satisfactory progress, and/or in which major problems are evident, the SAC will bring the situation to the attention of the Program Director and make recommendations for intervention.

The SAC is comprised by approximately 4 faculty members who represent the diverse topics and expertise of the Program (covering the range from cellular/molecular to behavioral/systems neuroscience) and ideally have experience in psychology and/or counseling.

The SAC meets with all students in the Program on a regular basis to specifically:

- Provide a formal process to monitor and track students' progress in laboratory rotations and coursework, thesis requirements and research progress
- Provide opportunities for setting goals to achieve the expected milestones and acknowledging achievements
- Provide help to clarify the graduation process along with setting goals and expectations
- Identify challenges and issues that threaten progress
- Oversee professional development
- Provide faculty feedback from a neutral perspective

In preparation for their individual meetings with the SAC, students are responsible for completing 3 documents and submitting them to the program office; SAC members will receive copies prior to their scheduled meetings with students.

1. A **Progress Report**, the expectations for the content of this report evolve with progress through the program and are explained fully in the schedule below.
2. The **Graduate Student Laboratory Performance Rubric** completed jointly with the research advisor, see **Appendix III.**
3. An **"Individual Development Plan" (IDP).** This tool focuses on the larger career goals of a student and facilitates mentee-mentor discussions about ways to enhance the research training period with opportunities to meet tailored professional development and networking goals. All students are required to complete the comprehensive career planning tool "myIDP" hosted by Science Careers at least once. Alternative versions of IDPs can be obtained from the Graduate College, or students may use the Program's simplified and tailored framework for self-assessment based on the core competencies that graduate students are expected to obtain per the Society for Neuroscience called the **"UIowa Neuroscience Graduate IDP", see Appendix IV**.

The SAC will meet with students in the Program according to the following schedule:

1. **First-year Students:**
   The SAC will review progress in coursework twice in the first year of the program. Around November 1, the Chair of the SAC will be provided with a midterm grade report for all first-year students by the Program Coordinator. Around January 1, the Program Coordinator will provide the SAC Chair with the final Fall semester grade reports and all available laboratory rotation evaluations for all first-year students. For any student who is evidencing academic difficulties (grades below B in any course), the Chair will arrange a meeting with the student, to discuss the situation, identify problems and challenges, and recommend solutions.

   The SAC will meet individually with all 1st year students in early April. Appointments will be scheduled with the assistance of the Program Coordinator. Prior to this meeting, students will complete their laboratory rotation reports, including the **Laboratory Performance Rubric** for each rotation and a **Progress Report** focused on the achievements or challenges encountered thus far with coursework, laboratory rotations, and the plans to affiliate with the lab of their preferred research advisor to carry out their thesis research.

   The **first annual IDP** will be completed after this meeting with the SAC with the guidance of the Research Advisor. A copy must be submitted to the program office **no later than July 15th**. Students with Fellowships or Awards from the Graduate College may be expected to complete an IDP earlier in the first year.

2. **Post-comprehensive Exam Students:**
   - **Third-year Students:**

The SAC will meet individually with all students between September 15 and October 15 following the successful completion of the comprehensive exam. Appointments will be scheduled with the assistance of the Program Coordinator.

Prior to the meeting, students will provide the Program Coordinator with a **Progress Report** in which they provide the following information: (i) A short summary of the outcome of the Comprehensive Exam process; (ii) Plans for forming a thesis (PhD) committee; and (iii) Plans for a Prospectus Meeting. This Progress Report along with an annual Laboratory Performance Rubric and an IDP will be made available to the SAC.

- **Fourth-year (and beyond) Students:**
  Annually, around July 15, the SAC will meet individually with all the senior students to review their progress. Prior to this meeting, **students and their Thesis Advisors will complete separate Progress Reports** focused on the student's progress on their thesis, research (including presentations at scientific meetings, publications, and grant submissions), and career planning (e.g., finding a postdoctoral training opportunity). This Progress Report along with an annual Laboratory Performance Rubric and an IDP will be made available to the SAC.

D. Comprehensive Examination Committee

There are two components to the **Comprehensive Examination Committee**: a) the Standing Committee, and b) the unique student-proposed Committee, assembled individually by each student.

The Standing Committee is charged with setting the format and agenda for the Comprehensive Examination (offered annually in the summer), and with Chairing each student's Examination Committee. The Standing Committee consists of a Chair and a Vice-Chair. Each will normally serve a 3-year term. The Vice-Chair will then become the Chair. The Standing Committee meets around the first of the calendar year to finalize plans for the examination.

The Committee shall consist of 5 Faculty members who will usually be the same as members of the Thesis Committee, with the exception that the thesis advisor is replaced by a member of the Standing Committee.

Each student's Comprehensive Examination Committee is Chaired by a member of the Standing Committee. The Chair is chosen randomly by the Standing Committee chairperson (who will distribute workloads evenly across the Standing Committee members). The Chair is responsible for conducting the Examination, assimilating feedback from the Committee, and communicating this to the student and the Graduate College. The Chair is responsible for composing a detailed feedback letter for the student, outlining strengths and weaknesses in the Comprehensive Exam (both written and oral portions). The feedback letter is of particular importance in

cases of Reservations or Fail.

E. Seminar & Research Day Committee

The **Seminar & Research Day Committee** is responsible for arranging speakers for the Neuroscience Seminar and Neuroscience Research Day. The Seminar & Research Day Committee has two subcommittees comprised of students, with both subcommittees chaired by the same faculty member.

The Neuroscience Seminar (NS) is a flagship seminar series that blends inside and outside speakers. The **Seminar Subcommittee** is responsible for scheduling all speakers in the seminar series and making alternative arrangements in the event of cancellation. The Seminar Subcommittee invites 1-2 outside speakers for the Seminar Series per semester, setting up the itineraries for those speakers and taking the lead on hosting duties. The Seminar Subcommittee also works with the Evaluation and Tracking committee to monitor faculty and student attendance at Seminar (attendance is mandatory for all students).

The annual Neuroscience Research Day (NRD) brings Program members together to showcase recent scientific advances. The **Research Day Subcommittee** is responsible for inviting and hosting a keynote speaker, arranging short presentations from program faculty seeking rotation students, and organizing a poster session for all students to present recent scientific progress. The Research Day Subcommittee works with the Program Administrator to arrange the date, venue, supplies (e.g. poster boards) and catering for NRD.

F. Outreach Committee

The **Outreach Committee** is subdivided into the **Community Engagement Subcommittee** and the **Brain Bee Subcommittee**. There are two faculty leaders, each assigned to a subcommittee.

The **Community Engagement Subcommittee** is responsible for organizing and implementing activities associated with community engagement (e.g., Kids GoSTEM, Iowa State Fair), as well as student-led initiatives aimed at the high school and UI undergraduate levels to widen the pipeline of students into Neuroscience. This Subcommittee also provides off- and on-line access to information about support resources available on campus, in coordination with the UI Office of Civil Rights Compliance (OCRC).

The **Brain Bee Subcommittee** is responsible for the organizing and implementing activities associated with the annual Iowa Brain Bee.

G. Evaluation and Tracking Committee

The **Evaluation and Tracking Committee** is responsible for monitoring the quality of the training program, soliciting systematic feedback from faculty and trainees

regarding the strengths and weaknesses of the training program, and monitoring the progress and outcomes of students who graduate from the training program (we keep track of our graduates for 10 years, and longer in most cases). The committee meets twice annually, or more frequently as needed, and reports on its findings and makes recommendations to the Program Directors and Executive Committee regarding changes, problems, or aspects of the program that are particularly effective. The Committee reviews and monitors all aspects of the training program.

With regard to faculty, the Committee monitors faculty participation in program activities and committee work, conducts periodic faculty evaluations and makes recommendations for re-appointment, and monitors compliance with implicit bias training by admissions committee members. The Committee also monitors all aspects of the admissions process as well as timely progression of students through the program. This includes evaluation of the applicant pool, interview and matriculation process, and student success in meeting benchmarks including the comprehensive exam, prospectus, submission and success of fellowships (both intramural and extramural), time-to-degree, and outcomes. The Committee works with the Admissions Committee to provide annual feedback to Program Directors about progress in meeting civil rights compliance goals.

H. Awards Committee

The **Awards Committee** is responsible for overseeing all procedures associated with the Neuroscience Graduate Student Awards (see section VII below). This Committee selects faculty and students for judging various nominees and makes recommendations to the Program Director for award winners.

I. Committee for Camaraderie in Neuroscience

The **Committee for Camaraderie in Neuroscience** is responsible to foster a sense of community and facilitate interpersonal relationships by organizing, planning, and executing extracurricular and community events for students, faculty, staff, and families of the Neuroscience PhD Program. This committee has representation from each cohort (different class years), with two students serving as chair and co-chair. This committee meets as a whole at least once a semester to discuss upcoming events, ideas, and logistics.

J. Student Study Section (Mock Comprehensive Exam) Committee

The **Student Study Section (Mock Comprehensive Exam) Committee** provides student feedback on practice comprehensive exam oral defenses. This is accomplished via formative feedback to students preparing for their oral comprehensive exam defense. This committee is fully student-run and student-populated.

Purpose and Activities: The Committee coordinates mock exam sessions designed to simulate the oral defense. Mock exam committees are not limited to student

study section members, but are assembled based on members' research expertise, familiarity with the student's faculty exam committee, availability, and any stated preferences of the examinee. Mock exams typically take place 1-4 weeks before the scheduled comprehensive exam.

Feedback focuses on the oral presentation and questioning. Students are encouraged to share their written exam document with the mock committee in advance to provide context. Feedback is informed both by students' prior exam experience and by the expectations outlined in the program's comprehensive exam rubric.

Student Participation: Mock exams are voluntary but strongly encouraged, as they help students gain familiarity with the structure, pacing, and expectations of the comprehensive exam. The committee chair may reach out prior to a student's scheduled comprehensive exam, but students are ultimately responsible for initiating the process by contacting the Student Study Section when they want to schedule a mock exam. Serving on mock committees is also voluntary but provides post-comps students with an opportunity to develop evaluative feedback skills and mentorship experience.

Committee Leadership Responsibilities: The chair of the Student Study Section attends pre-comps informational meetings and serves as a point of contact for students preparing for their comprehensive exams. The chair also maintains communication with the chair of the faculty comprehensive exam committee and keeps a current list of students planning to take their exams within the upcoming year.

VII. Neuroscience Graduate Student Awards

Neuroscience graduate students are eligible for several important merit-based awards, as outlined below. Several ground rules for these awards are in place, including:

1. The Young Investigator Award and Rotation Talk Award are specific to a cohort of students (3rd year and 1st year, respectively).

2. For all other Awards, a student can only win the award once during their tenure as a graduate student in our Program. Multiple nominations are allowed.

3. As required by federal regulations, financial prizes to students will be routed through the Office of Financial Aid as a credit to a student's U-bill.

A. Gloria Lee Student Service Award

This award is given to up to two neuroscience graduate student(s) who have displayed exemplary efforts in service to the Neuroscience Program in the previous year. "Service" is broadly defined and includes contributions to the Program per se (e.g., serving on core Program committees) and contributions to the broader community (e.g., Brain Bee, Research Day, outreach).

Nominations for this award are made by individual faculty, and the award may be given to a graduate student(s) of any year in the program. The awardees are selected from the nominees by the Awards Committee. The Service Award carries a financial prize of $200 each. In 2019, this award was re-named in honor of 20-year faculty member, Gloria Lee, PhD, whose long-standing exemplary contributions to the Program truly define service, as consistently going above and beyond.

B. Publication Award

This award is given to a neuroscience graduate student for the best primary research article within the past year. The graduate student must be the 1st author (or joint 1st author) on the publication, and the article must be published or accepted for publication at the time of nomination. Articles submitted for this award should come from the graduate student, and the nominated articles will be evaluated by the Awards Committee. The Publication Award carries a financial prize of $500.

C. Young Investigator Award

This award is given to the neuroscience graduate student who, during their first two years in the Program, has shown the greatest promise for a future career in neuroscience, as demonstrated by their performance in the laboratory and in classes. All students in their third year who have successfully completed their comprehensive exams will be considered (this would include MSTP students who

may be in their second year but are post-comps). The awardee will be selected by the Awards Committee. The Young Investigator Award carries a financial prize of $100.

D. Rotation Talk Award

This award is given to the 1st year graduate student who gives the best rotation talk at the end of their first year. "Best" is defined as the presentation per se (including the quality of slides, presentation style), not the data per se. All 1st year students giving a rotation talk will be considered for the award. The awardee will be selected based on peer and faculty evaluations made during the rotation talks. The Rotation Talk Award carries a financial prize of $25.

E. Best Elevator Talk Award

This award is given to the student who gives the best Elevator Talk at Seminar, during a Fall-Spring cycle of seminar talks. All students who presented at Seminar during the two semesters will be eligible. The awardee will be selected based on peer review, which will be implemented via a Likert-scale rating completed by students immediately after the seminar. The Best Elevator Talk Award carries a financial prize of $25.

F. Poster Award for Research Day

This award is given to the neuroscience graduate student with the best poster and poster presentation made during Research Day (both the quality of the poster and the quality of the presentation are factored into this award). A committee of three faculty will select the awardee. The Poster Award carries a financial prize of $300.

G. Data Blitz Award

This award is given to the neuroscience graduate student who gives the best data blitz presentation at the annual neuroscience Data Blitz. A committee of graduate students and postdoctoral fellows will select the awardee. The Data Blitz Award carries a financial prize of $25.

VIII. Petitions, Appeals, and Academic Grievances

A. Petitions

Requests for waiver or deferment of a requirement may be submitted in writing to the Program Director. The request letter should be prepared by the student, in conjunction with the student's Advisor/Mentor, and should be signed by both. The letter should provide clear justification for the request. The Program Director will act on the request, by either making a decision directly or passing the request along to the Student Advisory Committee for a recommendation.

B. Appeals

All actions of the Neuroscience Program, the Program Director, the Student Advisory and other Committees, and other program units and staff are subject to appeal by the following procedure.

1. The student must specify in writing the action that is being appealed. This is to be in the form of a letter addressed to the Program Director.

2. After reviewing the letter of appeal, the Program Director shall appoint a committee of three members from the Neuroscience Program faculty. The committee members shall have no direct involvement in the action or incident that is being appealed and shall be reasonably expected to render an unbiased opinion on the matter at issue.

3. This committee will examine all documentary information available to it, including items provided by the student and contained in the student's academic file and other Program files as appropriate.

4. This committee may meet with the aggrieved party or parties for oral discussions of the appeal and may also meet with other individuals involved in the dispute.

5. Within one month of being convened, this committee shall present a written report to the Program Director, which will include recommendations for resolution of the appeal.

6. The Program Director shall report these recommendations to the Program Steering Committee and/or the Dean of the Graduate College.

7. The Program Steering Committee shall be the final arbiter on all appeals relating to Program Policies within its purview. The Dean of the Graduate College shall decide all appeals arising from rules and regulations of the Graduate College.

