

Doctoral Comprehensive Examination

Purpose: The comprehensive exam should be a learning experience in which specific skills are developed, including effective and comprehensive literature review, writing ability, experimental design for hypothesis-driven research, and oral presentation skills. The examination will have both a written and oral component and students must demonstrate competency in both areas to pass, as described below.

The exam will consist of two parts:

1. A written research grant proposal, following the guidelines below. The grant proposal is similar to an NIH R21 or equivalent grant mechanism. **The standard project timeline is 2 years.**
2. An oral exam that assesses the general knowledge of the student in the research emphasis area and serves as a defense of the written proposal.

Due dates are as follows: The examination **MUST** be completed before the end of the **third year** of the program (medical residents pursuing a PhD degree have until the end of their fourth year). Doctoral students who entered the program during the Fall semester must pass their comprehensive exam by August 1st of their 3rd year. Doctoral students who entered the program during the Spring semester must pass their comprehensive exam by December 1st of their 3rd year. Doctoral students who entered the program during the Summer semester must pass their comprehensive exam by May 1st of their 3rd year.

Comprehensive Exam Timeline

The first step in this process is for the student to work with their committee to set the final oral examination date. The CEM program office is available to assist the student in securing an exam room once the committee and student have agreed upon a date and time for the exam. The final oral examination is a 2-hour meeting. Be mindful of the deadlines above. Once the committee has agreed on the date, the student must email the exam date to the Director of Graduate Studies, Dr. Odoi, and Program Coordinator, Morgan Tolbert. The student and committee will plan for the 8-week timeline shown below.

Set the date for the final oral examination.	Submit proposal topic to mentor and committee. Committee has 1 week to approve and add comments.	Student independently writes the proposal for 4 weeks. At the end of the 4 weeks, student emails the written proposal to committee.	Committee reviews the written proposal for 2 full weeks.	Oral Examination with committee.
WELL IN ADVANCE	WEEK 1	WEEKS 2-5	WEEKS 6-7	WEEK 8

Part 1 - Written Research Proposal

Submission & Approval of Research Proposal Summary (1 week)

The student will submit a one-page project summary (e.g., Specific Aims/Project Summary page) to their committee and their mentor. The committee and mentor will review the project proposal summary, and provide feedback/suggestions on the proposal to the student within a week of submission. The proposal topic may be conceptually related to the student's intended doctoral research, but cannot be identical in terms of experimental design. Once the proposal topic is approved, the 4 week writing period begins.

Writing the Research Proposal (4 weeks)

Once the topic is approved, the student informs the committee of the topic and timeline. The student is given **4 weeks** to write their research proposal. The proposal must be written independently by the student.

The student is required to email the final written research proposal to all committee members and the CEM Program Administrative Office, at the end of the 4-week writing period.

Committee Reviews the Written Research Proposal (2 weeks)

Once the 4-week writing period is over, the student is required to email the written research proposal to all committee members and the CEM Program Administrative Office. The committee is given **2 full weeks** to review the research proposal.

Format and Submission of Written Research Proposal

The proposal should adhere to the following guidelines (similar to an NIH R21 or equivalent grant mechanism), including page restrictions. **Standard Project Timeline: 2 years**

Proposal Style & Page Limitations

File Type	Editable Microsoft Word document
Font Requirement	Arial or Times New Roman; black font color; at least 11-pt font; single spaced
Margins and Paper Size	At least 0.5" on all sides, Standard 8.5" x 11" paper size
Page Limits	
Project Narrative	4 lines (1 short paragraph)
Project Summary - Abstract	30 lines
Specific Aims – Hypothesis	1 page
Research Strategy	6 pages
Bibliography	Unlimited
Biographical Sketch	2 pages

Face page: Proposal title, investigator, committee members' names, & project start and end dates.

Project Narrative: Describe the relevance of this research to public health or applied field. Use plain language that can be understood by a general, lay audience.

Project Summary/Abstract: Meant to serve as a succinct and accurate description of the proposed work when separated from the application. This section should be informative to other persons working in the same or related fields and understandable to a scientifically or technically literate reader.

Specific Aims: Briefly state the objectives of the research. List the specific goals and any hypotheses to be tested, and summarize expected outcomes and impact of the results.

Research Strategy: Include significance, innovation, and approach sections.

