

# Behavioral Neuroscience

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*Supplement to WVU Psychology Graduate Handbook*

## History and Goals

The Behavioral Neuroscience (BN) training area in the Department of Psychology's Ph.D. program was founded in 2009, and we admitted our first class of graduate students in 2010. It is our goal to train the top students in research, theory, and applications of behavioral neuroscience principles. Through research, publishing, course work, grant writing, and mentoring, our students are expected to master essential skills in behavioral neuroscience. Students are primarily trained in one laboratory, under a defined research mentor. Supplemental training opportunities are also available in other laboratories, with a goal toward developing each student's independent research program that they will take to their postdoctoral fellowship or professional position.

The goal of our Ph.D. program is to train elite behavioral neuroscientists who are well prepared for the rigors of a career in academe, the professional marketplace, and beyond. We expect our graduates to succeed in research, with an emphasis on skills in publishing and obtaining extramural funding to support their work.

Our graduates are expected to make significant contributions to education and solving important problems in their chosen fields. Recent graduates from our program work in the pharmaceutical field, in hospitals, and in academic research positions.

## Milestones and deadlines

Behavioral Neuroscience follows the departmental deadlines outlined in the Department of Psychology Graduate Handbook.

## Behavioral Neuroscience Training Committee (BNTC)

Each student is overseen by the Behavioral Neuroscience Training Committee, which makes policy decisions and approves the student's individual Plan of Study. As with all graduate training programs in the Department of Psychology, Behavioral Neuroscience follows the "junior colleague" model. Thus, the committee is comprised of BN core faculty, associate faculty members from outside of BN, and two student representatives. Each student representative serves for two years and is a full voting member of the BNTC. The primary duties of the student representatives are (1) to facilitate two-way communication between the BNTC and the students in the BN program, and (2) to assist with recruitment activities.

## Evaluation of student progress

All students are formally evaluated, in writing, by the BNTC at the end of each school year. In addition, all first-year students are evaluated after the end of the first semester. Students are strongly encouraged to submit their activity reports, as detailed in the Department of Psychology Graduate Handbook.

## Committee composition

Committees for examinations such as thesis, candidacy, and dissertation must include at least one Behavioral Neuroscience core faculty member. This core member is typically the advisor.

## Plan of Study

Each student designs a Plan of Study that is submitted for review to the BNTC during the fall of the first year. Students are strongly encouraged to consult with their advisor prior to submitting the Plan of Study. Please see the Plan of Study form for more details.

## Neuroscience Research Group (NRG)

The Neuroscience Research Group started in 2011 as a journal club composed of graduate students and faculty members. As our group grows, we have added opportunities for students to present their data, as well as outside speakers. The following activities are typically engage in, but we are not limited to these.

**Data presentation.** All students are expected to share their data. Time limit varies with training, such that second year students present for up to 20 min, third years for 30 min, and fourth years for 45 min, each followed by 10 min Q&A. Students typically present in descending order of seniority, and other lab members (e.g., undergrads) are welcome to join as well.

**Journal club meetings.** One student per meeting selects and presents a recent (i.e., published within the past 2 years) high-quality article from a peer reviewed journal. All presenters are encouraged to discuss potential papers with their advisor. The content of the articles does not have to completely overlap with your own work, though each presenter is expected to explain the theory and techniques used and to answer related questions.

The paper is emailed to the NRG coordinator for distribution 7+ days prior to the NRG meeting. Students are strongly encouraged to consult with their research mentor when choosing their articles.

**Outside speakers.** BN faculty arrange regular career-talk presentations for our graduate students, by neuroscience professionals across a diverse workforce. Speakers include (but are not limited to):

- Pharmaceutical industries
- Military / Defense / Security
- Government / Policy
- Other academic areas (Biomedical, Liberal Arts)

**Professional Development.** Although opportunities for professional development are offered through the department and first-year seminar, NRG may occasionally be used to discuss topics of relevance to students in behavioral neuroscience. The topics discussed will vary depending on the current needs of the group, but might include postdoc and academic job market, CV building, presentation techniques, ethics or other topics.

# Candidacy examination Procedure

(Approved by the BNTC on August 28, 2018)

## Overview

To qualify for advancement to doctoral candidacy, Behavioral Neuroscience graduate students must pass the preliminary examination. The purpose of the preliminary examination is to determine whether each student has the essential conceptual, methodological, time management, and creativity skills to begin work on their dissertation.

The examination is three parts, described below, written by the examination committee. The examination should be completed by the appropriate deadline stated in the Department's Graduate Handbook. The student will select the dates to begin the exam, keeping in mind that the defense meeting must be held during the academic year, as defined by the Provost's office. The student will fill out the Testing Procedure Specification memo (see Appendix below) and deliver a signed copy of the memo to the BN Area Coordinator for approval, no less than 1 week from the date the student wishes to begin the examination.

## Examination Committee

Each student will select their examination committee, in consultation with their research mentor, and as subject to approval by the BN coordinator. The examination committee will consist of three Graduate faculty, at least two must be core members of the Behavioral Neuroscience area. The student's research mentor will usually serve as the examination chair. The second member will be selected from the Behavioral Neuroscience area by the student. The third member will be appointed by the area coordinator. If the research mentor is unavailable, a chair will be determined by the examination committee. The committee may also consult with a subject matter expert as part of the examination review.

## Part 1: Written examination

Once the committee is formed, each committee member will choose a specific topic area, in consultation with the examination chair. Each committee member will prepare 4-5 questions for the student to address in their written exam. The examination chair will distribute the list of questions in an email to the student.

The student will prepare a written response to three of the questions in each topic area. There is a maximum 2000 word limit for the response to each of the three topic areas (i.e., 6000 total words), excluding references. The written examination is due to the committee, via email, 14 days after the examination is issued. Approximately 14 days after submitting the written examination, students will receive a grade (pass/marginal pass/fail) on each answer submitted, as well as a grade on the written examination as a whole (pass/fail). Students must fail no more than four questions to earn an overall passing grade.

## Part 2: Grant Proposal

The examination chair will prepare a Request for Proposal (RFP), which will outline the scope of a project. The student will prepare a grant proposal with the goal of addressing the project outlined in the RFP. The RFP must be approved by the examination committee before the examination chair sends it to the student.

The grant should follow NIH R-series formatting and instructions (download SF424 R&R from [www.nih.gov](http://www.nih.gov)), and the length for the Research Strategy is limited to 6 single spaced pages. In addition, the student will prepare a 1-page Specific Aims section about the project that will be proposed in part 2, the Grant Proposal. NIH *significance section* font and pagination specifications should be used for these sections. The proposed studies may take approximately three years to

complete. Although a budget document is not included in the examination, the scope of the science should be based on a rational amount and duration of requested funding. Facilities or equipment sections are not required, although the student should assume the existing equipment includes large-ticket items.

A single, pdf of the final Grant Proposal document will be submitted to the examination chair in the following order:

1. Project Narrative
2. Project Summary
3. Specific Aims (1 page)
4. Research Strategy (6 pages)
5. If appropriate: Human Subjects Sections (Protection of Human Subjects; Inclusion of Women and Minorities; Targeted/Planned Enrollment Table; Inclusion of Children)
6. If appropriate: Vertebrate Animals
7. Bibliography

Approximately one week after the RFP is issued, and no more than two weeks from the Grant Proposal due date, the student may schedule a 1 hour meeting with the examination committee to review the Specific Aims and general direction of the Grant Proposal. This is a working meeting, and no written documents are required, but students are expected to have a grasp of the Aims they plan to propose.

### **Part 3: Oral Defense**

A two-hour oral defense will be held, during which the examination committee will ensure that the student has mastered essential skills and knowledge. The student will schedule the oral defense. The meeting will begin with a ~10-minute overview of the project by the student and will cover content from the Written Examination, the Grant Proposal, and relevant coursework.

### **Intellectual Property**

The ideas described in the proposal should be unique to the student. While it is expected that these ideas will have been influenced by the training, skills, and mentorship of the advisor and instructors, the proposal should include only the student's intellectual property.

### **Independence & Confidentiality**

All components of the examination are "open note" and appropriate references are expected. Students are required to work independently. They may seek clarification from the examination chair, but not from any other person on any part of their examination until after their oral defense. Discussing the content of the written examination with anyone outside the committee is strictly forbidden. Failure to follow these procedures, or standards on plagiarism described in the WVU and Psychology Graduate Student Handbooks, will be considered an act of academic misconduct and prosecuted in accordance with university policy, and may include failing the preliminary examination and recommendation of dismissal from the program.