8. The Program Director shall inform the student(s) within one week following decisive action on the appeal.

C. Academic Grievances

The grievance procedure to employ for a complaint will depend on the area involved (student life, academic difficulties, employment, faculty). Generally, students first explore how to pursue a grievance with their mentor or with program leadership (Program Director, Associate Director, Program Administrator). An attempt should be made to resolve grievances at the lowest level, before escalating to higher levels. However, if students are uncomfortable or dissatisfied using this route, the Associate Dean for Academic Affairs in the Graduate College will counsel them on options available.

1. Informal Academic Complaint Procedure of the Graduate College
2. Formal Academic Grievance Procedure (AGP) of the Graduate College

In addition, the Counseling Service, the Office of the Ombudsperson, and the Office of Civil Rights Compliance (OCRC) will counsel graduate students on a confidential basis and will assist students in selecting an appropriate grievance procedure.

IX. Scientific Ethics: Guidelines and Other Resources

A. Policy on Authorship of Publications

To merit authorship, an individual should:

- Contribute significant ideas and experimental design to the project,
- Take part in the actual experimentation and data analysis,
- Be able to present and defend the work at a scientific meeting. (Exceptions may be made when one author has carried out a unique, sophisticated study or analysis.)

Students should also read "Ethical Obligations of Authors" in Accounts of Chemical Research 18(12), pp. 356-57 (1985).

B. Scientific Misconduct

The U.S. Public Health Service has a formal policy dealing with misconduct. It is described in a special July 19, 1985, issue of the NIH Guide to Grants and Contracts. At the very least we must respect this statement. It says in part:

It is the policy of the PHS to maintain high ethical standards in research and to investigate and resolve promptly and fairly all instances of alleged or apparent misconduct.

As defined by the policy, "misconduct" is:

1. Serious deviation from accepted practices in carrying out research or in reporting the results of research. This includes fabrication, falsification, or plagiarism of data.
2. Other examples include material failure to comply with Federal requirements affecting specific aspects of the conduct of research; e.g. the protection of human subjects and the welfare of laboratory animals.

Misconduct does not include errors of judgment, errors in the recording, selection, or analysis of data or differences in opinions involved in the interpretation of data.

Scientific misconduct is grounds for immediate dismissal from the Neuroscience Ph.D. Program.

C. Academic Misconduct

Any form of cheating or plagiarism in respect to curricular requirements is grounds for dismissal. Plagiarism is taking another's ideas, words, or creative works and presenting them as your own, or presenting them without proper attribution (giving credit to the original source).

D. Sexual Harassment

The University of Iowa has clearly stated guidelines and regulations pertaining to sexual harassment. A copy of these rules is available from the Graduate College and the University of Iowa and is required reading for all incoming students.

E. Counseling Resources

We need to be constantly vigilant about not only the scientific health and status of our students and faculty, but also about their mental health. Graduate school can be extremely stressful for students and faculty alike. We would like to remind our students and faculty that if concerns arise about their mental health status, for whatever reason, it is appropriate to seek help.

The University offers counseling services for students at University Counseling Service (3223 Westlawn, 335-7294), for faculty at Faculty Services (5101A D, 335-2085), and online resources with Build a Career Build a Life. Individual faculty or students should feel free to contact those services directly or, if they feel it appropriate, to talk with the Program Director about the possible need for interventions.

F. Office of the Ombudsperson

The Office of the Ombudsperson (3rd floor of Jefferson Building, 129 East Washington Street) provides conflict management and problem solving to the entire campus community. Their services are confidential, neutral, informal, and independent. Appointments are suggested and can be scheduled by phone, 319-335-3608, or by email, ombudsperson@uiowa.edu. Detailed information is available on their website: https://uiowa.edu/ombuds/.

G. Office of the Civil Rights Compliance (OCRC)

The University of Iowa has clearly stated guidelines and regulations pertaining to civil rights. The Office of Civil Rights Compliance furthers the university's compliance obligations under Title VI and VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, the Americans with Disabilities Act, and related federal and state anti-discrimination laws. They provide guidance, resources, and support to foster a welcoming, accessible, and respectful campus for all.

X. Guidelines for Faculty Membership

A. Roles and Responsibilities of Faculty Members

Faculty members serve as the primary training mentors for graduate students. Faculty members participate fully in Program activities, including Program committees, courses, seminars, outreach activities, and supervision of lab rotations by neuroscience students. Many of the faculty members serve as training preceptors on the Neuroscience Training Grant and have sufficient funding to support graduate students in their laboratories.

B. Protocol for Appointment to the Neuroscience Program Faculty

1. Applications for faculty membership will be reviewed as they are received.

2. Initial appointment criteria to the Program Faculty include:
    - An interest in the field of neuroscience
    - An active research program that involves neuroscience-related research
    - A record of peer-reviewed publications, at least some of which pertain to neuroscience
    - Extramural funding or evidence of potential to attract such funding
    - Evidence of ability as a mentor or potential for such
    - Evidence of ability as a teacher or potential for such

3. Interested faculty candidates should start by contacting the Program Director. Candidates should send the Program Director:
    - A Letter of Interest briefly describing their background and interest in neuroscience research, teaching and mentoring; and
    - A Curriculum Vitae (CV) or NIH-type or NSF-type Biosketch. The Letter of Interest and CV/Biosketch must include a statement of the applicant's commitment to inclusive excellence.

