

Departmental Guidelines for the UConn MCB General Exam

Revised 11/04/24

Description of the Ph.D. General Exam:

PhD students in the MCB Program are required to pass a General Exam by the end of their third year in the program. A committee composed of three members of the student's permanent advisory committee (their thesis advisor and two others) plus examiners will conduct this assessment. A minimum number of five faculty must participate in this process.

The exam is composed of two parts, a written proposal and a closed door oral exam with faculty. A public seminar will be given prior to the start of the oral exam but is not considered a formal component of the evaluation. The student will receive feedback from their committee on the seminar followed by a pass, fail or conditional pass for the written and oral sections of the exam. A student must pass both the written and oral sections of the General Exam to advance to candidacy. If a student's performance on either part of the exam is deemed insufficient by the committee, they may be asked to repeat these sections to achieve a full pass. Reexamination must be completed by the end of the semester following the original examination.

After the exam, The Report on the General Examination, indicating the results and the names of the faculty participating, must be signed off by all members of the advisory committee and submitted to the Office of the Registrar.

Preparation for the Exam:

Before embarking on this process, the student will prepare a one-page Specific Aims document as described below that must be approved by all members of the examination committee. The student should craft this document with input from the advisor. The committee members may provide feedback to the student to be taken into consideration when crafting the full proposal.

The thesis advisor(s) may provide constructive feedback to the student on the written proposal during the writing process. Examples include commentary regarding the comprehensiveness of the background knowledge, experimental design, synthesis of data, future work, and referencing.

The type and extent of feedback provided must be disclosed in writing to the exam committee when the proposal is distributed to the committee. The input provided to the student by their thesis advisor(s), described briefly in a document, will be taken into consideration when evaluating the student during each step in the exam. It is generally assumed that no line editing of the document by the thesis advisor has occurred.

The student will arrange for a formal announcement of the oral examination two weeks prior to the presentation and provide a written copy of the proposal to their committee members at that time.

Part One. The Written Research Proposal:

The written proposal should be 7-10 pages, single spaced, 0.5 inch margins and using a minimum of 11 point font size. Figures, charts, diagrams, etc. but not references are included in this page limit. The general organization is based on current grant submission formats for most federal agencies, and ***may*** include the following sections: Specific Aims, Significance, Background, Preliminary Data, Approach (which includes a Rationale and Experimental Plan for each Aim) and Outcomes, Pitfalls and Alternate Strategies and a Timeline. A brief description of each section is provided below. As stated above, the proposal must be submitted 10 business days or two weeks before the examination is scheduled to take place. The proposal will be evaluated by the committee in terms of both scientific content and clarity of writing style.

Specific Aims:

Think of this as an abbreviated version of your proposal. 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 have on the research field(s) involved. This section of the proposal is limited to one page.

Significance:

Explain how the proposed project will improve scientific knowledge, technical capability, and/or clinical practice in one or more broad fields.

Explain how this work challenges and seeks to shift current research practices or paradigms.

Background and Preliminary Data:

Provide a brief synopsis of the relevant background the reader needs to interpret your proposed research. This should not be a comprehensive review but rather highlight the background needed to place the area of research into context to understand your experimental hypotheses and approaches.

Keep in mind not all members of your committee are in the same area of research; it is critical to explain why the system/question/approaches proposed are interesting, important, and feasible.

Approach and Outcomes:

This section should outline the general plan of work, including a broad design of activities to be undertaken, and a description of experimental methods and procedures. Proposers should address what they want to do, why they want to do it, how they plan to do it, benchmarks indicative of successful completion of the aims, and what benefits could accrue if the project is successful. Be clear in your explanation of experimental design including how the data will be collected analyzed and interpreted.

Pitfalls and Alternate Strategies:

Discuss potential problems, alternative strategies, and outline anticipated benchmarks that will indicate successful completion of the aims.

Timeline:

Short paragraph accompanied by a schematic that helps the reader visualize the proposed experiments and their duration across the timeline of your proposed research. It demonstrates you have thought through feasibility of the work outlined.

Students must disclose any generative AI tools that they used to produce their document. They must keep a some step-by-step record of their use of these such tools, just as they record their experiments in their lab manual (either written or computational), which may be audited at the discretion of the committee. Students are ultimately responsible for the accuracy of and biases in the results generated by any AI tool.

Part Two, The Oral Examination:

1. Public Seminar (not included in the evaluation of the student):

A short public seminar (25-30 min) will be given by the student as an introduction to the examination but will not be included in the formal assessment of the student. This seminar is meant to communicate the overall subject area, hypotheses to be tested, and general experimental approach. This The student is free to practice this brief presentation with fellow students and/or their thesis advisor prior to the examination.

2. Oral Examination:

Immediately following the seminar, a closed-door formal examination will be given that includes questions on the proposal and tests the candidate's general scientific knowledge. Members of the examining committee and any other faculty who wish to remain will administer this examination. One member of the committee (not the major advisor) will serve as the chair of the examining committee. It is the job of this person to make sure that the candidate is examined and not the advisor and to generally keep the process moving along so the entire proposal is discussed. The major advisor will be present during this oral exam but mainly in the capacity of an observer.

At the end of the oral examination, the committee will provide feedback on the presentation content, style and slides, and may make suggestions regarding future presentation opportunities (e.g. conferences, local seminar series) and frequency.

The chair of the general examination committee will communicate the outcome to the candidate immediately following the deliberations.