Guidelines for the QUALIFYING EXAM PROPOSAL

Program in Cell Biology

Proposal Topic

The student selects a proposal topic. The topic can be the student’s actual research project, a topic that is related to the thesis research, or a topic that is unrelated to the thesis research. Consultation with the thesis advisor and others is permitted. The topic should be focused enough so that completion of the resulting proposal could be achieved by a single worker in a 2-3 year period.

Formation of Qualifying Exam Committee (QEC)

A Qualifying Examination Committee is formed in consultation with the thesis advisor and graduate program director. The committee will consist of three or four GSBS faculty in addition to the thesis advisor. Inclusion of one faculty member whose primary affiliation is outside the Cell Biology Program is suggested, but not required.

If the topic is unrelated to the thesis topic, the QEC will be chosen by the graduate program director.

If the topic of the proposal is or is related to the student’s research, it is strongly advised that the QEC be chosen to include faculty likely to serve on the student’s Research Advisory Committee. The student and thesis advisor will develop a list of the proposed candidates for the QEC, including a suggestion for Chair of the committee, and will submit it to the graduate program director for approval PRIOR to contacting potential committee members. Once approved, the student should immediately contact the proposed QEC members to confirm their ability to participate and to determine a date for the Abstract meeting. The student should then submit to the graduate program director a confirmed list of QEC members and the date for the Abstract meeting.

Preparation of the Abstract

The abstract should be approximately one page and no more than 2 pages. It should provide a brief introduction to the topic, explicitly state the problem to be investigated and why the problem is of interest, and should briefly summarize the experimental approaches in the form of specific aims designed to address specific hypotheses. References may be included but are not required. The listing of references is not included in the page limitations. The abstract should be distributed to the committee at least 5 days prior to the Abstract meeting. It is the student’s responsibility to ensure that the Abstract is received by each member of the QEC.

The student may consult with the thesis advisor and any other GSBS faculty while developing the Abstract. When the topic of the proposal is or is related to the student’s thesis research, the
student and thesis advisor are reminded that the abstract and subsequent proposal are to be developed and written by the student. Adapting portions of the mentor’s existing or in progress grant application is explicitly forbidden.

Abstract Meeting

The student and the committee meet to discuss the abstract. The student should be prepared to describe relevant background and to justify the hypotheses and specific aims. Preliminary data, if relevant, can be presented. The QEC is expected to question the student with the idea of helping the student identify any significant problems, omissions, etc. If necessary, the committee can and should help the student identify different means to improve the abstract. The goal of the meeting is to provide the student with instruction and constructive criticism. The committee should not re-write or re-organize the abstract for the student. It is imperative that the QEC require the student’s involvement in any suggested changes.

The committee may accept the abstract as is, may accept the abstract with specified changes, or may ask that the abstract be re-written. In the latter case, the QEC will decide whether another Abstract meeting will be required or whether the Chair of the QEC will poll the QEC for approval after the revised abstract has been distributed. A revised abstract MUST be approved within two weeks of the Abstract meeting.

The thesis advisor should be present at the Abstract meeting but should not be an active participant in the discussion or questioning.

The Chair of the QEC will email the graduate program director summarizing the outcome of the Abstract meeting.

After the abstract has been approved, the student should proceed with preparation of the Qualifying Examination Proposal. The student should immediately arrange for an Exam date and time, preferably between 5-6 weeks following Abstract approval. The student is also responsible for reserving a room for the exam and should request the room be reserved for 3 hours. Once a date, time and place are confirmed, the student shall email this information to the graduate program director.

Following completion of the abstract meeting, the advisor and student should not discuss the proposal, and the advisor should not participate in preparation of the written proposal.

The proposal will be due four (4) weeks after the date of the abstract meeting. It is the student’s responsibility to ensure that the Proposal is received by each member of the QEC.

Format of the Qualifying Exam Proposal

The proposal should address these questions:

-- What is your hypothesis or question?
-- Why is the work important?
-- What do you propose to do?
-- What has already been done?
-- How are you going to do the work?

Abstract
The approved abstract will be one to two pages. Minor changes are permitted after Abstract approval. Significant changes should be made in consultation with the Chair of the QEC.

Background/Introduction and Rationale
Briefly present the background information and literature that led to the proposal. Critically evaluate existing knowledge (don't assume that because it's published it's right!). Explain how the proposed study fits into the bigger picture. Provide a rationale for the experimental approach.

