

Tips For Successful Oral Preliminary Exams

A. Preparation Before The Oral Exam

1. **Figure out who your reviewers are.** Choose your Thesis Committee by February 1, 2024. Get your Common Reviewer assignment from the Prelim Exam Advisor in June. If your Oral Exam Committee requires additional members due to unusual circumstances, then meet with your Thesis Committee Chair to pick additional committee members. Confirm with the Prelim Exam Advisor that your committee composition is appropriate
2. **Schedule your exam well in advance (likely two months).** In most cases, your oral exam must be completed by the end of December. It will be challenging to find times at which you can get at least six faculty members together all at once, and availability will diminish as the holidays approach (or as other students simultaneously schedule their exams). Reserve a room for 2.5 hours, to allow time for an exam of about 1.5 hours plus committee deliberations before and after. It would be best to choose a room with white board space that is not covered by the projector screen.
3. **Find out what your committee expects at the exam.** Ask each of your committee members what they think is important for you to review, and what type of questions they generally ask.
4. **Background reading.** This is not primarily an examination of how many details you know, but rather of how clearly you can think about your topic and the experiments you propose. However, in order to successfully design and defend your thesis proposal, you will need to carefully read and think about the background literature in your field, and be able to recall key results/interpretations.
5. **Write your thesis proposal.** A good way to compose your thesis proposal is to write a Specific Aims page with the Big Picture stuff, and then add in another page of details and any results to date. Remember that although your proposal is not graded, you are being graded on your ability to propose a logically sound project and that you must provide your proposal to your committee at least a week in advance. You can get help from anyone (including your advisor) in preparing your proposal.
6. **Prepare your slide presentation.** Remember no more than 10 slides, and no more than three or four slides of background information. The goal is to focus on your ideas. It is a mistake to try to circumvent the slide limit by packing each slide with an enormous amount of information. Instead, think hard about what is most important to convey and focus on doing that well. You can get help from anyone (including your advisor) in preparing your slides.
7. **Understand your experimental methods.** Make sure you understand the basis for each of the techniques that you propose to use. How does the method work? What are the key components (i.e. meaningful details) of the method? What can the method tell you? What are the limits of the method? Determining whether the student actually understands what they propose to do is often a big part of the oral exam.
8. **Think about data interpretation.** Think about how you would interpret different outcomes (both expected and unexpected) to your proposed experiments. This will likely prepare you to handle some questions.

9. **Preparation time.** Everything that you have done since you began graduate school is preparation for the oral exam. In contrast to the written exam, you won't need to take much time off from lab work to prepare for the oral exam, particularly because the oral exam is directly related to your lab work.
10. **What about a mock exam?** For the purposes of thesis project approval, it makes sense to practice the oral presentation of your project and get feedback on your slides from your lab and research advisor. For the purposes of the oral exam, a mock exam is allowed, but is not necessary. It is not clear that a mock exam is helpful, and it might be harmful. The problem is whether or not the practice questions (often generated by other students) reflect actual exam questions. If you get practice questions of the wrong sort, then you might waste a lot of time worrying unnecessarily and preparing in the wrong way. If you do have a mock exam, then be sure your research advisor is involved, because he or she has likely been on oral exam committees and is familiar with the types of questions asked.
11. **Bring the necessary forms to your exam.** See Student Services Specialist Jamie Desoto to get (i) the Graduate School form to report your approved dissertation project, (ii) the Graduate School form to report the outcome of your oral examination, and (iii) the Microbiology & Immunology thesis committee meeting progress report form.
12. **Get some sleep.** The best last minute preparation that you can do is get a good night's sleep so you are fresh and alert for the exam.

