

## **GUIDELINES FOR THE MICROBIOLOGY & IMMUNOLOGY DEPARTMENT 2024 ORAL PRELIMINARY EXAM**

The oral preliminary exam (also known as the doctoral oral examination) centers on the topic of the thesis project, and provides an opportunity for you to demonstrate your ability to discuss the fields of science related to your thesis proposal, as well as your ability to analyze problems and design experiments. The exam serves a dual purpose as the initial meeting of the thesis committee. Therefore, a separate decision to approve or disapprove your thesis project will occur in the same meeting.

**1. Prelim Exam Advisor.** If you have questions or concerns about any aspect of the preliminary exam process, please contact the Prelim Exam Advisor [Bob Bourret, [bouret@med.unc.edu](mailto:bouret@med.unc.edu), 919-966-2679 (cell), 6108 Marsico Hall].

### **2. Exam format**

At least one week prior to the meeting, provide your committee with a written thesis proposal of two pages or less describing your hypotheses, Specific Aims, and a brief overview of research design, including which parts of the research design have been completed. It is best to start with a formal Specific Aims page that captures the entire essence of your project and then expand to provide more details as appropriate about background, experimental design, results to date, etc.. The thesis proposal is not a written exam, and will not be graded, but rather serves to provide the committee with useful background reading. However, it is to your advantage to prepare a thoughtful, logical, well-written thesis proposal. It is permissible to get editing help when writing the thesis proposal, and the student should certainly discuss their proposal with their research mentor.

At the oral exam/thesis proposal meeting the student will give a short prepared presentation (~ 10 slides in total, three or four of which can be background information, approximately 15 minutes of presentation time if uninterrupted). The committee can interrupt at any time and ask any type of question relevant to the proposed work or relevant background knowledge. This presentation serves primarily as a stimulus for questions from the committee, rather than being a typical talk or seminar. The presentation should include a brief summary of the relevant background, then a statement of the overall question(s) you address in your proposal and the hypotheses that you will test. You should then go through each of your Specific Aims, summarizing the goals and the experiments that you propose. Expect to be interrupted with questions from the committee members throughout your presentation. The oral questioning typically lasts about 1.5 hours. When scheduling, plan for 2.5 hours to allow time for an exam of about 1.5 hours plus committee deliberations before and after.

The oral exam will focus primarily on your thesis proposal and related topics, although it is permissible for the committee to ask questions about any area of microbiology or immunology, as they deem appropriate. You should particularly be prepared to:

- Use the white board as needed when answering questions.
- Summarize the key findings of the main publications relevant to your topic and the implications for your proposed research.
- Describe the general features of any experimental methods that you proposed to employ (e.g. how the method works conceptually, what the method can or cannot tell you, key components, etc.)
- Suggest experiments to test hypotheses or answer questions raised by the committee.

Do not bring food or drinks for your committee members.

### 3. **Grading criteria.** The criteria for Passing the oral exam are:

- Demonstrated command of background knowledge regarding the thesis topic
- Demonstrated ability to propose a logically sound thesis project
- Demonstrated understanding of the concepts (not the experimental minutiae) underlying the experimental techniques proposed for use in the thesis project
- Demonstrated ability to "think on one's feet"

### 4. **Examiners**

**Thesis Committee.** The student chooses the Thesis Committee and Chair according to the guidelines specified in the document "M&I Thesis Committee Policies".

**Oral Exam Committee.** In June, after the deadline for submission of the written preliminary exam, the Prelim Exam Advisor will provide detailed instructions on forming the Oral Exam Committee and scheduling the exam.

The Oral Exam Committee overlaps extensively with, but is distinct from, the Thesis Committee. Both committees will be present for the oral prelim exam/project approval meeting as described in point #5 below. The Oral Exam Committee is composed of the following members:

- The Thesis Committee, minus the research advisor(s).
- A Common Reviewer, who serves on several Oral Exam Committees, to ensure that there is uniformity in the treatment of the students during the exam. The Microbiology & Immunology faculty members fulfilling this function are chosen by the Prelim Exam Advisor, and assigned after the Thesis Committee is determined.

