

## **Guidelines for Students taking the Qualifying Examination Neuroscience Graduate Program**

### **Timetable: Spring of Year 2:**

<b>Block 1</b>	<b>Project planning phase</b>
Week 1-2	Meeting with Students: “Preparing for qualifying exams”
Weeks 1-5	Mentored meetings on Dissertation Proposal
Week 5	Establish the Exam Committee
<b>Block 2</b>	<b>On-topic written proposal</b>
Week 6	Submit a one-page proposal (Specific Aims) to the exam committee
Week 7	Committee provides student with approval or requests revisions.
Week 8	Revised Specific Aims due to the exam committee
Week 10	Submit final 7-page written proposal to Exam Committee (due by 5 pm)
<b>Block 3</b>	<b>Oral qualifying exam</b>
Week 12	Students receive comments on proposal for re-writing
Week 14	Submit Final Revised Proposal to all committee members (due by 5 pm)

**April 15<sup>th</sup> – 26<sup>th</sup>** All oral exams

### **General Comments:**

The committee shall include three Neuroscience faculty members selected by the student and one independent observer that oversees all qualifying exams held. The independent observer will be appointed by the NI.

### Here are a few general tips:

1. Talk to members of the exam committee, especially the primary Mentor, throughout the writing process. Early input will hopefully help to keep you on track and to make you feel more comfortable with your examiners. Remember, however, that the exam chairperson is the main point of contact during the whole process.
2. Talk to other students that have completed the process and look at examples and directions for the NRSA that can be downloaded (<https://researchtraining.nih.gov/programs/fellowships/F31>). We suggest that you have at least one mock oral exam with other students and postdocs (no faculty).
3. Students should take ownership of their graduate training by utilizing all resources available and making a strong effort to learn from the qualifying exam process. Many important skills are incorporated in the qualifying exams.
4. Students should read and be familiar with the literature they cite in the written proposal and oral examination.

### **Details of the Qualifying Exam Process:**

As part of the qualifying examination for advancement to candidacy in the Neuroscience Program, students defend a research proposal that they develop. The exam process for each student is conducted by an ad hoc Examination Committee, which consists of three faculty members from the Neuroscience Program. The topic of the student's proposal must be an original one, and must be the product of the student's own intellectual effort.

Initially, a 1-page Specific Aims of the chosen topic is submitted to the Committee. This should briefly and clearly articulate the proposed research topic and its importance to medical research, any hypotheses to be tested, potential specific aims, and techniques you would use to test your hypotheses. This 1-page document is very important, and by the time you submit it, you should be well versed in the background of that field so that you have a clear idea about the experiments you plan to propose and their feasibility. It should be single-spaced, at least 0.5 inch borders, and a font size of 11 points or larger. The font may be Arial, Helvetica, Palatino Linotype, or Georgia typeface. The Specific Aims page must be submitted to the Exam Committee by 5 pm on the Friday of Week 6. The Exam Committee will then accept the proposal "as is" or provide recommendations for revising and resubmitting. If the proposal is deemed unsatisfactory, the student must revise or resubmit it within one week. For these students, all future deadlines will remain unchanged.

#### **Criteria for an acceptable Specific Aims**

1. Neuroscience Content - The proposal should involve some aspect of neuroscience.
2. Hypothesis Testing - The proposal should test a hypothesis as an integral feature of its structure.
3. Detail - The Specific Aims pages should contain sufficient detail about background, studies, and methods for the committee to make an informed decision on whether the topic is appropriate for this exam process.

The students will submit a **Final Written Proposal**, which is **due by 5 pm on the Friday of Week 10**, to all of your committee members and the exam overseers. This Final Proposal should represent a polished and well-thought out proposal. It **DOES NOT** constitute a "rough draft". One week later, you will be given feedback from your committee chairperson, who has conferred with the other committee members, on your submitted final draft proposal. You will then be given one additional week to address any raised issues in the written document before the **Final Revised Proposal** is **due by 5 pm on the Friday of Week 14**. At this point, you must have an acceptable written document before taking the oral portion of the exam.

**Note: If a student does not adhere to the submission deadlines without an acceptable excuse (e.g. major illness) s/he will likely fail the qualifying examination. His/her case will be discussed by the Neuroscience Program faculty and may (or may not) be given a second and final chance for examination on a case-by-case basis.**

Oral examination dates/times will be set prior to the last week of the Spring semester.

## *The Written Proposal*

*--modified from Individual NRSA instructions*

*(<http://grants1.nih.gov/grants/guide/pa-files/PA-09-208.html#SectionIV>)*

The written proposal follows the NRSA format (<https://researchtraining.nih.gov/programs/fellowships/f31>) and **must not exceed 1 page for the specific aims and 6 pages for the background and research strategy.**

In general, please include sufficient information in your written proposal to permit an effective review without reviewers having to refer to the literature.

