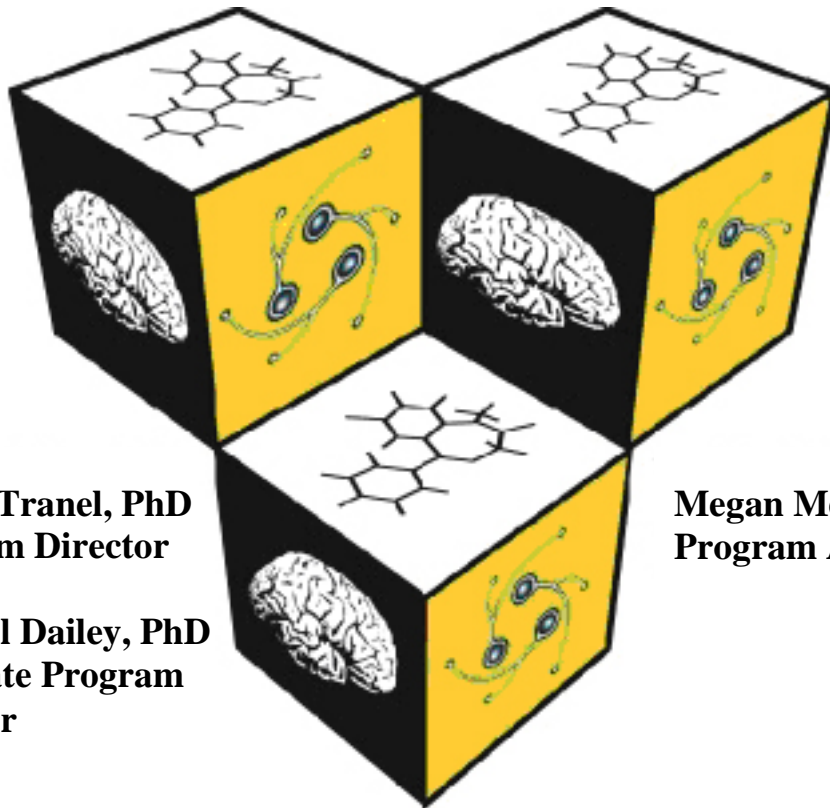


# Neuroscience Ph.D. Program



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**Program Director**

**Michael Dailey, PhD**  
**Associate Program**  
**Director**

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**Program Administrator**

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(July 25, 2017)

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## **I. Program Administration**

### **A. Contacts:**

**Program Website:** <https://neuroscience.grad.uiowa.edu/>

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#### **East Side Office**

*The Program Administrator works in the Biology Building on most Tuesdays. If you work on the East side, and you need an appointment with Megan, she will gladly meet you in 314 BB.*

Neuroscience Interdisciplinary Graduate Program  
314 Biology Building  
University of Iowa  
Iowa City, IA 52242

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

### **Educational Milestones**

*Students need to contact the Program Office (copy both Megan and Karina) 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 TAs
- When you choose your mentor
- Anytime your funding source changes
- When you choose your committees
- When you have changes in your committee membership
- When you need Karina to schedule 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:*

#### **Students**

- 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 think may be announcement worthy

#### **Faculty**

- You receive moderate or high level 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 Program Administrator and Karina 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.

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

## I. **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<sup>1</sup> 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 associated with registration changes, credit hour changes, and other changes that occur in connection with required and directly relevant courses; (4) ITS printing fees (beyond the allotted amount); (5) Summer recreation facility fees (if student is not registered for the summer term and desires access to the recreation facility). 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 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.

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<sup>1</sup> As of August, 2016, the University instituted a new policy whereby first-time matriculating students (students enrolling at Iowa for the first time) will be assessed a mandatory one-time University Records and Documents Fee (see [University Records and Documents Fee](#)). This \$225 fee will be covered by the Neuroscience Program for eligible students, beginning August 2016 and thereafter.