   The Program Director will meet with the applicant for an interview and discussion of the applicant's interests and expectations for becoming a Neuroscience Program faculty. If the Program Director approves, the application will move forward.

    - Following approval by the Program Director, the applicant should request a letter of support from the applicant's DEO. This letter should indicate that the DEO supports the faculty person's involvement in Neuroscience Program activities, such as serving on committees, teaching, supervising students (lab rotations, possible mentoring of PhD students), attending seminars, and promoting inclusive excellence.

    - Then, the Program Administrator will distribute the application materials (Letter of Interest, CV, and DEO support letter) to the Faculty of the

Neuroscience Program for a vote. A positive endorsement of 60 percent of responding faculty will be required for membership. Voting will be conducted electronically via Qualtrics.

- If the vote is positive, then the Program Administrator will convey a recommendation for faculty membership to the Graduate College, where the formal appointment will be made.

- Appointments will be for 3 years and will be renewable pending appropriate activity and engagement within the Program (see III below). New members will be asked to prepare a brief paragraph of research interests for inclusion in the Program brochure and website. New members will be formally introduced via email at the time of appointment. They will also be introduced at the opening Seminar of the Fall semester and at

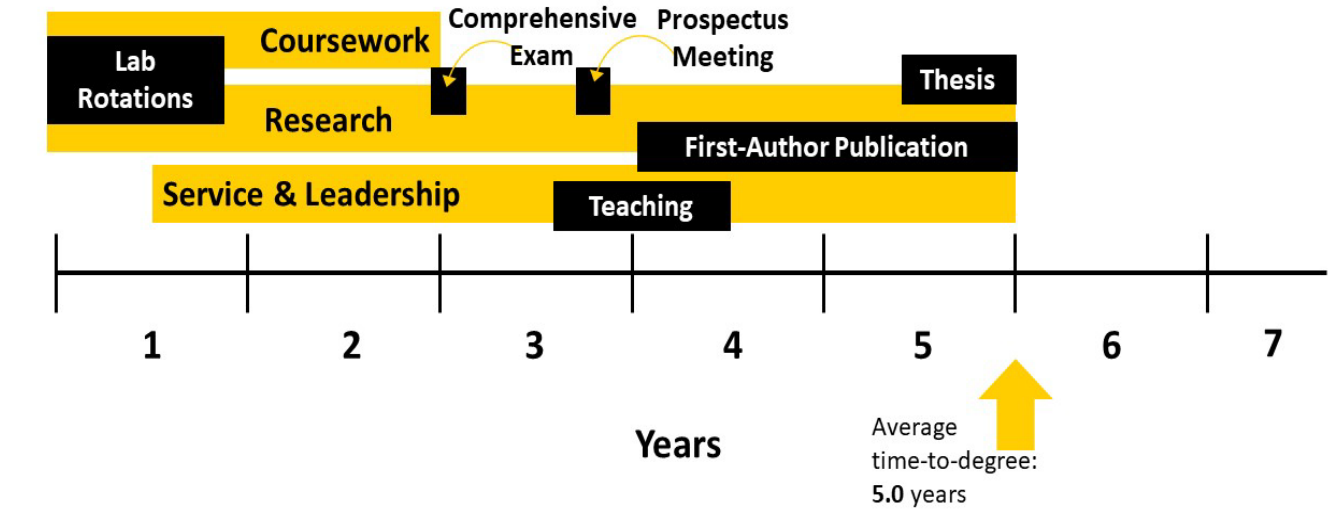
C. Reappointment of Program Faculty

Upon expiration of each term of appointment, the Evaluation and Tracking Committee will review the participation of each faculty member in the activities of the Program. Any combination of activities supporting the success of the Program is welcome, including mentoring, teaching, and outreach as specified in the following rubric. Faculty are expected to accumulate a minimum of 5 participation points every 3 years for re-appointment. Individuals who do not meet this threshold at the time of evaluation will not be renewed for another 3-year term of appointment. If desired, those individuals may request a one-year extension. Extension requests, along with a plan to increase active participation in the program should be submitted by email and must be approved by the Program Director.

Activity	**Participation Point Value**
Serve as the PhD thesis advisor or co-advisor for a Neuroscience graduate student	5/year/student
Sponsor a lab rotation for a Neuroscience graduate student	2/student
Serve on the comprehensive exam committee of a Neuroscience graduate student	1/exam
Serve on the dissertation committee of a Neuroscience graduate student in another lab	1/year/student
Serve on a Neuroscience Program committee	3/year, 4/year for committee chair
Teach in a required Neuroscience course	4/semester, 1/semester for guest lectures/discussions
Teach in an elective course taken by 2 or more Neuroscience graduate students	3/semester