B. At The Oral Exam

1. **What is appropriate to wear?** There is no need to wear professional or formal clothing to the exam. Instead, wear something that makes you comfortable. However, most students do dress better than usual. See point #12 regarding shoes.
2. **Who's in charge?** The Common Reviewer will lead the meeting.
3. **A vow of silence.** Your advisor(s) must attend the oral exam, but cannot participate in asking or answering questions, or making any comments. Similar restrictions apply to Thesis Committee members who are not independent of your research mentor (e.g. another faculty member from your lab, the spouse or significant other of your advisor, etc.)
4. **No food.** Do not bring food or drinks for your committee members.
5. **Before the exam starts.** You probably will be asked to step out of the room briefly after everyone is assembled but before the exam begins. Do not freak out and do not go far. The faculty are usually just refreshing their memories about who you are and how they wish to proceed (e.g. reminding everyone who is on which committee, grading criteria, etc.). You may also have an opportunity to talk to the committee without your advisor(s) present, in case you wish to share concerns.
6. **The exam begins.** You will be asked to begin the exam by telling the committee about your topic and your proposal with a short prepared presentation. The committee will typically give you a few minutes of talking to get comfortable. After that, expect to be interrupted with questions from the committee members throughout your presentation. The oral questioning typically lasts about 1.5 hours.
7. **Notes.** You may prepare notes to remind you about the things you want to say, especially for your opening comments. Once you get going, you will probably find that it is

easier to think of what you want to say and notes will not be necessary. At the beginning, when you are more nervous, it can be useful to have notes.

8. **A key picture.** If there is one figure that summarizes a central aspect of your proposal and that you will use multiple times, it is OK for you to bring it as a handout for the committee members. Alternatively, some students show up early and draw such a key figure on the board, where everyone can see the same picture and you can draw on it as the exam progresses. In general, be ready to use the board to diagram the things you want to talk about.
9. **What to bring.** You should bring your thesis proposal, your slide presentation, and any notes you've prepared for your presentation. Some students bring a stack of papers about the proposal topic, which occasionally can be helpful.
10. **What if you don't know the answer?** It is virtually guaranteed that you will get some questions you cannot answer. After all, you are facing five faculty members. Remember this situation is expected. Do not freak out, and do not try to fake your way through an answer if you don't know it. It is better to say "I don't know" than to try to fake it. If committee members realize from incorrect answers that you don't really understand one topic, they tend to be concerned that you don't understand other topics, and they will ask more and more questions to explore that lack of understanding. Nobody expects you to know everything, and nobody will worry about a few "I don't know" answers. However, you do not want to go to the extreme of inadvertently implying that you don't know anything. A good strategy is to say "I don't know about X, but here's something I do know about Y, which is a similar phenomenon." Essentially you want to communicate the parts that you do know and define as narrowly as possible what you don't know.
11. **Thinking on your feet.** The committee is often interested in finding out how well you can think once they have established the boundary between what you know and what you don't know. They will often offer hints to try to guide you to the answer. The committee will also often ask you to design an experiment to test a particular hypothesis or distinguish between different possibilities that come up during the discussion. There is nothing specific you can do to prepare for these types of questions - it is simply part of your training as a scientist. Just be aware that such situations will likely arise during the oral exam and try to keep your cool and not get flustered when it happens.
12. **Stand up!** Everyone will be seated at the outset of the exam. However, if you are able to do so, then you will do better and will influence the event more if you stand up and use the board right from the beginning. Standing puts you in the psychological position of informing the committee, rather than being grilled by them, and is one way to even up the 5:1 odds. Note that in order to stand up for an hour and a half, you should wear comfortable shoes.
13. **Be positive.** This is definitely an exam in which your attitude and overall composure have a big effect on the outcome. If you come across as being confident (but not cocky) and upbeat, the committee will tend to ask fewer questions and to give you the benefit of the doubt. If you seem insecure and tentative, they will worry that you do not really understand what you are saying and will tend to question you more deeply. If you are eager and enthusiastic to discuss your scientific ideas, the meeting can seem much more like an interesting conversation than an exam and the time will pass by quickly.

14. **The end.** When the committee members have asked all of their questions, you will be asked to leave. You may not learn the outcome until the next day. There is typically no correlation between the length of time that the committee talks and the decision that they reach. The committee members will want to discuss the strengths and weaknesses that they perceived. Such discussions are mostly for the benefit of your advisor, who will be able to pass those insights along to you and also help you to deal with any weaknesses. Sometimes, the committee gets interested in talking about some aspect of the science that emerged during the questioning.