**Preparing for the oral comprehensive exam**

**in the School of Plant Sciences**

***Thoughts for PhD students and their mentors***

**Introduction**

As students transition from the earliest stages of their graduate studies to becoming doctoral candidates, their intellectual and professional progress is marked in part by the formal process embodied by **comprehensive exams**. At the University of Arizona, comprehensive exams consist of two parts: the written exam, for which SPLS offers several options in terms of format and content (see SPLS Graduate Handbook and website for details), and the oral exam. This document is meant to help students and their mentors prepare for the latter: the **oral comprehensive exam.**

Below you’ll find some general guidelines regarding how mentors and students can work together toward their shared goal – successful completion of the oral exam. The format of the exam is not discussed in detail here, but can be summarized briefly as follows: the oral comprehensive exam is a 2-3 hour exam during which (1) the student presents and defends his/her research proposal, and (2) the comprehensive exam committee assesses the student’s knowledge and scholarship in topics ranging from fundamentals to more specialized topics at the interface of the student’s and the committee’s fields of study. The oral exam takes place after the written exam has been passed, and should occur in approximately the sixth semester of graduate study (see below for exceptions). Preparation should begin well before the semester in which the exam is given. Students who do not pass on the first attempt may be given a chance to repeat the exam ca. 4 months after the first attempt; the second attempt is the final attempt, and the student will not have an opportunity to advance to doctoral candidacy in that major.

At the end of the document you will find some information regarding the Graduate College’s policies on the exam, and additional resources for students available via the Chronicle of Higher Education, etc.

**Mentors: please read the information below**. Please give your student the time he/she needs to prepare for, and pass, the oral comprehensive exam. Plan on allowing your student 10-20 hours/week for studying during the 2-3 months preceding the exam. Assist him/her in assembling groups for practice sessions. Provide him/her with your knowledge and perspective on how best to prepare, and share resources (suggested readings, notes from courses that may help clarify key concepts, etc.). Consider meeting weekly over the course of a semester (or at least over several months) to assist the student in gaining the needed skills to discuss science in a scholarly fashion – from factual material through synthesis. Advise the student on how to conduct such conversations in a professional manner, and help him/her navigate the lines between confidence and arrogance, timidity and politeness. Finally, help your student by ensuring that he/she takes the exam in a timely fashion.

**Students: please read the information below**. Recognize the importance of the exam, but don’t put it off. Give yourself time to prepare – plan on 10-20 hours of studying per week during the 2-3 months before the exam. Over-communicate with your committee members, and practice, practice, practice. Set yourself up to succeed; own your success as part of the intellectual development that underlies your progress toward the Ph.D. Ask for help – you are not alone – but take the lead in being ready. Do your best as you prepare, and let us help you get there. We all want to see you succeed in passing the exam on your first try and we would like to work toward that goal together.

Please direct any questions or concerns to the Director of Graduate Studies.

**Overview of the preparation process**

*Note: the timeline below generally follows the timeline in the Graduate Handbook (see handbook online) and assumes that doctoral students have not previously earned a MS in their field of study. If a MS has been earned, or if the student has other special circumstances, the dates may be moved forward (e.g., by 1-2 semesters) at the discretion of the student, mentor, and advising committee.*

**1. During your third/fourth semesters**

• Meet with your committee to discuss your dissertation topic and progress.

• Work with your advisor before this meeting to outline the broad shape of your dissertation.

• Begin to think seriously about your written comprehensive exam. Establish whether your committee thinks you are ready to begin your written exam in your fourth/fifth semesters. If not, plan on a meeting at the start of your fifth semester, and be ready to move forward toward your written exam thereafter.

• Consider giving a seminar to help you synthesize your ideas, data to date, and ‘ownership’ of your work.

• Be sure to file your doctoral plan of study at the end of your third semester!

**2. During your fourth/fifth semesters**

• Complete your written comprehensive exam. See the SPLS graduate handbook for more details.

• Upon passing, work with your committee to schedule your oral exam. A reasonable expectation would be ca. 1-3 months after the date of your passing the written exam. Give yourself time to study, but don’t put off the oral exam to an unreasonable extent.

**3. Once you have scheduled your oral exam (fifth/sixth semesters)**

• Take responsibility – and set yourself up with the best chance to pass – by doing the following:

*A. Meet individually with each committee member starting …now.* Use email as needed but meet in person whenever possible; it will be MUCH more effective. Consider sending your committee member a list of questions, plus those you think of yourself, about a week before you meet in person; this gives him/her time to organize their thoughts. Then, discuss each in turn. Consider sending a brief, synthesized version of your notes from your personal meeting, for his/her records. Questions to ask might include:

-What are your expectations for the exam, and what will you be looking for in my ‘performance’?

-Can you give me your perspective on what distinguishes a ‘pass’ from a ‘fail’?

-How did you prepare for your exam when you were a student? What strategies do you recommend?

-What are the most critical aspects of general knowledge that you expect every student to know?

-What are the most critical aspects of knowledge in your field that you expect every student to know?

-What are the most critical things in my field that you might expect me to know?