Lead a module of Responsible Conduct of Research training	1/year
Attend biannual faculty meetings	0.5/meeting
Serve as a poster judge at Neuroscience Research Day	1/year
Attend Neuroscience Seminar and submit an evaluation of a student's presentation	1/semester
Interview applicants or give a presentation during a graduate interview weekend	1/year
Represent the program at a conference (MidBrains, SfN, SACNAS, ABRCMS, etc.)	3/meeting
Participate in the Neuroscience-affiliated postbac program, iDREAM	3/student if research mentor, 1/student for faculty advisory committees
Host a Summer Neuroscience BSURP student	1/student
Additional activities that promote the success of Neuroscience students and the Program	2/activity at the Director's discretion

Appendix 1: Timeline to PhD



□ **First year coursework** - see Section V. A.
- □ Principles of Neuropsychology
- □ Fundamental Neurobiology I
- □ Functional Neuroanatomy
- □ Elective
- □ Neuroscience Seminar
- □ Neuroscience Research

□ **Second year coursework** – see Section V. A.
- □ Neurobiology of Disease
- □ Statistics/Quant Lit
- □ Scholarly Integrity/RCR - I
- □ Fundamental Neurobiology II
- □ Elective
- □ Scholarly Integrity/RCR – II
- □ Neuroscience Seminar
- □ Neuroscience Research

□ **Comprehensive exam** – see Section V. B. (summer after 2nd year for PhD students & summer after 1st year for MSTP students)

□ **Prospectus meeting** – see Section V. C. (by May 1st after comprehensive exam was completed)

□ **TA requirement** – see Section IV. H. (typically done in 3rd or 4th year)

□ **Annual thesis committee meetings** – see Section V. C.

□ **Annual meetings with Student Advisory Committee** – see Section VI. C.

□ **Service/Leadership:** To create well-rounded professionals, the Program expects a level of service/leadership to the Program and/or University from all students (typically beginning after the first semester of studies) – see Section VI. E. to I.

□ **First-author publication** – see Section V. E. (typically done 3rd year+)

□ **Thesis seminar, dissertation defense, and deposit of thesis** – see Section V. D.

Appendix 2: Best Practices for Graduate Students and their Research Advisors

The progress, development and success of a graduate student hinges on the commitment of both the student and the research advisor. Basic principles of best practices in mentoring and graduate student life appear in the two lists that follow. Graduate students should be aware of what is necessary for their success and their advisors likewise should be aware of practices that promote their students' best interests.

Although the concepts of commitment and responsiveness underlying the lists of expectations apply to all disciplines, the specifics of these principles vary considerably among the biological sciences, physical sciences, social sciences, and humanities. The following guidelines are generally construed and are generally appropriate for students in the Neuroscience Program, but not every detail will apply to every student.

I. Expectations of Graduate Students

1. A graduate student has the primary responsibility for successful completion of his or her degree. A graduate student should be committed to his or her graduate education and should demonstrate this by efforts in the classroom and in research. A graduate student is expected to maintain a high level of professionalism, self-motivation, engagement, excellence, scholarly curiosity, and ethical standards.

2. A graduate student should meet regularly with the research advisor and provide updates on the progress and results of ongoing research.

3. A graduate student should be knowledgeable of the policies and requirements of the graduate program, the graduate college, and the institution. The student should strive to meet these requirements, including teaching responsibilities.

4. A graduate student should work with the research advisor to develop a thesis/dissertation project. This will include establishing a timeline for each phase of the work. The student should strive to meet the established deadlines.

5. A graduate student should work with the research advisor to select a thesis/dissertation committee. The student should meet with this committee at least annually (or more frequently, according to program guidelines) and be responsive to the advice of and constructive criticism from the committee.

6. A graduate student should discuss policies on authorship and attendance at professional meetings with the research advisor. The student should work with the advisor to submit all relevant research results that are ready for publication in a timely manner prior to graduation.

7. A graduate student should attend and participate in meetings, seminars and journal clubs that are part of the educational program.

8. A graduate student should contribute to maintaining a research environment that is intellectually stimulating, emotionally supportive, safe, and free of harassment.

9. A graduate student should participate in the institution's Responsible Conduct of Research Training Program and practice those guidelines in conducting thesis/dissertation research.

10. A graduate student should discuss policies on work hours, sick leave and vacation with the research advisor or graduate director. The student should consult with the advisor in advance of any planned absences.

11. A graduate student should acknowledge primary responsibility to develop a career following the completion of the doctoral degree. The student should seek guidance from available resources, including the research advisor, career counseling services, thesis/dissertation committee, and any other mentors.

12. A graduate student should comply with all institutional policies, including academic program milestones. The student should comply with both the letter and spirit of all best practices and policies of the institution.

II. Expectations of Research Advisors

1. The research advisor should be committed to the education and training of the graduate student as a future member of the research community.

2. The research advisor should meet one-on-one with the student on a regular basis. The advisor should provide timely feedback on the student's written work to facilitate ongoing progress on the thesis/dissertation.

3. The research advisor should be knowledgeable of the requirements and deadlines of his/her graduate program as well as those of the institution, including teaching requirements and human resources guidelines. The research advisor should guide the student in these areas to ensure academic and professional success.

4. The research advisor should help to plan and direct the graduate student's project, set reasonable and attainable goals, and establish a timeline for completion of the project. The research advisor should anticipate conflicts between the interests of externally funded research programs and those of the graduate student and should help keep these interests from interfering with the student's thesis/dissertation research.

5. The research advisor should help a graduate student select a thesis/dissertation committee. The advisor should assure that the committee meets at least

annually (or more frequently, according to program guidelines) to review the graduate student's progress.

6. The research advisor should discuss authorship policies regarding papers with the graduate student. The advisor should acknowledge the graduate student's contributions and work with the graduate student to present and publish his/her work.

7. The research advisor should encourage the graduate student to attend scientific/professional meetings and make an effort to secure and facilitate funding for such activities.

8. The research advisor should provide an environment for his/her graduate students that is intellectually stimulating, emotionally supportive, safe, and free of harassment.

9. The research advisor should discuss intellectual policy issues with the student regarding disclosure, patent rights and publishing research discoveries.

10. The research advisor should not require the graduate student to perform tasks unrelated to his/her academic and professional development.

11. The research advisor should provide career advice and assist in finding a position for the graduate student following his/her graduation. The advisor should provide honest letters of recommendation and be accessible for advice and feedback on career goals.

12. The research advisor should lead by example and facilitate the training of the graduate student in complementary skills needed to be a successful researcher, such as oral and written communication, grant writing, lab management, animal and human research policies, the ethical conduct of research, and scholarly professionalism. The advisor should encourage the student to seek opportunities in teaching, if not required by the student's program.

13. In disciplines where it is customary, the research advisor should provide financial resources for the graduate student to facilitate the student's thesis/dissertation research. Advisors have the prerogative to pay their student's mandatory fees associated with submitting a dissertation, including a degree application fee, a publication and binding fee, and a thesis fee. However, they are not required to do so.

Appendix 3: Graduate Student Laboratory Performance Rubric

I. Graduate Student Laboratory Performance Rubric Instructions:

The purpose of this rubric is to support the holistic formative development of the graduate student (mentee) in skills that are required to be an independent successful scientist. When filling out this rubric, it is important for mentor and mentee to have an honest conversation about the mentee's skill level in each of the broad categories listed. Note: sample descriptors in each section of the table are meant to aid in this process.

- When used to evaluate a 1st year lab rotation, the mentor should pay special attention to the early professional stage of the students. The Independence category and space provided for "Goals Upcoming Semester" should be left blank.
- A rating of "Meets Expectations" as the average across categories is the goal for mentors of post-comps mentees! Ratings of "Exceeds Expectations" or "Outstanding" for one or more of the categories should be reserved for when a student is doing something deserving recognition that their average peer is not doing.

Once mentor and mentee have collaboratively filled out the main body of the rubric, they should summarize the key points of their discussion in the space provided below the table (or on a separate page if more room is necessary). Note: areas of improvement should directly relate back to the rubric table and should not include product goals (i.e., writing papers, grants, etc.). Similarly, goals for the upcoming semester should be directly related to the areas of improvement identified and should be written as SMART goals (i.e., Specific, Measurable, Achievable, Relevant, and Time-Bound).

Mentors and mentees often find it easier to focus on larger product goals (i.e. papers, grants, learning specific research techniques). These are important but better suited for discussions centered on the IDP which compliments this rubric by laying out long-term career aspirations and the larger product goals that are needed to achieve those aspirations. Whereas this rubric is best used as a compass/framework for measuring progress in the skills required to achieve the larger product goals.

Sample application
A 4th-yr student has not made progress on their paper. To better understand why the mentor and mentee can use this rubric which should reveal if the student is struggling with independence, attentiveness, research progress or some combination of these skills. Marking the appropriate criterion as "Areas for Improvement"

II. Graduate Student Laboratory Performance Rubric Link:

An editable version of this document is available on the website

Appendix 4: Neuroscience Student Individual Development Plan (IDP)

I. What is the IDP?

The Individual Development Plan (IDP) is a tool graduate students use periodically to reflect on their training progress, identify professional goals, create manageable plans, and get feedback from their mentors. We encourage everyone to use the comprehensive career planning tool myIDP hosted by Science Careers at least once. Alternative versions of IDPs can be obtained from the Graduate College. Recognizing that effective use of an IDP varies from person to person and as one progresses through graduate school, here we provide a simplified and tailored framework for self-assessment based on the core competencies that graduate students are expected to obtain per the Society for Neuroscience.

II. Process

1. **Self-reflection –** Spend some time reflecting and journaling about your time in graduate school. *This is a private exercise*. Prompts include: Are you in good physical, mental, and emotional health?
    - Is your research stimulating?
    - Is your lab supportive?
    - Have you identified a career you want to pursue once you obtain your PhD?
        - (Yes) Do you know what you need to obtain your desired job?
        - (No) How can you learn more about your career options?

2. **Complete the Milestones chart –** Check off the description that best describes your current skill level in each of the five core competencies (conceptual knowledge, research skill development, rigorous & responsible conduct of research, communication skills, and career development). Be honest, if you are below or above the level indicated by the time you have been in graduate school (pre-comps, post-comps, approaching graduation) it will be important to discuss your specific needs with your mentors.

