

GRADUATE PROGRAM REQUIREMENTS IN BEHAVIORAL NEUROSCIENCE (Modified July 22, 2008)

Behavioral Neuroscientists want to explain behavior in terms of the activities of the brain. Students interested in this field thus need to understand how to connect behavior to brain anatomy, physiology, and its cellular-molecular underpinnings. The Behavioral Neuroscience program is designed to provide students with the conceptual and empirical methods needed to be successful in this field. Thus, each student is expected to achieve general competence in neurosciences as well as in-depth proficiency in those areas relevant to his or her special interests.

Students in Behavioral Neuroscience are expected to conduct research and participate in courses on a continuous basis. Research should be initiated early in the first year so that a detailed progress report on the work can be made at the end of the second year. The general requirements of the PhD program include: (1) a series of core courses and an individualized course plan designed by the student's committee; (2) a second-year progress paper and defense, (3) a Comprehensive exam taken by the end of the 4th year of enrollment and after the majority of coursework is taken, and (4) the doctoral dissertation and dissertation defense. Each of these requirements is discussed below under separate headings. In addition, the area requires one year of teaching experience (see #7, below). A typical schedule for completion of these requirements is presented at the end of this document (see #9). It should be noted that any deviation from the formal requirements must be requested in writing to the student's advisory committee. This petition will only be honored subject to the *written approval of the committee chair and the Program Director*.

1. *The Student's Committee*

The direction of a student's training will primarily be the responsibility of the thesis

supervisor. However, the Program Director, in consultation with the primary advisor, will arrange a committee initially composed of the primary advisor and two other faculty members to assist in the development of the student and to monitor her/his progress.

The committee will help the student select courses, consult with the student on research, serve on thesis committees, and so forth. Ideally the committee will meet with the student once each semester. The composition of the committee can change to mirror the changing research interests of the student.

Prior to the comprehensive examination and dissertation defense (see 5 and 6 below) a committee composed of at least 5 faculty will be appointed to assist the student with the preparation of the plan of study and to guide and examine the doctoral dissertation. At least three members will have primary appointments in the BN Program. The other two members must come from outside of the BN program. One external member must be from the graduate faculty outside the Psychology Department and one must be from another Program in the Psychology Department.

It is the responsibility of the student's primary advisor to submit to the Program Director a potential list of faculty who are willing to serve on this committee. The Program Director will submit this list to the Department's Associate Chair for Graduate Education for approval. Additional members from outside or inside of the Department can be appointed by petitioning the Program Director. Normally the members of this committee will also be the Final examination committee (see 6).

2. *Annual evaluation*

At the end of each academic year the program faculty will meet to evaluate the progress of each student. As part of this evaluation, the Program Director will provide the student with a *Summary of Accomplishment* form to be filled out by the student and returned to the Program Director and committee members. In addition, the faculty will consider the input from the primary advisor, committee members, other faculty and information about TA performance to determine if the student is making adequate progress. The Program Director will provide the student with a letter summarizing the results of this evaluation.

3. *Course Requirements*

The core curriculum for students in the Behavioral Neuroscience PhD Program is in register with that of the Interdepartmental Neuroscience PhD Program. All students are required to take the Core Curriculum:

- The two semester Survey and Integration of Neuroscience sequence, NRSC 5100 and 5110
- 3 semesters of NRSC 6100, Advances in Neuroscience Research Seminar
- At least a one semester statistics course

The remaining curriculum will be tailored to the student's interest and constructed by the student together with her/his advisory committee. The approved courses can be found at ([HTTP://WWW.COLORADO.EDU/NEUROSCIENCEPROGRAM/PHD/REQUIREMENTS.HTML](http://www.colorado.edu/neuroscienceprogram/phd/requirements.html))

4. *Second Year Progress Paper*

By the end of August of the second year, all students must submit a progress paper to their committee, detailing their laboratory research completed to date. This paper should be at least 20 pages (double spaced) and formatted for submission to

one of the leading neuroscience journals. If students have not completed a research project by this time, they should report what has been completed and discuss implications of probable outcomes. This paper will serve as the basis of a focused oral examination. This will be a closed (to the public) examination conducted by the student's committee. Other faculty members of the program, however, are welcome to attend and participate. It is the responsibility of the Program Director to schedule the examination.

The student must file a petition to extend the deadline for this requirement. This petition will be submitted to the Program Director and outline the reasons for the extension. The Program Director will then meet with the student's committee to determine if the student should be given an extension and to stipulate the extent of the extension.

5. *Comprehensive/Preliminary Examination*

Before admission to candidacy for the Ph.D. degree, the student must pass an individually tailored comprehensive examination in the field of concentration and related areas. The student and committee will determine the nature of the qualifying exam. It can take the form of a review paper organized to evaluate a particular hypothesis or a grant proposal. To advance to candidacy the examination committee must judge the student's written document as satisfactory, and the student must pass an oral defense of the paper and the student's broader knowledge of the field. The oral examination will be closed to the public but open to other faculty members of the Behavioral Neuroscience program. It will be scheduled by the Program Director no sooner than two weeks after the receiving and distributing the written document to the committee.

Before attempting the examination, the student will have:

- a) Completed at least three semesters of residency, and successfully completed (grade of B- or better) the Survey

and Integration of Neuroscience I and II courses.

- b) Made formal application for Admission to Candidacy on forms supplied by the Graduate School at least two weeks before the comprehensive examination is attempted.

