

## QUALIFYING EXAM FOR PhD STUDENTS IN THE INTEGRATED PROGRAM IN BIOMEDICAL SCIENCES

To be admitted to candidacy for the Doctor of Philosophy degree in the Integrated Program in Biomedical Sciences (IPBS), all students must pass a Qualifying Examination. The Qualifying Examination will consist of the writing and oral defense of a mock grant proposal on a topic different from the intended dissertation research. To insure that the topic of the proposal is sufficiently different from student's research, this topic should be approved in advance by the Examination Committee (see below).

An Examination Committee for each student will be composed of four Graduate Faculty members from among any of the 6 IPBS academic tracks. The Examination Committee will include the student's Advisor as a non-voting member; selection of the other three committee members will be completed by the student's academic track Ph.D. program committee (which includes the GPD and two other faculty members) in consultation with the Advisor. The composition of the Examination Committee should be decided early in the 4<sup>th</sup> semester (Spring of Year 2) and communicated to the student in early February. The student will arrange a meeting with the Examination Committee, no later than May 1st of that year, to evaluate the Specific Aims page. The committee will approve the Specific Aims page or recommend changes that must be completed within one week. The student will then prepare a written proposal which must be defended orally to the Examination Committee by August 1. Students are free to consult with faculty members or others with established expertise with the topic and/or methods of the proposal, **in general terms**. Details of the proposed Specific Aims should not be discussed.

The Examination Committee will decide whether to pass or fail the student based on their evaluation of both the written document and the oral presentation/discussion of the proposal.

The format and procedures for the Qualifying exam are described in the Student Handbook.

### *Excerpt from Student Handbook regarding the Qualifying Exam:*

For admission to candidacy for the PhD degree, all students must pass a Qualifying Examination. The Qualifying Examination is standardized among all IPBS tracks, and is administered at the end of the 4<sup>th</sup> semester after the required coursework is complete. The purpose of the Qualifying Exam is to evaluate the student's competency in the following areas:

1. **Hypothesis or Experimental Question.** The student must have a hypothesis or experimental question which is clearly stated, testable, and well-justified. The rationale for this hypothesis or question must be clear, and the student must be able to defend his/her proposed hypothesis or question.
2. **Experimental Approach.** The student must present an experimental approach that is clearly described and logical. The approach must directly test the hypothesis or experimental question. Discussion of expected and alternative outcomes, potential pitfalls, and alternative approaches must be included.
3. **Background Knowledge.** The student must display a deep understanding of the Qualifying Exam topic and supporting literature. The student must also have broad knowledge of the general biomedical sciences and experimental approaches, especially in their specific track.
4. **Oral Presentation.** The student must be able to clearly articulate and describe the research proposal. The student must be able to defend his/her rationale for specific approaches and respond to critiques in a professional manner. Overall oral communication skills are evaluated in this section.

### *Procedure*

The Qualifying Examination will consist of preparation and oral defense of a mock grant proposal on a topic different from the intended dissertation research. The format of the grant proposal should be as follows: Specific Aims page, Background and Significance, Preliminary data (from the literature), and Research Design and Methods. The proposal should be a maximum of 20 pages in length and double-

spaced, not including references. The topic of the grant proposal should be determined by the student who should submit a Specific Aims page for approval no later than May 1st of the second year. An Examination Committee comprised of 4 faculty including the student's advisor (as a non-voting member) will evaluate the Specific Aims page and approve it or recommend changes that must be completed in a satisfactory manner within one week. After approval of the Specific Aims, the student should write the rest of the grant proposal and submit the complete document to the Examination Committee within 2 to 4 weeks (no later than the first week of July).

A defense of the grant proposal must be completed by August 1. The Examination Committee will evaluate both the written document and the oral presentation/discussion of the proposal on the basis of its originality, the student's mastery of the material, the degree of logicity/rationality of the presentation, the quality of the justification and the defense of the proposed research plan. To pass the qualifying examination the student must be assigned grades of "Pass" by at least two of the three grading examiners. The Chair of the Examination Committee will prepare a written summary of the Committee's evaluation. If the Committee determines that there are deficiencies in performance on the exam, at the discretion of the committee a final grading decision may be deferred. In this case the student will be given the opportunity to correct the deficiencies within a specified time frame, not to exceed one month, at which time the performance will be re-evaluated and a decision rendered.

**Upon completion of the Qualifying Examination** the GPD will login to the GSPS (<https://gsps.luc.edu/Secure/login.aspx>) and initiate the Qualifying Examination form (which is found under "Student Forms", and is called the "Comprehensive Exam" by the LUC Graduate School).

The Qualifying Exam Grading Rubric, as described below, provides room for comments from the Examination Committee members. All Examination Committee members are required to complete the form. A summary of the Committee evaluations, based on the comments from each of the Examination Committee members, will be composed by the Examination Committee Chair. The Examination Committee members will not put a numeric score on each of the points, but will provide an overall pass/fail grade for the exam. Possible outcomes of the exam are "pass" or "fail", or in some cases, "decision pending". In the case of "decision pending," students will be informed of the weaknesses and strengths and what must be done to obtain a grade of "pass." "Decision pending" students will have an opportunity to perform remediation in a form and time frame prescribed by the Examination Committee. The type of remediation will depend on which one(s) of the four criteria were unsatisfactorily completed. In the event that a student fails the examination they may petition the Associate Dean for a remediation examination, which if granted will be conducted as soon as possible under guidelines established for the track. If remediation is not granted, the student will be terminated from the PhD program.

Both the track GPD and the student will be provided with a copy of the summary of the Examination Committee evaluation regardless of whether the student passes or fails. Students who are in the "decision pending" category will only receive a report when they have completed their remediation and received a final grade. A copy of the summary and individual Examination Committee member comments will be filed in the program's administrative office.

# Qualifying Exam Grading Rubric

Integrated Program in Biomedical Sciences

Loyola University Chicago

Committee Member:

Grade (Pass/Fail):

A grade of "Fail" by two or more committee members will result in remediation or termination from the Ph.D. program.

## Hypothesis or Experimental Question

The student must have a hypothesis or experimental question which is clearly stated, testable, and well-justified. The rationale for this hypothesis or question must be clear, and the student must be able to defend his/her proposed hypothesis or question.

Comments:

## Experimental Approach

The experimental approach must be clearly described and logical. The approach must directly test the hypothesis or experimental question. Discussion of expected and alternative outcomes, potential pitfalls, and alternative approaches must be included.

Comments:

## Background Knowledge

The student must display a deep understanding of the Qualifying Exam topic and supporting literature. The student must also have broad knowledge of the general biomedical sciences and experimental approaches, especially in their specific track.

Comments:

## Oral Presentation

The student must be able to clearly articulate and describe the research proposal. The student must be able to defend his/her rationale for specific approaches and respond to critiques in a professional manner. Overall oral communication skills are evaluated in this section.

Comments: