

Qualifying Exam

The student will be permitted to take the qualifying examination after s/he has completed the courses required in the relevant Track. The Advisory Committee should be formed and officially appointed no later than the point at which 18 credits hours of graduate work have been accumulated. Qualifying exams can be taken no earlier than one academic year after the official formation of the Advisory Committee. Exceptions can be made for students transferring into the program. Permission to schedule a qualifying exam should be requested by the student at their annual Advisory Committee meeting. The student should prepare a list of courses and grades received for all of their graduate work. The DGS will ensure that the relevant Graduate Program Core courses are completed.

STUDENTS ARE EXPECTED TO TAKE THEIR QUALIFYING EXAM DURING THEIR 5TH SEMESTER OF STUDY

The examination will consist of three components:

- a set of written questions created by the student's Advisory Committee
- preparation of a mini-NIH/NSF format research proposal
- an oral examination.

Written Questions

The written examination will be composed of questions designed to evaluate the student's understanding and competence of the specialty area within pharmaceutical sciences in which the student anticipates conducting his/her dissertation research. The time frame for the written exam is decided during a meeting of the Advisory Committee or by email/phone communication between (and initiated by) the student and committee members.

The graduate student should notify the Student Affairs Coordinator of the week the committee has designated for the written exam. The Student Affairs Coordinator will contact the committee by email to confirm the dates for the written exam and to request that questions (along with stipulations, such as open book vs. closed, time limits) be emailed to the Student Affairs Coordinator by the Friday prior to the start of the exam week. The Student Affairs Coordinator will contact the student as questions are received to relay the stipulations (ex. Dr. Smith sent closed book questions with a 4 hour time limit). The student will notify the Student Affairs Coordinator of the days/times the student prefers to take each part of the exam. The Student Affairs Coordinator will reserve rooms for closed book questions. The graduate student will return his/her answers to the Student Affairs Coordinator. A copy will be retained for the student file and the original delivered to the committee member who provided that question for grading. Committee members grade questions as pass-fail at the PhD level and notify the major professor of the results. Each Committee Member completes the Qualifying Examination Performance Evaluation (Written Component) Form. The Major Professor relays results to student and confirms approval to take the oral exam. The committee members bring the graded written portions to the oral exam and can bring up points for clarification.

NIH/NSF-style proposal

The student will prepare a research proposal prior to beginning the written questions portion of the examination. The student and his/her Major Professor will determine the topic for the research proposal. *For CET students, one of the Aims should address a clinical hypothesis.* The research proposal must develop one or more hypotheses that involve unique ideas that the student presents and tests in the proposal and that the student is able to defend in the oral examination. The student **must not plagiarize** the mentor's grant applications or publications. The format of the proposal will be an abbreviated NIH/NSF grant (see below). The students should distribute copies of the proposal to each Advisory Committee member **before** taking the written questions, and no later than **two weeks** in advance of the oral examination. Advisory Committee members will review the proposal for evidence that the student has learned the scientific method including identification of the aims of the research, generation of the hypotheses to be tested and proper testing of the hypotheses. The Advisory Committee's review of the proposal will focus on the student's mastering of the scientific method, not the specific research to be conducted.

Format of Written Dissertation Project Proposal Format ("mini-NIH/NSF")

The qualifying exam grant should be written using the NIH Guidelines for a Ruth L. Kirschstein National Research Service Awards for Individual Predoctoral Fellows (Parent F31).

<http://grants.nih.gov/grants/guide/pa-files/PA-14-147.html>

Specific Aims (one page)

State concisely the goals of the proposed research and summarize the expected outcome(s), including the impact that the results of the proposed research will exert on the research field(s) involved. List succinctly the specific objectives of the research proposed, e.g., to test a stated hypothesis, create a novel design, solve a specific problem, challenge an existing paradigm or clinical practice, address a critical barrier to progress in the field, or develop new technology.

Note: *For CET students, one of the Aims should address a clinical hypothesis.*

Research Strategy (no more than 6 pages total)

Organize the Research Strategy in the specified order using the instructions provided below. Start each section with the appropriate section heading — Significance, Innovation, Approach. Cite published experimental details in the Research Strategy section and provide the full reference in the Bibliography and References Cited section.

(a) Significance

- Explain the importance of the problem or critical barrier to progress in the field that the proposed project addresses.
- Explain how the proposed project will improve scientific knowledge, technical capability, and/or clinical practice in one or more broad fields.
- Describe how the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field will be changed if the proposed aims are achieved.

(b) Innovation - Fellowship applications should not include an Innovation section unless specified in the FOA.

(c) Approach

- Describe the overall strategy, methodology, and analyses to be used to accomplish the specific aims of the project. Include how the data will be collected, analyzed, and interpreted as well as any resource sharing plans as appropriate.
- Discuss potential problems, alternative strategies, and benchmarks for success anticipated to achieve the aims.
- If the project is in the early stages of development, describe any strategy to establish feasibility, and address the management of any high risk aspects of the proposed work.
- Point out any procedures, situations, or materials that may be hazardous to personnel and precautions to be exercised.
- Include any courses that you plan to take to support the research training experience.

If an applicant has multiple Specific Aims, then the applicant may address Significance, Innovation and Approach for each Specific Aim individually, or may address Significance, Innovation and Approach for all of the Specific Aims collectively.