3. **List 2 accomplishments or challenges** – These should be items from the last year (or last time you completed an IDP). Consider any recent experimental methods or results, your coursework, interpersonal relationships in your research group/department/program, your confidence in giving seminar/conference presentations, and your ability to network with peer and/or senior scientists.

4. **List 2 specific goals to complete in the coming year** – These should be "SMART" goals, simple and feasible ways to build on past accomplishments or solve challenges to ensure you progress towards mastery of the core competencies listed in the Milestones chart.

5. **<u>Discuss your Milestones chart and new goals with your mentors</u>** (*i.e.* Research advisor, Student Advisory Committee, Thesis Committee members) to prompt a discussion about your progress and additional opportunities for professional growth.

III. Visual Example of IDP Planning Guide

Milestones for Graduate Training in Neuroscience			
	Pre-Comps (~years 1-2)	Post-Comps (~years 3-4)	Ready to Graduate (~years 4-6)
Conceptual knowledge	☐ Identify, understand, and discuss primary literature.	☐ Critically evaluate papers, apply concepts and methodology from the literature to your work.	☐ Synthesize a historical perspective on the development of ideas and methods in your specialty.
Research skill development	☐ Replicate experimental results and recognize when controls indicate technical problems.	☐ Design experiments, execute an unfamiliar protocol, and/or teach others how to perform experiments.	☐ Design sets of experiments to test a hypothesis, modify existing methods as needed, teach others how to interpret results.
Rigorous & responsible conduct of research	☐ Describe the rules and policies for ethical research practice.	☐ Identify and discuss how bias or external pressure can lead to misconduct.	☐ Act as a role model of integrity, assess nuance in situations, and report unethical practices if encountered.
Communication skills	☐ Describe your field of neuroscience, comfortably giving a short oral presentation on your current work, write a logical description of your methods.	☐ Design and explain a conference poster, give a platform presentation at a national meeting, draft a grant/project proposal.	☐ Give a 45 min seminar and feel comfortable handling questions throughout, be able to write both technical research papers, and distill your work so that non-scientists can understand you.
Career Development	☐ Identify different career opportunities, prioritize tasks to meet deadlines, start building a local professional network.	☐ Build/expand your professional network, identify resources to give you practical experience in a career of interest.	☐ Identify potential projects to further neuroscience research, education, or advocacy, and compete successfully for a job interview.

Adapted from Vederame et al., eLIFE 2018 by Sheila Baker

Recent Accomplishments and/or Challenges

Goals for the next year

IV. Link to IDP Planning Guide

An editable version of this document is available on the website

Appendix 5: Graduate Certificate in College Teaching (GCCT) Agreement for Neuroscience Program Students

Student: _____

Research Mentor: _____

Students should submit this completed form to the Program prior to starting coursework.

For details of the Certificate, the student and mentor should consult the GCCT website: https://education.uiowa.edu/services/office-graduate-teaching-excellence-ogte/graduate-certificate-college-teaching

The student plans to complete the Graduate Certificate in College Teaching by enrolling in the courses checked below.

Part 1: Coursework (minimum 6 SH required)

At least one of the following courses **MUST** be taken:

- ☐ EDTL/EPLS/GRAD/RCE/PSQF:7385 Teaching and Learning in Higher Education 3 sh
- ☐ GRAD/PSQF:6217 Seminar in College Teaching 3 sh
- ☐ EPID:7200 teaching in Epidemiology 3 sh
- ☐ SOC:7010 Teaching Sociology 3 sh
- ☐ PSQF:6205 Design of Instruction 3 sh

One of the following courses **MAY** be taken:

- ☐ PSQF:6211 Universal Design and Accessibility for Online Learning 3 s.h.
- ☐ PSQF:6215 Web-Based Learning 3 s.h.
- ☐ PSQF:6216 Tools and Utilities for Online Teaching 3 s.h.

Part 2: Required Teaching (minimum of 2 practica and 3 SH required)

Please fill out the semester hours you plan to take for each practicum (1 - 2 sh per practicum).

- ☐ EDTL/EPLS/RCE/PSQF:7380 Practicum in College Teaching, supervised by a College of Education faculty member.
  Number of practica:_____, Total sh: _____

- ☐ GRAD:7400 Practicum in College Teaching, supervised by a faculty member outside of the College of Education.
  Number of practica:_____, Total sh: _____

Part 3: Required Portfolio (3 SH minimum)

☐ EALL:7475 PhD ePortfolio in College Teaching 3 sh

Tuition Agreement for Teaching Certificate

Tuition for Teaching Certificate Coursework will be paid by:

☐ Student

☐ Mentor

☐ Other (describe) _____

By signing below, I agree to complete the Graduate Certificate in College Teaching as prescribed above.

Student Signature:_____

Date: _____

By signing below, I agree to the student completing the Graduate Certificate in College Teaching as prescribed above.

Mentor Signature:_____

Date: _____

The Neuroscience Graduate Program approves this plan and consents to student completion of the Graduate Certificate in College Teaching.

Program Director Signature:_____

Date: _____