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; and (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 of 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 \$300, depending on the student's particular circumstances. Neuroscience faculty mentors have the prerogative to pay their student an extra \$300 (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 training grant fellowship (e.g., T32), it is recommended that the W-4 is changed to withhold taxes from paychecks each month for both federal and state. This will eliminate paying estimated taxes quarterly, and/or associated penalties. Consultation with the Program Office regarding tax matters is strongly recommended.

## **II. 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 III.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**

#### **a. 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.

b. 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:7305/132:305, Neuroscience Research, and NSCI:6265/132:265, Neuroscience Seminar.

### III. Curriculum

The Graduate College requires the satisfactory completion of 72 semester hours in order 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 3 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, the Program Director, and the Student Advisory Committee.) Graduate students must 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 Student Advisory Committee, mentor, and Program Director. Based on courses undertaken prior to entering the Neuroscience Program, some core Neuroscience course requirements may be waived.

Core Courses

PSY:6370	Principles of Neuropsychology, 3 s.h.
ACB:6252	Functional Neuroanatomy, 4 s.h.
BIOL:5653	Fundamental Neurobiology, 4 s.h.

B. Elective Neuroscience Courses

In order to provide training both in an area of specialization and in related areas of neuroscience, students are required to take at least 9 semester hours of Elective Courses.

At least 6 s.h. of these elective courses must be from Elective “Menu A”; the other 3 s.h. may come from Elective Menu B and/or from Elective Menu A (see below).

**Elective “Menu A”** (organized according to semester offered)

Fall:

- NSCI:7235 Neurobiology of Disease, 3 s.h. (offered only in even numbered years)
- BMED:5207 Principles of Molecular & Cellular Biology, 3 s.h.

Spring:

- NSCI:5212 Foundations in Behavioral & Cognitive Neuroscience, 4 s.h. (offered only in even numbered years)
- NSCI:6240 Topics in Cognitive Neuroscience, 3 s.h.
- NSCI:5753 Developmental Neuroscience, 1 s.h. – Spring module 1
- PCOL:6207 Ion Channel Pharmacology, 1 s.h. – Spring module 2
- PCOL:5137 Neurotransmitters, 1 s.h. – Spring module 3
- BIOL:4353 Neurophysiology: Cells and Systems, 3 s.h.

The additional 3 s.h. of Electives may be satisfied by coursework from the above list (“Menu A”), or by other approved electives. A representative list of such approved electives is provided below (Elective “Menu B”). 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, the Program Director, and (if necessary) the Student Advisory Committee. The elective requirement is normally satisfied prior to taking the Comprehensive Examination. Note, however, that there is some flexibility in the order in which courses may be taken. For example, students make take Principles of Molecular & Cellular Biology (BMED:5207) in the first year and take Principles of Neuropsychology in the second year, or *vice versa*.

**Elective “Menu B”**

<u>Elective Courses</u>	<u>Spring</u>	<u>Fall</u>
BIOL:3343 Animal Physiology	✓	
BIOL:2254 Endocrinology		✓
BIOL:4213 Bioinformatics		✓
BIOL:5199 Critical Readings in Biology	✓	✓
CSD:2110 Phonetics: Theory & Applications		✓
CSD:2111 Basic Acoustics for Sp & Hrng		✓
CSD:4146 Neurogenic Disorders of Speech		✓
CSD:6230 Advanced Hearing Science		✓
CSD:5234 Acquired Cognitive-Communication Disorders		✓
HHP:6300 Motor Control Seminar	✓	✓
PSY:1001 Elementary Psychology	✓	✓
PSY:3320 Abnormal Psychology	✓	✓
PSY:5610 Proseminar in Cognition and Perception		✓
PSY:6250 Neurobiology of Drug Addiction & Stress		✓
PSY:7150 Current Topics in Psychology	✓	✓

