

Guidelines for Qualifying Exam for Department of Pathology.

Dissertation Committee

In consultation with your mentor, a dissertation committee of 4-5 faculty members, selected according to the Molecular and Cellular Basis of Disease (MCBD) guidelines, should be assembled during the second year. For the exam, and subsequent meetings, one member should be chosen to serve as chairperson at your proposal defense, and to be the primary liaison between you and your committee. Your mentor, while being present, will not provide assistance during the defense. A list of MCBD faculty members can be obtained from Dr Isa Hussaini.

Timetable

The proposal should be prepared and successfully defended before **September 15th** at the beginning of the third year in order to remain in good standing as a Ph.D. candidate. Bear in mind that the committee may require revisions to the proposal and even a representation of the defense.

Examination process

The Qualifying Exam consists of the construction of a NIH-style grant application based on the students chosen thesis project. Specific details are described below. After the proposal has been reviewed by the committee, the student will perform an oral presentation of the proposal, which will be followed by questioning by the committee. Subsequent to the defense, the student will present the research plan in the departmental PRPR seminar series.

Components of the Qualifying exam: In the first component, there will be a verbal presentation of the content of the student's research proposal during which the committee will determine whether the student has developed a proposal of sufficient integrity and whether the student can defend the approaches and conclusions of the proposed work. The committee will critique the logic and feasibility of the proposed studies and may make specific suggestions. For the second component, the committee will ascertain that the student has a working knowledge of the fundamental and advanced topics relevant to the thesis proposal.

The proposal will be provided to the committee members at least two weeks prior to the exam. Be aware that committee members may prefer an electronic version of the proposal. The student should ensure that a current transcript is available for the committee at the defense.

Potential outcomes: There are three potential outcomes for the Qualifying Exam. **A complete pass**, in which the student advances to candidacy contingent upon the fulfillment of all other requirements from the University. **A conditional pass**, in which

the student will be required to make alterations to the research proposal and/or be required to take additional coursework as recommended by the committee. **A fail**, in which the student is dismissed from the MCBP program, but may qualify for a Master's degree if University requirements have been fulfilled.

Students who successfully advance to candidacy will be expected to complete requirements for the Ph.D. within 5 years of the Qualifying Exam or may be liable for re-examination and possible dismissal.

Proposal Instructions

The research proposal will follow the format of an NIH application, with sections for: I. Abstract II. Specific Aims; III. Background and Significance; IV. Preliminary Studies; V. Experimental Design and Methods; and VI. Literature Cited. The total size of the application, excluding section V. but including Figures and Tables, should not exceed 30 pages of double spaced typing (12 point font minimum in main text, 10 point in figure legends). As with any grant application, the emphases should be on an explanation and justification of hypotheses to be tested, the approach by which the hypotheses will be tested, the interpretation of experimental outcomes and how they reflect upon the hypotheses. The proposal is for 2-3 years work, so should not be overambitious and should reflect the experimental capabilities that either the student's lab or a collaborator's lab possesses.

I. ABSTRACT

(Suggested length – ½ page)

In lay terms, provide an overview of the goals of the project and its potential significance

II. SPECIFIC AIMS

(suggested length - 1 page)

This Section contains the formal statement of the hypothesi(e)s to be tested with a succinct description of the basis of the statement and an overall objective of what the research is expected to accomplish. Following the statement, elaborate on the experimental goals of the proposal under the subtitle associated with each specific aim. Most proposals will consist of 2-3 Specific Aims. Then list the major experimental goals (i.e. specific aims) that will be completed to achieve that overall objective during the course of your study.

III. BACKGROUND AND SIGNIFICANCE

(suggested length – 5-7 pages)

Provide an overall introduction into the field of research, with increasing focus on the information from which the hypotheses were developed. Illustrate why the proposed

research is important in the context of the results that others have previously acquired, and how the knowledge gained from the proposed research might influence thinking in the chosen field.

III. PRELIMINARY STUDIES

(suggested length – 5-7 pages)

The preliminary studies section should detail those experiments already conducted by the student that are pertinent to the proposal. Included in the discussion of these experiments should be insights as to how the results contributed to the development of the hypotheses that are to be tested in the proposal. The preliminary studies section may also include experiments previously conducted in the lab if they have not been published. However, it should be noted that, given the nature of this proposal, there is no expectation for preliminary studies and the review of the proposal will not be predicated by this section. In such a case, the Background and Significance Section may be expanded to provide further rationale for the proposal.

IV. EXPERIMENTAL DESIGN AND METHODS

(suggested length – 10-12 pages)

Introduce the question to be tested, how the question fits into the overall scheme, and detail how the question will be tested. Standard techniques do not need to be elaborated on, but modifications on such techniques should be explained. The experimental approaches should be discussed, along with predicted outcomes, interpretations of predicted and, importantly, unpredicted outcomes and alternative approaches if difficulties are anticipated. Pay particular attention to how each experimental result reflects upon the hypothesis, and introduce potential follow-up experiments that might confirm or clarify results and their interpretation. It should be stressed that the interpretation of each outcome is of as equal or greater importance as the description of the experiment. This section is often best approached using a rationale; approach; interpretation format. Provide a timeline for the structure of the research proposal.

V. LITERATURE CITED

Use complete literature citations, including all authors and titles. The bibliography need not be exhaustive, but should be relevant and current.