Specific Aims
State the objective(s) of the study and what the specific research proposed is intended to accomplish. State the hypothesis to be tested. Generally this should be no more than 1 page in length.

Experimental Design and Analysis of Results
Describe clearly the research design and the experimental approaches to be used to address the specific aims of the project. Provide a logical plan for how the hypothesis will be tested. Address the strengths and limitations of the methods/procedures and why these are the most appropriate for the particular research question(s). Discuss anticipated or possible results and explain how the results will be analyzed and interpreted. Discuss the potential difficulties and limitations of the proposed studies and describe alternative approaches that might be taken.

Explain methods to be used but do NOT provide detailed protocols in the proposal. Technical details should be included only when not routine and where critical to the proposed studies. However, you should be prepared to discuss and/or explain the specific steps in any method used in your proposal in addition to limitations of the method and alternative methods.

Length
The entire proposal, exclusive of references but inclusive of everything else, should be 15-20 double-spaced pages. Pages should be numbered and should have a 1 inch margin on all sides.

Format of the Qualifying Exam
The student should prepare a short presentation, as if the intent were to give a summary of the proposal. Schematics of relevant pathways, methods, etc., that may not have been included in the written document but may aid in explanation are permitted and encouraged. Typically, however, the committee will interrupt with questions and/or may direct the student to present specific areas of the proposal, while skipping others.
Guidelines:
• The student should be prepared to explain and justify all aspects of the proposal.

• The student should be prepared to explain in detail any methods utilized in the proposal.

• The student should be able to discuss conclusions that might be made from results obtained from the proposed experiments and should be able to generally discuss future directions for the work.

• The student should be prepared to answer questions on topics related to the research proposal. The committee may take the line of questioning in any direction, but should keep questions related to the topic at hand and to general cell biology topics that were addressed in the core course. Random questions about unrelated topics are discouraged.

• The thesis advisor is not permitted to attend the Qualifying Examination.

Note about Powerpoint presentations:
A Powerpoint presentation is not required. If Powerpoint is used, it is the student’s responsibility to ensure that the room chosen for the exam has existing Powerpoint capability or that a projector is obtained for the room. The student should arrive well in advance of the start of the exam to set up his/her presentation. It is not appropriate to delay the start of the exam while technical difficulties are solved.

Possible Outcomes
At the conclusion of the Examination, the student leaves the room and the QEC Chair polls the Committee members. Members will be queried for votes in the following order: fail, re-examination, conditional pass, pass.

• A student fails the Examination if 2 or more committee members vote to fail.

• A re-examination is required if 2 or more committee members vote for re-examination. The committee then discusses whether any written changes to the proposal will also be required. Specific written changes will be required by agreement of two or more committee members.

• If any member votes for a conditional pass, suggestions for remediation (see below) are discussed. Each proposed remediation requirement must be voted upon by the committee and will be required of the student if a simple majority of the QEC votes for the proposal. In the case of a Committee with an even number of members, a tie vote is broken by the vote of the QEC Chair.

• If there are no votes for conditional pass, or if the committee is unable to pass any remediation requirements by majority vote, the student is given a pass.

• Conditional Pass – The committee may pass the student conditionally and require that the
student remediate demonstrated weaknesses. Remediation may include, but is not limited to:

• Obtaining a grade of “A” or “B” in one or more advanced topics courses or tutorials.
• Re-writing portions of the Qualifying Exam proposal.
• Preparation of a report, critique, or other written analysis of a specific topic about which the student displayed insufficient knowledge.

Conditions must be explicitly stated in a written report issued by the committee chair to the student, the thesis advisor, and the graduate program director, all of whom are responsible for ensuring compliance with the stated conditions. Any written requirements must be completed within three weeks of the examination date.

• Re-examination – The student is asked to repeat the examination and also may be required to make written changes to the research proposal. Only one re-examination is permitted, and it must be completed within three weeks of the examination date. If significant scheduling conflicts exist, a committee member may be replaced for the re-examination.

• Fail – Failure of the examination results in dismissal from the GSBS. The committee chair is responsible for completing the QE outcome form. In the case of a conditional pass, re-examination, or fail, the committee chair will also prepare a written explanation and will forward the summary to the student, the thesis advisor, the graduate program director, and in the case of failure, the Dean of the GSBS.