BME:5320	Bioinformatics Techniques		✓
MICR:5218	Microscopy of Biomedical Research	✓	✓
PATH:5260	Translational Histopathology		✓
GENE:6200	Special Topics in Genetics	✓	
NSCI:7301	Directed Study in Neuroscience	✓	✓
NSCI:5365	Seminar: Neuropsychology and Neuroscience ("Morning Meeting") (same as PSY:5365; NEUR:5365)		✓
STAT:6300	Probability and Stochastic Processes I		✓
MCB:6215	Transcription RNA	✓	
MCB:6217	Epigenetics, Cancer & Mouse Models	✓	
MCB:6220	Mechanism of Cellular Organization		✓
MCB:6225	Growth Factor Receptor	✓	

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. Statistics Requirement

All students are required to take 1 semester of statistics (at least 3 s.h.) for graduation. It is strongly recommended that the statistics course be completed before the Comprehensive Examination. Students with an extensive background in statistics can petition the Program for an exemption to the statistics requirement.

To satisfy the statistics requirement, students will normally take course 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.

Additional statistics courses can be counted towards elective requirements. Students are encouraged to consult with their Mentor and with the Student Advisory Committee to determine whether additional statistics courses might be useful for their program of study.

#### 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: attending a required class (e.g., Principles of Scholarly Integrity); attending research conferences or out-of-town meetings; religious holidays; family emergencies. Examples of absences that will not normally be excused include: testing research participants; running late on research testing with an animal or

participant; being tied up with an experiment; illness. Some of these events may not be avoidable, but that is why students are permitted 2 unexcused absences. 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. In all cases, students should email the Chair of the Seminar Committee well before any expected absences. Student attendance at Seminar is of paramount importance, and the Program will keep to a hard line on our policies.

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. First-year students select one of their three rotation projects and describe the goals and results of the research in a brief (approximately 15-20 minute) presentation. Three (four if necessary) 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 15 minutes, would have a briefer Elevator Talk than a presentation twice that long).
2. From the second year on, students give a 30-minute presentation, 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 their final year of the Program give a full one-hour presentation, with time for questions and answers at the end. This presentation is designed and scheduled to provide students an opportunity to rehearse the presentation they will be using for their PhD defense.
4. Students in the last semester of the Program are not required to give a Seminar presentation.

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 a Tuesday in May, 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 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 5-minute maximum 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 a 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 Student Advisory Committee. 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 written evaluations of student performance are completed by the lab rotation advisors. The students also fill out a written evaluation of the lab rotation. Modification of the lab rotation requirement is at the option of the Student Advisory Committee.

Dates for lab rotations are approximately as follows (exact dates for a particular academic year are available through the Neuroscience Program Office): 1<sup>st</sup> Rotation: late August (beginning of Fall semester) through early November; 2<sup>nd</sup> Rotation: early November through late January; 3<sup>rd</sup> 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 in Functional Neuroanatomy (small groups and lab), Fundamental Neuroscience, Neurophysiology, Neurobiology of Disease, Principles of Neuropsychology, or a related course. In addition, students are encouraged to participate formally as a graduate Teaching Assistant in at least one Neuroscience or Neuroscience-related course. Funded or partially funded teaching assistantships may be available either through the Neuroscience Program or through related Departments and Programs (e.g., Psychology, Biology, Anatomy & Cell Biology). Students normally pursue funded teaching assistantships after they have completed the Comprehensive Examination.

Additional instruction in teaching, designed specifically for graduate students, is offered through the [Office of Graduate Teaching Excellence](#). The College of Education (COE) opened the Office of Graduate Teaching Excellence (OGTE) in Fall 2008. 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. In order 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.

### **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:217
- Introduction to Online Post-Secondary Course Design and Facilitation (3 s.h.) EALL:7387
- 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.

*Teaching Assistantship duties may not be used to satisfy the teaching experience requirement.*

- Enroll in EDTL, E, 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.

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

For additional information and to enroll in the certificate program, please contact Dr. [Dennis R. Maki](#), Director, or [Mitchell Kelly](#), Associate Director.

In addition, students make presentations in Seminar, participate in journal clubs, and participate in lab meetings during their rotations and thesis research.

#### 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

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 a number of 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 their 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.