The student is expected to complete both components of the Comprehensive Examination no later than the end of August of the fourth year of enrollment. *The student must file a petition to extend the deadline for this requirement.* This petition will be submitted to the Program Director and outline the reasons for the extension. The Program Director will then meet with the student's committee to determine if the student should be given an extension and to stipulate the extent of the extension. Failure to complete the Comprehensive Examination in a timely matter is grounds for dismissal from the program.

6 *Doctorate of Philosophy Dissertation*

a) *Advisory Committee.* The student should obtain the signatures of the members of the advisory committee (thereby indicating their willingness to serve) on the appropriate forms - one copy to be given to the chair of the advisory committee, one to the Director of Graduate Studies in Psychology, and one to be placed on file in the program office. Any change in the advisory Committee is to be similarly reported. It is the student's responsibility to keep the advisory committee informed of the progress in his or her research and training, and of any significant change in the direction or status of his or her program. The Graduate School must also be advised of any changes in degree program after the Application for Candidacy is filed.

b) *Resident Requirements.* At least 30 semester hours of courses at the 5000 level or above are required; at least 20 of the required hours must be in graduate courses taken at this university. To complete the requirements for the Ph.D. a student must register for a minimum of 30 dissertation credit hours. Distribution of those hours is

as follows:

- a student may not register for more than 10 dissertation credit hours in any one semester, including summer
- not more than 10 credit hours taken in semesters prior to the semester in which the comprehensive examination is passed may be counted in the 30 dissertation hours required for the degree
- not more than 10 dissertation hours of credit taken the semester in which the comprehensive examination is passed may be included in the 30 credit hours required for the degree

c) *Final Examination.* This is the traditional thesis defense. It will be open to the public. The *Program Director* will be responsible for scheduling the public examination.

The Final Examination will not be scheduled until the Program Director has received copies of the complete properly formatted thesis to distribute to the committee and to make available to the public. The Program Director will contact the members of the thesis committee to schedule the final examination. The examination will be scheduled *no sooner than two weeks after the Program Director has received copies of the thesis and distributed them to the committee.*

As noted, the final examination will be open to the public. The examination will have three components:

- The student will give a 45-minute formal presentation of the thesis.
- A period with questions from any one in the audience.
- A closed questioning period with the student's formal committee.

d) *Student's Responsibility.* The requirements of the Behavioral Neurosci-

ence program are consistent with those of the Graduate School. It is the student's responsibility to see that these requirements (including total credit hours, advanced registration for examination, etc.) are met. It is important to pay careful attention to the rules governing the various examinations, thesis preparation, residence requirements, etc., as they are set forth in the Graduate School Rules that can be found at <http://www.colorado.edu/GraduateSchool/policies/downloads/GSRules2001.pdf>

7. *Additional Requirements*

The following are requirements that must be met prior to admission to candidacy for the Ph.D. degree.

- a) *Individualized Coursework.* Course requirements, beyond the core course requirements, will be designed individually for each graduate student based on their background and anticipated research/specialty areas. The student's committee will help to formulate this plan.
- b) *Teaching Experience.* All students are required to gain teaching experience by serving as teaching assistants for two semesters.
- c) *Statistics.* Either Psych 5741 (Special Topics-Graduate Statistics or Psych 5741/5751 (General Statistics: C.) will be accepted. The mentor will decide which course the student shall take, based on the student's anticipated research direction. This requirement must be met by the end of the second year, unless the course is not offered during the student's second year.

8. *Optional Master of Arts Degree*

The Master's degree is a way station en route to the PhD, and is now optional to Behavioral Neuroscience students. The main purpose of pursuing a Master's degree is if a student decides to complete their studies at this level and not continue on to

complete a PhD. No students are admitted to our program with the expectation that they will complete only a Master's degree. The degree requirements include 30 semester hours of graduate work and a 2nd Year Progress Paper (item 2), as agreed upon by the student's committee. At least 12 semester hours of the graduate coursework must be at the 5000 level or above, and 4 to 6 hours must be Psyc 6951 (MASTER'S THESIS HOURS). The Progress Paper substitutes for the traditional Master's Thesis and must be defended before the student's committee before the end of the third year. The *Program Director* will be responsible for scheduling the examination. This cannot happen until the Program Director has received the complete properly formatted thesis. The Program Director will contact the members of the thesis committee to schedule the final examination. The examination will be scheduled *no sooner than two weeks after the Program Director has received copies of the thesis and distributed them to the committee.*

9. Typical Calendar for Graduate Training in Behavioral Neuroscience

Year 1

Fall

Survey & Int. Neuroscience I
 Research
 Selection of Faculty Advisory Committee

Spring

Survey & Int. Neuroscience II
 Advances in Neuroscience Seminar
 Research

Year 2

Fall

Advances in Neuroscience Seminar
 Neuroscience Depth Course
 Research (Masters Thesis hours)

Spring

Completion of 2nd Year Progress Paper
 Advances in Neuroscience Seminar
 Neuroscience Depth Course
 Research (Masters Thesis hours)

Year 3

Fall

Neuroscience Depth Course
 Neuroscience-related Course
 Research

Spring

Neuroscience Depth Course
 Neuroscience-related Course
 Research
 Comprehensive Examination

Year 4

Fall

Neuroscience-related Course
 Research (Doctoral thesis hours)

Spring

Neuroscience-related Course
 Research (Doctoral Thesis hours)

Year 5

Fall

Neuroscience-related Course
 Research (Doctoral Thesis hours)

Spring

Neuroscience-related Course
 Defense of Dissertation