-Do you have concerns about my preparation or my written exam that I should address ahead of time?

-Do you have any advanced students or postdocs who might be able to practice with me?

-Can you please recommend a reading list for me, and any strategies for ‘owning’ the material?

-What courses do you teach, and can you help me obtain some core material from them if relevant?

-When can we meet again, in perhaps 3-4 weeks, to address any conceptual challenges I am coming across in my studying?

*B. Use this information to study*. Remember that your exam will have two portions: one focusing on your proposal, and one focusing on general knowledge. Practice your presentation multiple times in front of a diverse audience and be sure you are ready to start your exam on the right foot. Questions will come up that link your proposal to areas of general knowledge; ask your audience in practice sessions to raise questions based on your presentation.

For the general portion: **plan on studying 10-20 hours/week.** Make time for this! Remember that you will likely have teaching, research, and/or coursework responsibilities concurrently; plan ahead. Go back to faculty to ask for help in understanding key concepts that you feel you can’t explain clearly to a peer or colleague. Recognize links between your work and the fields of expertise of (and courses taught by) your committee – and remember that committee members may ask you things related to their own expertise.

You’ve gotten this far because you know how to study; your task now is to do so, and to do your best to synthesize, organize, and link information – something you can only do if you give yourself time. Work with your advisor to ensure that you are taking care of any commitments…and ensure that you and he/she recognize and act upon your need to prepare.

*C. Reflect on your field, and expand your studying accordingly.* Your committee members may give you great direction regarding how to focus much of your studying, but exams often take on a life of their own -and at times committee members’ suggested areas of focus never surface during the exam itself. Moreover, the process of earning a doctorate is a process of self-driven inquiry – such that taking a thoughtful look at your field of study is an important step.

As a complement to insights from your committee members, take charge of your studying by your own direction: think about the core areas of knowledge that inform your field, and about current activity in your discipline. What is the critical information in, say, biology – from meiosis and mitosis to the structure, content, and processing of DNA, the basics of biochemistry, the fundamentals of evolution, the basics of statistics: what do you need to know so that you can move on as a doctoral candidate to synthesize and innovate ***new*** knowledge? Who are the major players in your area of study and what are they famous for? What did they get right, and what did they get wrong – or how have perspectives changed since they published, and why? What are the central hypotheses that drive your area of research? What are the big ideas? What are the big questions that remain to be answered in your field?

*D. Practice.* The oral exam is just that – an oral exam. Knowledge in our heads is great, but we have to be able to communicate it effectively to succeed. Therefore, practice. Multiple times. For 2-3 hours at a time. Do not practice only with those with whom you feel comfortable: ask senior students, especially those who share committee members or whose advisors are on your committee, for a practice session. Practice in a conference room, with a board. Tell your ‘faux committee’ to challenge you. Ask for their honest critique. Plan on your first practice about three weeks into your studying, and a second one perhaps three weeks later. Try meeting with faculty between practices (i.e., repeat step B above) to clarify things that you have a hard time understanding or conveying.

Sometimes you may wish to fit in a third practice, or may benefit from rotating in new members of the faux committee. Do what you need to do – but make sure that the practice sessions take you outside of your comfort zone, learn how to work with that, and repeat. The point is to be ready to stand in front of a group of scholars and to know what you know…outline what you don’t know…address it…know more…and be confident and positive when your true exam comes around.

**4. On the days preceding your exam**

• Take care of yourself. Sleep, eat, exercise, talk with friends.

• Synthesize the information in your head, talk science with peers, and check out the most recent editions of leading journals for new, exciting work.

• Consider having friends prepare food/drinks for the exam (entirely optional but often helpful). No need for a blood-sugar low to impede you!

• Practice your proposal presentation in front of a group at least twice, and take their suggestions into account. Consider including your advisor on these practice sessions. Make sure you really have that presentation nailed down: success there will make you feel more comfortable with the rest of the exam.

• Sort out any AV issues and be sure that if you have an off-site member, you have an excellent working setup for involving him/her in the exam.

• Print out extra hard copies of your proposal to share with the committee during the exam. Make sure you have one, and read it again before the exam.

• Make sure the room has chalk (for the chalkboard) or working pens (dry-erase board).

• Feel free to talk with your exam chair about the order of questions and structure of the exam.

• More generally, check in with your exam chair to be sure everything’s in order. Double-check about any paperwork or official requirements.

• Remind your committee of the date, time, and place of your exam about a week ahead of time, and again the day before. It’s always nice to thank them for helping you prepare.

**5. At your exam**

• Dress and act professionally: this is a professional exercise.

• Aim for confidence, not arrogance. Aim for polite, not timid.

• Eat and drink appropriately before the exam.

• Take along a pad of paper to take notes on long/complicated questions, or to outline your thoughts as you prepare to answer questions – or consider using the board for this purpose. Sometimes jotting down key words can be a fantastic aid.

• Set up for the proposal-defense portion by having your computer and the projector ready to go at least 10 minutes before the start time.

• Should you have an off-site member, be sure all AV connections work and are connected smoothly well before the start of the exam. Be ready to start ten minutes early.