#### **IV. Plan of Study for the Neuroscience Program**

##### A. Coursework

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##### First Year:

Fall

Principles of Neuropsychology  
Fundamental Neurobiology  
Neuroscience Seminar  
Neuroscience Research  
Lab Rotations

Spring

Functional Neuroanatomy  
Elective  
Neuroscience Seminar  
Neuroscience Research  
Lab Rotations

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.

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##### Second Year:

Fall

Statistics  
Electives  
Neuroscience Seminar  
Neuroscience Research

Spring

Electives  
Neuroscience Seminar  
Neuroscience Research

The Comprehensive Examination is typically completed during the second summer.<sup>2</sup>

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<sup>2</sup> 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.

## B. The Comprehensive Examination

1. Students are eligible to take the Neuroscience Program Comprehensive Examination when the following minimum requirements are met. Normally, this is during the second summer of their program (except for MSTP students; see Footnote 2).
  - a. The student is in good academic standing as defined by the Graduate College.
  - 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. 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 include at least one course on statistics.
2. A goal of the Comprehensive Examination is to ensure that the students have a broad knowledge of the field of neuroscience so that (a) the students can be conversant with neuroscientists in any area of the field, and (b) the 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 experience for the 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 (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 Committee. The thesis advisor does not participate in the Comprehensive Examination. The member from the Standing Committee will serve as Chair. At least 3 of the 4 members chosen by the student and advisor must be members of the Neuroscience PhD Program. To represent a reasonable diversity of research interests, no more than 3 of the 4 chosen members may be from any one department.

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 should 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. 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. 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 to all committee members and the Neuroscience Program office by the deadline set by the Comprehensive Exam Committee. This is typically during the summer term of the second year of study, at which time students will normally have completed all required coursework for the Program (see Footnote 2). Mid-to-late June is the standard due date; this will be confirmed by the Comprehensive Exam Committee chair early in the spring semester before the exam, each year. 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 Doctoral Comprehensive Examination form.
  7. Once the written proposal is submitted and reviewed, 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 one hour in duration and it is conducted by the Comprehensive Examination Committee. 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 review committee.

8. A 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. Following administration of the oral examination, the Comprehensive Examination Committee evaluates the student's performance. Feedback will be provided to each student within one week of finishing the Exam. Each student's performance on the combined written and oral examination is graded as follows: **Satisfactory**, **Reservations**, or **Unsatisfactory**. The student's performance is considered Unsatisfactory if two or more members of the Committee judge the student's performance to be unsatisfactory. Otherwise, if there are two or more votes of Reservations (or at least one vote of Reservations and one vote of Unsatisfactory), then the committee will report an outcome of "Reservations." Thus, a satisfactory performance requires that there is no more than one vote of Unsatisfactory or Reservations.
10. A vote of **Reservations** occurs when the Committee judges that the deficiencies in performance were modest and can be rectified fairly easily. In the event of a report of **Reservations**, the Comprehensive Examination Committee will report these reservations to the student, and eventually to the Program Director and Graduate College. The Comprehensive Examination Committee will stipulate what actions the student must take to have the reservations removed.
  - a. The student must satisfy these stipulated actions in a timely manner, and a deadline will be specified by the Comprehensive Examination Committee.
  - b. At the discretion of the Comprehensive Examination Committee, remedial work may include revision of the written proposal, assignment of specific readings, further 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 **Satisfactory**.
  - d. If a student does not satisfy the stipulated actions adequately and by the specified time, then the outcome of the examination will change from **Reservations** to **Unsatisfactory**.
11. In the event of a report of Unsatisfactory, 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 Unsatisfactory will result in dismissal of the student from the Program for failure to make satisfactory progress.

### 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.
2. **Prospectus Meeting:** By May 1<sup>st</sup> 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.
  - 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 consist of: (1) Introduction: 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. (2) Methods: The prospectus document should include a Methods section that has detailed, comprehensive information about quantitative approaches, issues of adequate power, and plans for statistical analyses of the data. This may 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 of the prospectus, and the Methods should in general resemble the scope and detail that one would normally find in normal-length articles in peer reviewed specialty journals (not high profile journals with highly restrictive word counts). (3) Preliminary data (if applicable).