- **Significance:** Importance of the problem or critical barrier to progress in the field that the proposed project addresses. How the proposed project will improve scientific knowledge, technical capability, and/or clinical practice in one or more broad fields. How concepts, method, technologies, treatments, services, or preventive interventions that drive this field will be changed if the proposed aims are achieved.
- **Innovation:** How the application challenges and seeks to shift current research or clinical practice paradigms. Describe any novel theoretical concepts, approaches, or methodologies; instrumentation or interventions to be developed or used; and any advantage over existing methodologies, instrumentation, or interventions. Explain any refinements, improvements, or new applications of these approaches.
- **Approach:** Describe the overall strategy, methodology, and analyses to be used to accomplish the specific aims. Include how the data will be collected, analyzed, and interpreted. 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. If there are multiple specific aims, you may address significance, innovation, and approach for each specific aim individually or for all specific aims collectively.

Bibliography: List references cited in the text using a single, scientific journal format. Where appropriate, each reference must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication.

Biographical Sketch: Student's biographical sketch should be in the NIH format found [here](#), or an equivalent grant format. Do not include an eRA Commons user name. Following the educational block, complete only sections A and B, as described below.

- A. Personal Statement.** Briefly describe why you are well-suited for your role in the project. The relevant factors may include aspects of your training; your previous experimental work on this specific topic or

related topics; your technical expertise; your collaborators or scientific environment; and your past performance in this or related fields.

- B. Positions and Honors.** List in chronological order previous positions, concluding with your present position. List any honors.

Project Budget: No written budget is expected. In lieu of a written NIH/NSF format modular/R&R budget, the student should be prepared to discuss, during the oral exam (Part 2), the budget needed to carry out the proposed project. The budget and study time frame should stay within the constraints (2 years; \$275,000 direct cost).

Part 2 – Oral Examination

The student's oral exam will be closed-door with the student's committee members. The student or the mentor can invite the Director of Graduate Studies to attend, but it is NOT required.

Students should prepare a summary of their grant proposal and give a brief 15-20-minute presentation. The oral exam is intended to establish the student's ability to orally present and defend a research proposal as well as to survey the student's general breadth of knowledge in the primary study area. Therefore, students should expect questions that probe their scientific knowledge as it relates to the subject matter of the research proposal. Although students are not expected to prepare a written, formal budget, the student should be prepared to discuss, during the oral exam, the budget needed to carry out the proposed project.

Assessment of Comprehensive Examination

The result of the comprehensive examination is determined by the committee at the conclusion of the oral exam. Before administering the decision, the committee must ensure that an appropriate number of questions dealing with the declared research emphasis area were administered, and that the examination was fair and rigorous.

There are two potential outcomes for the Comprehensive Examination, pass and fail.

Pass. A score of pass means the student has satisfactorily completed both parts of the exam and is free to continue in their program of study. A consensus exists among the examining committee members in favor of passing with at least a 2/3 majority on the committee (if the Director of Graduate Studies was invited, they may be asked to vote).

Fail. In case of failure, the student is required to take the examination again during the following semester. The student's mentor will explain the nature of committee's decision to the student. In the event of failure, the **mentor** must attach to the pass/fail form, a formal letter explaining the committee's decision for failure, and the plans for the 2nd attempt.

The result of the second examination is **final**. If a student fails the 2nd attempt, they will be dismissed from the PhD program at the end of the semester. With approval from their mentor and the Director of Graduate Studies, they may choose to enroll in the MS program, to receive as Masters degree instead.

If the student is not satisfied with the action of the exam committee, the matter should be discussed promptly with the Director of Graduate Studies.

Submission of the Comprehensive Exam Pass/Fail Form and Proposal

In order for the decision to be final, the Comprehensive Exam Pass/Fail form, and the full project proposal must be submitted to the CEM Program Office.

The **mentor** is required to email the pass/fail form, and the full written proposal to Director of Graduate Studies, and the CEM Program Office no later than 2 weeks after the examination is completed. That form is attached below. In the event of a failure decision, the mentor must also attach a formal letter explaining the committee's decision for failure, and the plans for the 2nd attempt.

PhD Comprehensive Exam Pass/Fail Form

This form certifies that

Student's Name

Pass or Failed*

their PhD comprehensive exam on

Date of Comprehensive Exam

as determined by their committee members listed below

Committee Chair

Committee Chair's Signature

Committee Member

Committee Member's Signature

Committee Member

Committee Member's Signature

Committee Member

Committee Member's Signature

Committee Member

Committee Member's Signature

*If a failure decision is made, the mentor must provide a formal letter detailing the reasons for failure, as well as the plan for the 2nd and final attempt.