

# G&D Candidacy Exam

ver. 6/18/2009

## Selection of Topics

Students will write three one page “off topic” (see below) abstracts that could be developed into a full written proposal. The abstracts will be evaluated by the student’s advisory committee. This committee will select the abstract that will best serve as a subject for the main written proposal. The three abstracts will be considered (along with other factors) at the final advisory committee meeting in deciding if the student should petition for candidacy. Students should do sufficient reading on the three topics so as to be certain that they can develop a full proposal based on the abstract selected.

## Abstract Format

The three abstracts will each be 1 page long (plus references) and will include background, significance and an original experimental hypothesis addressing a current gap in knowledge. The hypothesis should be the student’s own idea and not taken from any other person. It should be possible for the student to develop specific aims and an original research plan from the abstract that will be used in the main proposal.

## The Written Proposal

The student will write a full 10-15 page NIH style research proposal for a project of 2-3 years that may involve between 1-to-3 persons (small lab) based on the selected abstract. This proposal should be based entirely on the student’s own ideas without any input about the research plan from the advisor. The written proposal will be given to the exam committee two weeks in advance.

The written proposal shall consist of:

**Abstract**, should be one to two pages, that clearly state a hypothesis, and specific aims that will experimentally test the hypothesis.

**Background and Significance**, should be four to five pages. This section should introduce the reader to the topic, experimental system and identify where there are gaps in our knowledge. This section should also form the foundation on which the experimental plan will be developed.

**Research Design and Methods**, should be five to seven pages in length. This section should be a detailed description of the experiments that will be performed. This should include experimental design (without the need, in most cases, to include buffer conditions, etc.), how data will be collected, interpreted and what expected outcomes are. In addition, you will need to provide a rationale for the aim and alternative approaches to obtain results should your first approach fail.

**Literature Cited**. This section is not included in the page count. The student should cite the literature used in the development of the proposal. All citations should be complete, containing authors, article title, journal name, volume and pages.

Students are encouraged to use figures in their proposals wherever they feel it will help the reader to better understand the application. Images taken directly from others should be used only when necessary to illustrate previous findings and should be accompanied by a clear citation of the source. Schematic diagrams should be generated by the student.

## **The Examination**

At the exam time/ date, the examination committee will first discuss and determine if the written proposal is satisfactory. A satisfactory proposal is one that is well written, and contains all the components described above.

*If the proposal is unsatisfactory* the student will not present an oral defense until the proposal is revised (a “retake”). The committee chair will provide a brief written critique of the areas that need improvement to the student within two days. The time allowed for revision will be decided by the committee but will be at maximum three weeks. During this period the student may seek advice from the exam committee members. If the revised proposal is found to be unsatisfactory the student will have failed the written exam.

*If the written proposal is satisfactory* the student will be asked to go ahead with an oral defense of the research plan at the same meeting.

The student will make a 30 minute oral presentation describing the proposed project, during which he/she can expect interruptions only for questions of clarification. The committee will then ask questions about the research plan, alternate strategies, significance and background relevant to the proposal in order to evaluate the student’s depth of knowledge on the subject.

## **Outcome for the Examination**

At the end of the exam the committee will discuss the student’s performance and inform the student of the outcome in both the written and oral exam. Unconditional Pass, Conditional Pass, Retake and Fail are all possible outcomes for each exam.

## **Timeline**

### **Final Advisory Committee Meeting, Evaluation of Abstracts, Petition for Candidacy**

#### For students matriculating at GSBS in the fall term

Complete three abstracts, have final advisory meeting and petition to GSBS prior to the end of August (after the second year) for review at the September Academic Standards Committee meeting.

#### For students matriculating at GSBS in the summer term 2009 or in the summer thereafter

Complete three abstracts, have final advisory meeting and petition to GSBS prior to the end of May (at the end of the second year) for review at the June Academic Standards Committee meeting.

### **Candidacy Exam**

- Must be held within 8 weeks of the final advisory committee meeting where the research proposal topic is selected.
- The main proposal will be submitted to the exam committee 2 weeks in advance of the exam date.

## What is “Off-Topic”?

The topic of each abstract and the main proposal should be different from the students planned dissertation work. The goal is to allow the student to devise their own original research plan and to learn about other areas, including areas completely unrelated to their mentor’s scientific objectives.

The topic must be unrelated to the student’s dissertation project. The central hypothesis and specific aims should NOT:

- Include work the student has already done or is planned in the dissertation project.
- Overlap projects the student completed as part of a previous thesis or dissertation (if you have another degree).
- Overlap projects that are being worked on by others in the mentor’s lab, or overlap projects known to be planned by the mentor.
- Be based on trivial variations of published work or of the student’s dissertation project (i.e. the same experiments in another organism or the exact same approach applied to a different gene).
- Simply repeat experiments that have already been published or presented publicly by others.

If an abstract or proposal is deemed by your advisory committee to be “not off-topic” the student will be required to submit another one. If students have questions about whether a particular idea for a summary is “off-topic” they can ask the G&D program director and/or members of their advisory committee before starting on it.