Working within the overall three-part 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.
  - 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. The prospectus is, in a nutshell, a blueprint for what the student will actually 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.
4. 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).
  5. 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. The frequency of such meetings will be determined by the thesis Chair and the student, in consultation with the Thesis Committee as necessary.

#### 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 Examination is open to the public. 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.
6. Report of Final Examination (Thesis Defense): The report of the Final Examination is due in the Graduate College office not later than 48 hours after the examination. The final examination will be evaluated as **Satisfactory** or **Unsatisfactory**. Two unsatisfactory votes will make the committee report unsatisfactory. In case of a report of unsatisfactory in the final examination, the candidate may not present himself or herself for reexamination until the next 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 the 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.

## V. 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) so that there is always 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.

### A. Executive Committee

The **Executive Committee** sets overarching agenda and policy for the Program. The Executive Committee meets approximately once per semester, and more often as necessary, to review and discuss issues of general program importance. Membership is principally the Chairs of other Program committees, and a student representative.

### B. Recruitment & Admissions Committee

The **Recruitment & Admissions 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). Another vital function is 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. The Committee meets frequently during the admissions "season" (about once every two weeks during the December-through-March period), and on a couple of other occasions throughout the year.

### C. Student Advisory Committee

The **Student Advisory Committee (SAC)** is responsible for advising students, for monitoring student progress in the Program, and for timely identification of students who are not making reasonable progress. The mission of the SAC is to enhance the graduate student experience and facilitate successful and timely completion of the PhD degree in Neuroscience. The SAC monitors principal facets of student progress, including coursework, laboratory rotations, thesis and research progress, and career development. In the post-comprehensive examination phase, the SAC facilitates student productivity by focusing on progress in publications, grant applications, and postdoctoral training opportunities.

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), together with the Program Coordinator. The SAC



meets with all students in the Program on a regular basis according to the schedules outlined below, 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.

Specifically, the SAC:

- Provides a formal process to monitor and track students' progress and achievements
- Provides opportunities for setting milestones and acknowledging accomplishments
- Provides help setting goals and expectations
- Identifies challenges and issues that threaten progress
- Provides assistance to clarify the graduation process
- Promotes skill development
- Oversees professional development
- Provides faculty feedback from a neutral perspective
- Deals with issues that are essential for students' academic and professional success

Many of these objectives will be explicitly addressed via the tool known as the "Individual Development Plan" (IDP). This tool (available from the office of the Associate Dean for Graduate and Postdoctoral Studies in CCOM and from the Graduate College) facilitates mentee-mentor discussions around the bullet points outlined above. The IDP must be completed annually (by July 15 each year) by all students in the Program. The Program Office will assist the SAC in monitoring compliance with this requirement.

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

1. Pre-comprehensive Exam Students (first- and second-year):

a. First-year Students:

Around November 1 of the Fall semester, the Chair of the SAC will be provided a midterm grade report for all first year students (by the Program Coordinator). 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.

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 difficulties, the Chair will arrange a meeting with the student, to discuss the situation, identify problems and challenges, and recommend solutions.

Around April 1 of the Spring semester, the SAC will meet with all the first-year students, to review their progress. Prior to this meeting, students will complete a Progress Report, focused on their progress in coursework and laboratory rotations. Progress Reports will be made available to the SAC for all first-year students, prior to the April 1 meeting.

b. Second-year Students:

Around April 1 of the Spring semester, the SAC will meet with all the second-year students, to review their progress. Prior to this meeting, students and their Advisors will complete separate Progress Reports, focused on the student's progress in coursework and in the laboratory. Progress Reports will be made available to the SAC for all second-year students, prior to the April 1 meeting.