### **Literature Cited**

List all literature references. Each reference must include the title, names of all authors, book or journal, volume number, page numbers, and year of publication. *The references should be limited to relevant and current literature.* While there is not a page limitation, it is important to be concise and to select only those references pertinent to the proposed research.

### **Writing the proposal**

- Students are expected to interact with the chairperson of their examination committee while preparing the proposal so that deficiencies can be identified and corrected early in the process.
- The examination is intended to be a vehicle for students to display their capabilities to their best advantage and for the process to be a positive learning experience. Interactions between students and faculty to foster these aims are therefore encouraged. Any specific suggestions provided by others should, of course, be explicitly acknowledged in written and oral presentations. Such acknowledgment does not detract at all from the student's own intellectual effort in compiling the proposal, but represents a professional courtesy to those who have helped along the way.

### ***Plagiarism***

Plagiarism is defined as the practice of taking someone else's work or ideas and passing them off as one's own. It is strictly forbidden, and individuals that plagiarize work will be given a failure for the qualifying exam. It is critical that the written proposal be written in the student's own words (cutting and pasting from a review or scientific article is unacceptable). This is true for all aspects of the proposal, including figures, figure legends and methods descriptions.

### ***The Oral Examination***

During the oral examination, the student is asked to make a short 30-minute presentation of the research project as a launching point for the question/answer period that follows. The determination for pass/fail is dependent upon the student's presentation and responses to questions posed by the committee. These questions normally focus on:

- the theoretical basis of the experimental techniques selected,
- the appropriateness of the experimental methods to the specific aims of the project,

- the limitations of the experimental methods.
- the exact nature of the results that are to be expected (this does not mean only the results that will support the hypothesis),
- the interpretation of these results (including a critical assessment of ambiguities that may arise),
- alternatives should the primary experimental approach fail.
- In addition, questions about subjects covered in course work especially relating to basic neuroscience are appropriate.

**Committee members**\*: Each student will have an individual oral examination committee. Typically, these committee members will also serve on the student's dissertation committee, but the student may elect to make changes in the makeup of the dissertation committee after successfully completing the oral examination. The oral examination committee will consist of a minimum of 3 graduate faculty in the Neuroscience Institute. One official observer (a faculty member co-organizing the qualifying exams) will attend each exam to ensure fairness and equity in the qualifying examination process.

\*For students electing to combine the oral qualifying exam with their Dissertation Defense Proposal, 2 additional faculty members from outside the Neuroscience Department are required.

To help maintain consistency from exam to exam, the qual exam overseer, Dr. Patrick Mulholland, will participate in all oral exams. The overseer is also charged with ensuring that all students are treated fairly and equitably across the different exams.

**Chairperson**: The student's faculty member serves as the chairperson. The principal responsibility of the chairperson of the qualifying examination committee is to create conditions under which the student being examined is able to display his/her best abilities. In addition to presiding over the oral examination itself, the chairperson acts throughout the examination process as the student's primary contact person with the examination committee. He or she should be available to the student to give advice and guidance.

### ***Normal outcomes of the exam***

Oral Presentation: The student will present a 30-minute seminar presentation of the proposal followed immediately by an oral discussion. The discussion will begin with questions from all those in attendance and then proceed to questions from committee members. All of the committee members must be present (electronic participation is allowed). Questions may broadly cover aspects of neuroscience and research design, but primarily will be oriented towards the proposal. After this phase of the examination, the committee will adjourn to discuss the candidate's performance and to vote. The exam overseer may participate in the discussion, but does not vote on the outcome of the exam.

Possible outcomes of the initial Exam

1. Pass. This requires unanimous vote to pass by all three committee members.

2. Re-examination. In the event a student fails the proposal defense, the committee will either recommend the student be given an opportunity to reschedule the defense, or the student will be removed as a Ph.D. candidate in the Neuroscience Program (a terminal M.S. with thesis would be possible). The proposal defense may be taken a maximum of two times. Two failures result in termination of enrollment in the PhD program.

Possible outcomes of a Re-exam

1. Pass.

2. Failure. The Examining Committee has decided that the student does not have the potential to complete the Ph.D. program.

We wish all candidates the very best of luck in their examination.

### **After the Oral Examination**

After informing the student of the outcome of the examination, the committee is asked to fill out the required forms and the student submit one copy to the Graduate Coordinator (Brett Froeliger) and one copy to the College of Graduate Studies (Dodie Weise).

### **Combining the Oral Exam and Dissertation Proposal Defense**

For students who have a 7-page proposal that represents a well-developed dissertation project, the oral qualifying exam may also serve as their Dissertation Proposal Defense. In this case, the dissertation committee, comprising three NI faculty and 2 additional faculty members from outside the Neuroscience Department, will attend the presentation, oral exam and ask any additional questions regarding the dissertation proposal. Only the three members from the NI will cast a vote of pass or no pass on the oral exam portion, whereas each of the five members will cast a vote on the success of the student's dissertation proposal defense.