• Welcome your committee members and thank them for coming. This can help you feel more comfortable with your own voice, and it sets a positive and professional tone.

• When you run into a question you cannot answer: remember, it’s okay to say ‘I don’t know.’ The exam is designed to help you understand and define the borders of your knowledge. If you do know, or think you know, offer what you can – and if you don’t know, don’t make it up. If you don’t know, a great answer is, ‘I don’t know, but I know that X wrote a paper about a similar topic in 2011’ or ‘I don’t know, but here’s how I might think about trying to address that…’. If you’re really unclear on a question, ask for clarification. Use the board. Try to break down tough questions into component parts and explain what you know about each part, even if you can’t answer the question per se. Feel free to try to summarize and repeat the question back, politely, to the committee member so that you can be sure you understand. Remember that your committee is there to work with you, not against you, in this scholarly exchange.

• Keep calm if things seem to be going downhill. We all hit things we don’t know; how you handle that says a lot about your maturity as a scholar. Gather your thoughts. Ask for a break if you need one, but be reasonable by not asking for too many. Take a deep breath, drink some water, eat a bit, and continue.

• Do your best to relax and converse respectfully but naturally. The exam is an incredible opportunity to spend a few hours discussing scholarly information with senior colleagues – and in the best case, everyone learns something in the process.

**6. Should you not pass**

Do your best to pass. However, should you not: The School of Plant Sciences may offer you the opportunity to repeat the exam. If so, you will need to schedule a re-take four months after the original date. Prepare according to the information above and plan to talk with the Director of Graduate Studies, your exam chair, and your advisor for help. The second attempt must be passed for you to remain in the PhD program. Should you not pass on the second attempt, the Director of Graduate Studies will work with you and your advisor to assist you in making appropriate plans.

**7. When you pass**

Congratulations! You are now a doctoral candidate. This is a lifetime achievement in itself! Take a little down time to avoid burnout, and then return fully to your studies/research with the energy of this success to propel you forward.

**Appendix 1**

***UA Graduate College information***

Before admission to candidacy for the doctoral degree, the student must pass a written and an oral Doctoral Comprehensive Examination. This examination is intended to test the student's comprehensive knowledge of the major and minor subjects of study, both in breadth across the general field of study and in depth within the area of specialization. The examination, therefore, should not take place until the student has completed all, or almost all, of their coursework.

The Comprehensive Examination is considered a single examination, although it consists of written and oral parts. While the Graduate College sets general policies and guidelines for exams, it is expected that each program will have different ways of assessing a student's knowledge of the field and their preparation to begin the dissertation.

Each program determines the format and administration of the written portion. The minor department controls the minor portion of the written examination and may waive it at their discretion.  A student will pass the written portion before sitting for the oral portion. Programs will have written policies regarding whether or not students may retake failed written exam as well as specific policies regarding second attempts of the oral. The time between the written and oral portion is determined by individual programs, but the oral portion should come early enough to allow the student to advance to candidacy in a timely fashion.

Upon successful completion of the written portion of the examination, the [Oral Comprehensive Examination](https://grad.arizona.edu/gcforms/sites/gcforms/files/page/oralcomprehensiveinstructions.pdf" \t "_blank) is conducted before the examining committee of the faculty. The oral portion of the examination must cover both the major and the minor.  All members must be present for the entire examination. Should special circumstances require a member to attend remotely, prior permission from the Graduate College is necessary. This is the occasion when faculty committee members have both the opportunity and obligation to require the student to display a broad knowledge of the chosen field of study and sufficient depth of understanding in areas of specialization. Discussion of proposed dissertation research may be included. The examining committee must attest that the student has demonstrated the professional level of knowledge expected of a junior academic colleague. The Graduate College allows no more than one re-take of the oral exam.

The examining committee must consist of a minimum of four members. The Major Advisor and two additional members must be current tenured, or tenure track faculty members. The fourth member may be tenured or tenure-track, or an approved special member. Special members must be pre-approved by the Dean of the Graduate College. Any members beyond the fourth can also be current tenured or tenure-track faculty members, or approved special members.

For more information, including rules for the oral exam, please see:

<http://grad.arizona.edu/academics/program-requirements/doctor-of-philosophy/comprehensive-examination>

**Appendix 2.**

***Additional resources.***

Don’t let these scare you. Instead, note that (1) yes, exams are taken seriously, but (2) they are tractable (and may even be enjoyable…and useful to you) if you prepare, and work with your committee to set yourself up for success. Take ownership of your preparation and put yourself in the position to pass.

[*http://www.gradhacker.org/2013/04/26/surviving-the-oral-comprehensive-exam/*](http://www.gradhacker.org/2013/04/26/surviving-the-oral-comprehensive-exam/)

[*http://chronicle.com/article/An-Orals-Survival-Kit/47547/*](http://chronicle.com/article/An-Orals-Survival-Kit/47547/)

[*http://dynamicecology.wordpress.com/2013/03/28/surviving-your-comprehensive-exams/*](http://dynamicecology.wordpress.com/2013/03/28/surviving-your-comprehensive-exams/)