3. Post-comprehensive Exam Students (third-year and beyond):

a. Third-year Students:

By October 1 following the successful completion of the comprehensive exam, all third-year students will complete a Progress Report in which they provide information about their (i) thesis (PhD) committee, and (ii) plans for a prospectus meeting. The SAC Chair will review these reports, and for any student who has not formed a thesis committee and established concrete plans and a realistic timeframe for holding a prospectus meeting, the Chair will meet with the student to discuss challenges and solutions.

b. Fourth-year Students:

Around July 15, the SAC will meet with all the rising fourth-year 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 and research (including presentations at scientific meetings, publications, and grant submissions). Progress Reports will be made available to the SAC for all rising fourth-year students, prior to the July 15 meeting.

c. Fifth-year (and beyond) Students:

Annually around July 15, the SAC will meet with all the rising fifth-year (and beyond) 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). These Progress Reports will be made available to the SAC for all rising fifth-year (and beyond) students, prior to the July 15 meeting.

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, one of whom is from the Cognitive Track and one of whom is from the Cellular/Molecular Track. Each will normally serve as Chair of the Comprehensive Exam Committees for students in their respective Track, although either could serve as Chair for any student. Each will normally serve a 2-year term. The Vice-Chair will then become the Chair, and a new Vice-Chair will be appointed from the same Track as the retiring Chair. The Standing Committee meets around the first of the calendar year to finalize plans for the examination.

Each student selects 4 of the 5 members of their Comprehensive Examination Committee in consultation with their advisor. 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. The thesis advisor does not participate in the Comprehensive Examination. At least 3 of the 4 Committee members proposed by the student and advisor must be members of the Neuroscience PhD Program. To represent a reasonable diversity of research interests, no more than three members may be from any one department.

Each student's Comprehensive Examination Committee will be Chaired by a member of the Standing Committee. The Chair is responsible for conducting the Examination, assimilating feedback from the Committee and communicating this to the student and the Graduate College.

#### E. Faculty Membership Committee

The **Faculty Membership Committee** is responsible for evaluating current and proposed neuroscience faculty membership, and for recommending to the Program Director faculty who should be considered for Training Faculty for the training grant. The Committee evaluates faculty applicants to the Neuroscience Program and makes recommendations to the Program Director for membership.

Guidelines for Faculty Membership in the Neuroscience Program are spelled out in Appendix 1.

#### F. Seminar Committee

The **Seminar Committee** is responsible for overseeing the Neuroscience Seminar, which is a flagship seminar series that blends inside and outside speakers. This Committee handles the invitation of special outside speakers for the Seminar Series, and sets up the itineraries for those speakers. The Committee also monitors faculty and student attendance at the Seminar (attendance is mandatory for all students).

#### G. Diversity Affairs Committee

The **Diversity Affairs Committee** is responsible for enhancing the recruitment and retention of diverse students in the Neuroscience Program. The Committee meets as needed but in general twice/year to address the following aims:

1) To enhance the recruitment a diverse pool of students: The Committee will participate in activities to enhance the recruitment of under-represented minorities (URMs) into the Neuroscience Program. Such activities include attendance at research conferences including SACNAS, ABRCMS, and the Atlanta University Center Consortium. The Committee will work with the CCOM, CLAS, and Graduate College, which send a contingent of representative faculty and students to these events each year. In addition, the faculty members of the Committee will establish relationships between the UI and institutions which serve large URM populations to form pipelines for recruitment into our program. The Committee will work with the Recruitment & Admissions Committee to increase the likelihood that students from these institutions apply to our PhD program.

2) To ensure the retention of URM students: The Committee will work closely with the Student Advisory Committee to develop strategies to aid students who are struggling in coursework or research, acknowledging that these strategies may be distinct for students from under-represented populations. Because feelings of community among other URM students across campus are important for the well-being and progress of our students, the Committee will work with the Office of Cultural Affairs and Diversity Initiatives in the CCOM and the UI Chief Diversity Office to alert students of the career-development and peer-support opportunities that are available on campus.