The two bullet points above should complete the Oral Exam Committee for most students. To deal with less common situations, the following rules apply:

- The final Oral Exam Committee must have five members who are independent of the research advisor(s).
- Therefore, if the spouse or significant other of your research advisor is a member of your thesis committee, or if you have co-mentors from different labs, then an additional member of the Oral Exam Committee will be chosen by the Thesis Committee Chair, after discussion with you. The circumstance of two committee members from the same lab is already handled by Thesis Committee composition guidelines.

- Four of the five "independent" members of the Oral Exam Committee must be members of the Department of Microbiology & Immunology. The policies governing composition of Thesis Committees will ensure this, except when the research advisor is not a member of our department.

**5. Dual purposes.** The oral prelim format combines the oral preliminary exam and thesis topic approval into a single meeting. There are two committees with overlapping membership simultaneously present during the exam:

- The Thesis Committee, which includes the research advisor(s), but not the Common Reviewer or other members appointed for the purpose of the exam.
- The Oral Exam Committee, which includes the Common Reviewer, but not the research advisor(s) or other faculty not independent of the research advisor. Oral exam committee members who are not also members of the Thesis Committee will not attend future Thesis Committee meetings.

In the simplest and most common case, there will be six faculty members present - four who serve on both committees, the research advisor, and the Common Reviewer.

To resolve the conflict inherent between the two purposes, exam rules take precedent. The Common Reviewer will chair the exam. The research advisor may not participate in the questioning and is not allowed to offer comments, clarifications, or answers during the exam. Similarly, faculty who may be part of the Thesis Committee but are not independent of the research advisor (e.g. a second faculty member from the same lab, the spouse or significant other of the research advisor, the research co-advisor for students who jointly belong to two labs) must attend, but may not speak when the student is present.

After the student leaves the room, the Oral Exam Committee, led by the Common Reviewer, will first decide the outcome of the oral exam, again, without participation of the research mentor (and any non-independent faculty members who are present). The Thesis Committee, led by the Thesis Committee Chair, will then make a decision about thesis project approval, without participation of the Common Reviewer (and other faculty appointed only for the purpose of the prelim exam). The two decisions are independent of one another, so four outcomes are theoretically possible (i.e., the student could Pass both, either, or neither the oral exam and thesis project approval).

**6. Outcomes.** You will be notified of the outcomes of your oral exam and thesis project approval on the same day or the following day.

The Oral Exam Committee has the authority to require you to do something to remedy a particular area of weakness, regardless of whether you Pass or Fail the exam. Remediation might include taking a course, reading a defined list of publications, attending a journal club, writing the answers to a series of specific questions, writing a minireview, etc..

If the Oral Exam Committee requires you to remedy a deficiency, then the Common Reviewer will write you a letter in which the remediation requirements are clearly specified. Copies of this letter should be sent to the Director of Graduate Studies/Prelim

Exam Advisor (Bob Bourret) and to the Student Services Specialist (Jamie Desoto) for your file.

If you Fail the oral exam, then you will have a second opportunity to take it, after waiting at least three months (delay specified by Graduate School rules). Before a second attempt, you will meet with the Prelim Exam Advisor and your research advisor to assess what went wrong, develop a plan for success next time, and agree on appropriate timing for a retake.

If your thesis project is not approved, then another Thesis Committee meeting will be scheduled to discuss the matter again, typically within six months.

7. **Deadlines.** There are four deadlines in the oral prelim process:

- The student must inform the Student Services Specialist and the Director of Graduate Studies of their Thesis Committee and Chair by February 1, 2024.
- Students schedule their oral exam to include all members of both their Thesis Committee and Oral Exam Committee. The student must inform the Student Services Specialist and the Director of Graduate Studies of their exam date and Oral Exam Committee members by October 1st of the second year in the department (3rd year Ph.D. students, 2nd year M.D./Ph.D. students). It would be prudent to confirm that the composition of the Oral Exam Committee meets departmental guidelines prior to scheduling the exam.
- The student must provide all committee members with a copy of their thesis project proposal at least one week prior to the exam.
- For students who pass the written prelim on the first attempt, or delay taking the written prelim for a year, the oral exam must be completed by December 31st of the second year in the department (3rd year Ph.D. students, 2nd year M.D./Ph.D. students). For other students, the deadline for completion of the oral exam will be set based on individual circumstances.