### **Feedback & Remediation**

Students will receive a letter from the examination chair no later than two weeks after the oral defense that will inform them of the overall grade and provide general feedback, e.g., strengths, weaknesses, changes needed in a revision, as appropriate. This letter will represent the consensus of the examination committee. Each member of the examination committee will review the letter and verify the feedback before it is given to the student. Particular feedback and individual votes (e.g., pass, fail) will not be tied to any individual committee member. A copy of this letter, with the names of all committee members, will be placed in the student's file.

All committee members will assign a pass/fail grade on each part of the examination. Possible overall grades are Pass (pass all three parts), Conditional Pass (pass two parts), or Fail (pass fewer than two parts).

Students who earn a Conditional Pass will be given the opportunity to repeat the failed part of the preliminary examination, upon the judgment of the examination committee and in possible consultation with other BN faculty. There will be opportunity for one attempt at remediation of the failed section, after which the student will earn an overall Pass or Fail. Students who fail the preliminary examination will not be advanced to doctoral candidacy.

## Timeline

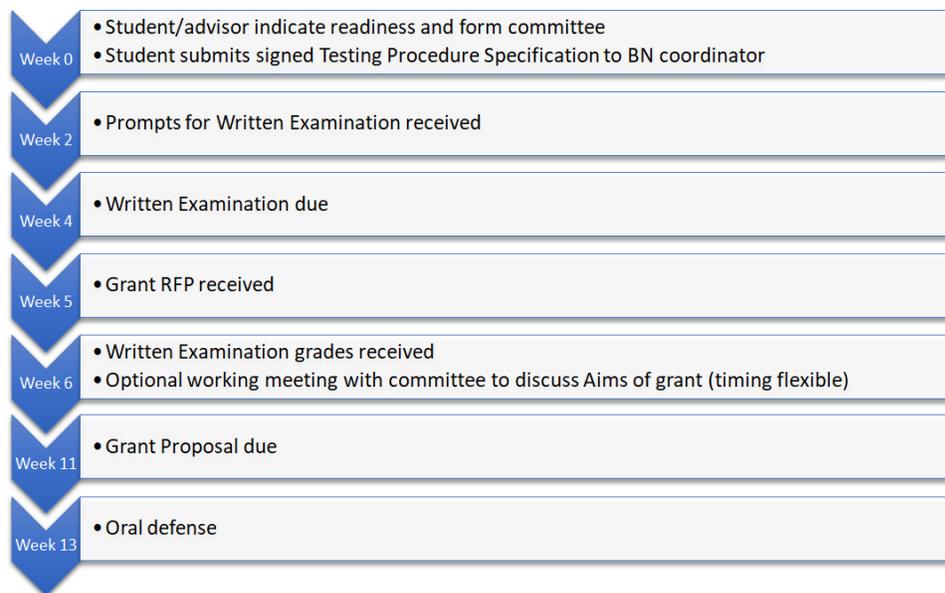


Figure 1. Summary of exam timeline

## Timeline of Preliminary Schedule

TO: [BN Coordinator]  
FROM: [student name]  
DATE:

I hereby request to begin my candidacy examination. The committee members listed below and I have agreed to the following timeline (note that specific dates are subject to change, based on committee availability or unforeseen events. All due dates are 11:59PM eastern time):

Proposed date:

- \_\_\_\_\_ (week 0) Student indicates readiness, proposes committee
- \_\_\_\_\_ (week 1) BN coordinator approves examination committee
- \_\_\_\_\_ (week 2) Written exam issued to student
- \_\_\_\_\_ (week 4) Written exam due to committee
- \_\_\_\_\_ (week 5) RFP due to student
- \_\_\_\_\_ (week 6) Written exam feedback issued to student
- \_\_\_\_\_ Optional grant working meeting
- \_\_\_\_\_ (week 11) Grant Proposal due to committee
- \_\_\_\_\_ (week 13) Oral defense of grant & written exam. If grant is due over summer/winter recess, meeting will be scheduled after start of the next semester.

### Examination committee:

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Chair:	[Name]	Signature	Date
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Member:	[Name]	Signature	Date
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Member:	[Name]	Signature	Date
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### BN Coordinator approval:

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Signature	Date
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