3) To promote the career development of under-represented and diverse students: The Committee will identify mechanisms for funding/career development (e.g., SfN Neuroscience Scholars program, Ford Foundation fellowships). The Committee will identify and apply for sources of funding to support trainees (e.g., NIH R25).

4) To support faculty/trainee relationships involving under-represented and diverse students: The Committee will communicate annually with mentors of these students to discuss any issues that may impact progress of the trainee. If problems arise, the committee will work with the mentor and trainee to develop and implement a course of action.

#### H. Outreach I: Brain Awareness Committee

The **Brain Awareness Committee** is responsible for organizing all activities associated with the annual Brain Awareness Week, including community-related outreach activities, arrangement of a special invited speaker, and a Neuroscience Retreat during Brain Awareness Week.

#### I. Outreach II: Brain Bee Committee

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

#### J. Evaluation and Tracking Committee

The **Evaluation and Tracking Committee** is responsible for monitoring the quality of the training program, soliciting systematic feedback from trainees regarding the strengths and weaknesses of the training program, and monitoring the outcomes of students who graduate from the training program (we keep track of our graduates for at least 10 years, and longer if possible). The committee meets twice annually, and reports on its findings and makes recommendations to the Program Director and Steering Committee regarding changes, problems, or aspects of the program that are particularly effective. The Committee reviews and monitors all aspects of the training program. The Committee also conducts annual faculty evaluations and monitors faculty participation. The Committee also monitors the Comprehensive Exams that are eventually submitted as formal F31 (or other similar) grant applications, and the outcomes of these submissions.

#### K. Awards Committee

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

#### L. Community Bonding Committee

The **Community Bonding Committee** is responsible to foster a sense of community and improve interpersonal relations 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 a chair and co-chair. This committee meets as a whole at least once a semester to discuss upcoming events, ideas, and logistics.

### VI. Neuroscience Graduate Student Awards

Neuroscience graduate students are eligible for a number of 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 (3<sup>rd</sup> year and 1<sup>st</sup> 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. Service Award

This award is given to the neuroscience graduate student who has 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, Brain Awareness, outreach). Nominations for this award are made by individual faculty, and the award may be given to a graduate student of any year in the program. The awardee is selected from the nominees by a committee of three faculty members. The Service Award carries a financial prize of \$200.

#### 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 1<sup>st</sup> author (or joint 1<sup>st</sup> 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 a committee of three faculty members. 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 a committee of three faculty members. The Young Investigator Award carries a financial prize of \$100.

#### D. Rotation Talk Award

This award is given to the 1<sup>st</sup> 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 1<sup>st</sup> 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 a \$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 (e.g., 2011-2012). 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 a \$25.

#### F. Poster Award for Brain Awareness Week

This award will be given to the neuroscience graduate student with the best poster and poster presentation made during Brain Awareness Week (both the quality of the poster and the quality of the presentation will be 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 will be 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 a \$25.

### **VII. Petitions and Appeals Procedures**

#### 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.

## **VIII. 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) and for faculty at Faculty Services (5101A D, 335-2085). 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.



## **Appendix 1: Guidelines for Faculty Membership**

### **I. Definition**

Faculty members may hold appointments as either **Core Faculty** or **Affiliate Faculty**. Core Faculty serve as the primary training mentors for graduate students in the Program. Core Faculty participate fully in the Program activities, including Program committees, courses, Seminar, and supervision of lab rotations by neuroscience students. Many of the Core Faculty serve as training mentors on the Neuroscience Training Grant, and have sufficient funding to support graduate students in their laboratories.

Criteria for being appointed to the Neuroscience Faculty at Core or Affiliate levels are outlined below.

### **II. Criteria for Membership as Core Faculty**

1. Serving as PhD thesis advisor for a Neuroscience graduate student
2. Chairing a Program committee
3. Organizing and/or serving as instructor of record for a required neuroscience course
4. Participating in at least 3 of the following activities:
  - Lecturing for a required neuroscience course
  - Serving on a Program committee
  - Sponsoring lab rotations by neuroscience graduate students
  - Attending faculty meetings
  - Serving on the dissertation committee of a neuroscience graduate student
  - Serving as a faculty advisor to a neuroscience or neuroscience-oriented bioscience student
  - Attending the Neuroscience Seminar regularly
  - Presenting at the Neuroscience Seminar within the past 2 years

It is required that Core Faculty participate in Activities #1, #2, or #3 at least once during any given five-year period of faculty membership.

It is required that Core Faculty meet Criterion #4 at all times in order to maintain faculty membership.

### **III. Criteria for Membership as Affiliate Faculty**

The specific requirements for maintaining Affiliate membership are the same as those enumerated above for Core Faculty, except that Affiliate Faculty are not required to meet Criteria #1, #2, or #3.

### **IV. Protocol for Addition of Faculty to the Neuroscience Program**

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
  - Evidence of capacity to attract extramural funding
  - Promise of ability as a teacher
  - Promise of ability as a mentor
3. Interested faculty candidates will start by contacting the Program Director, who will:
    - a) Meet with the applicant in person for an interview and discussion of the applicant's reasons and justification for becoming a Neuroscience faculty member;
    - b) Review with the applicant the materials needed for a formal application to the Program (via the Faculty Membership Committee).
  4. Applications will consist of:
    - a) Letter of interest from the applicant briefly describing his or her background and interest in neuroscience research, teaching and mentoring;
    - b) Curriculum Vitae (CV) or NIH-type or NSF-type Biosketch;
    - c) A letter of support from the faculty person's DEO, indicating that the DEO supports the candidate's involvement in Neuroscience Program activities, such as serving on committees, teaching, supervising students (lab rotations, possible mentoring of PhD work), and attending seminars.
  5. The application materials should be submitted to the Chair of the Faculty Membership Committee (electronically, as separate PDF files, is preferred), who will then distribute the materials to the Faculty Membership Committee.
  6. The Faculty Membership Committee will vote to approve or not approve the candidate for an appointment to the faculty. If the vote is for approval, then the committee will also vote as to whether the appointment should be Affiliate or Core status.
  7. If the Faculty Membership Committee approves the appointment, then the Neuroscience Program Coordinator will distribute the application materials to the Core Faculty of the Neuroscience Program for a vote (indicating the Affiliate or Core level for the proposed applicant). A positive endorsement of 60 percent of responding faculty will be required for membership. Voting will be conducted by campus mail or e-mail.
  8. If the vote is positive, then the Faculty Membership Committee Chair will:
    - a) convey the results of this process to the Associate Dean for Graduate and Postdoctoral Studies in the Carver College of Medicine, who will make the formal appointment;
    - b) convey the CCOM decision to the faculty applicant (cc'ing the applicant's DEO and the Neuroscience Program Director).
  9. Appointments will be for 3 years. New members will be asked to prepare a brief paragraph of research interests for inclusion in the Program brochure and website. They will also be asked to designate an association with one of the Program tracks:  
 Molecular/Cellular **OR**  
 Cognitive/Systems

## V. Re-appointment of Program Faculty

1. Annually and 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.
2. In order to be eligible for reappointment, each faculty member is expected to meet the minimum requirements for the appropriate level of membership, as delineated above.

3. The Committee will make a recommendation for or against reappointment.  
Recommendations for reappointments may be at the Affiliate or Core level, depending on the faculty person's extent of participation in the Program.
4. In cases where a faculty member's participation in the Program is unclear, membership status will be determined by a vote of the Core Faculty. Voting will be by campus mail or e-mail, with a positive endorsement of 60 percent of responding faculty required for reappointment at either the Affiliate or Core level.

## **VI. Changes in Status**

An Affiliate member may request a change to Core status at any time through the Director, who will then solicit a recommendation from the Faculty Membership Committee for consideration at its next meeting. The recommendation will be presented to the Core Faculty and a positive endorsement of 60 percent of responding faculty will be required for a change in status. The recommendation of change of status will then be conveyed from the Director to the Dean of the Graduate College.

## **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.

### 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.

#### 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.