As applicable, also include the following information as part of the Research Strategy, keeping within the three sections listed above: Significance, Innovation, and Approach.

Preliminary Studies for New Applications.

For new applications, include information on preliminary studies, if any. Discuss the applicant's preliminary studies, data and/or experience pertinent to this application. When applicable, provide a succinct account of published and unpublished results, indicating progress toward their achievement.

Literature Cited (no page limit)

List the most relevant literature cited in the proposal.

Oral Examination

The oral examination will evaluate the student's familiarity with literature in the specialty area in which the student anticipates conducting his/her dissertation research, skill in the recognition of meaningful questions for investigation, ability to design experimental protocols and ability to communicate effectively. Committee members may also ask questions related to the written questions portion. The student will defend the mini-NIH/NSF format research proposal. Committee members are encouraged to meet at the beginning of the exam to identify the issues and questions to be pursued in the oral examination. Each Committee Member will complete the Qualifying Examination Performance Evaluation (Oral Component) Form.

Steps and Forms for the Qualifying Examination

1. Intent of Examination

- a. To answer the question "Is the student ready to begin PhD-level work?"
- b. NOT to judge the project.

2. Qualifying Examination- Requirements

- a. Required by the Graduate School

- b. Student must have completed 36 hours in PhD program or completed a master's degree from an accredited U.S. institution and 18 hours in the PhD program.
- c. Must have a grade assigned to all completed courses—*have Student Affairs Coordinator submit Grade Change form to update previous "S" grades.*

3. Steps to get the Process started

- a. Have Advisory Committee approval for student to sit for examination- *have an Advisory Committee meeting.*
- b. Settle on dates for Written Questions to be given to student (See Part 4.b.) This should be in the month preceding the possible oral exam date. *Notify Student Affairs Coordinator.*
- c. Settle on date for Oral Portion of Examination.
 - i. For the semester in which the Qualifying exam is planned, the student should register for PHS767- Dissertation Residency credit, for 2 credits. The qualifying examination can be taken at any time during the semester.
- d. Student must login to their personal page on the Doctoral Degree Candidate Forms website http://www.research.uky.edu/cfdocs/gs/DoctoralCommittee/Selection_Screen.cfm. The student should complete the **QUALIFYING EXAMINATION REQUEST FORM** online and submit to the DGS for approval two weeks prior to your oral qualifying examination date.
- e. Grad School will return to Student Affairs Coordinator an AUTHORIZATION-TO-TAKE-EXAM card – *s/he will give it to your Mentor on the day of the oral exam.*
- f. **MUST** have all members present for whole examination

4. Format of Examination

- a. Three parts: Written Questions, Written Proposal, and Oral Examination
- b. Written question(s) submitted by each committee member to Student Affairs Coordinator
 - i. Committee members define rules (open vs closed, time limits, etc)
 - ii. Committee members grade questions pass-fail at PhD level and notify Mentor of results. The Committee Member completes the Qualifying Examination Performance Evaluation (Written Component) Form.
 - iii. Mentor relays results to student and confirms approval to take oral exam
 - iv. Committee members bring graded written portions to oral exam and can bring up points for clarification
- c. Written Proposal
 - i. NIH style research proposal. See format rules above and *check with your Mentor and advisory committee for any unique format and page limits that they wish to impose.*
 - ii. Goal- To assess if the candidate can identify a worthy research problem, formulate a hypothesis and design experiments to test that hypothesis
 - iii. You can use your current research project, but must show independence from your Mentor
 - iv. Provide written proposal to committee members **two weeks prior to oral examination**
- d. Oral portion
 - i. Clarification of points from written questions
 - ii. Oral presentation of research proposal. The Committee Member will complete the Qualifying Examination Performance Evaluation (Oral Component) Form.
 - iii. Can include data you have gathered
- e. Must pass all 3 portions to advance to candidacy

5. Results/Consequences

- a. If you are planning to take the exam for the Fall semester, register for 2 credit hours of PHS 767. If you are not planning to take any other courses that semester, these 2 credits will constitute full-time enrollment, and will cost only the tuition for 2 credits. If you wish to take additional course work that semester (such as a course that is offered only every other year) speak with your Mentor and the DGS before you register for that course, as this will cause your tuition costs to be greater.
- b. If you pass, you thereafter continue to enroll in PHS767 every fall and spring semester, for 2 credits, until you have completed and defended your dissertation. The Department or your mentor will pay the tuition for credits up to a total time in the program of 10 semesters. After that time, you must find a way (you or your mentor) to pay this tuition.
- c. If the qualifying exam is failed, you can retake it after 4 months (one time).
 - i. You must immediately drop PHS767 and add PHS 790 (Research) to make a total of 9 credits.
 - ii. Full tuition for all 9 credits will then be charged to your mentor or the department for that semester.
 - iii. Your committee will determine if you must re-take the entire questions/proposal/oral, or just individual parts.
- d. Department support for your tuition covers a maximum of 6 semesters at the full 9 credit rate. **Students are expected to take their Qual during their 5th semester.**
- e. Do not put off the Qual until your 6th semester, for if you fail, then you or your mentor will have to pay the full tuition.
- f. See Tuition Policy Statement for exceptions to these policies.