

**Medical Biophysics PhD Proposal Defense
(for MSc students reclassifying to PhD and for new PhD students with MSc)
(Revised Summer Term 2016)**

Rationale:

The decision to pursue a PhD degree is a major step. The graduate student is making a four to five year commitment to a research project and to a supervisor. The supervisor is making a major commitment in stipend and research support as well as his or her own time and energy.

To help ensure that a graduate student has the skills, abilities, determination, and insights necessary to successfully complete our PhD program, we require that all potential PhD candidates prepare and defend a PhD thesis proposal. The student's supervisor, advisory committee, and a member of the Graduate Executive act as the examining panel for the proposal defense.

Exception:

Students who have a MSc degree from our program and are continuing in the same field of research may not be required to defend a PhD proposal. The Graduate Executive will make this decision based on the quality of their MSc thesis and MSc thesis defense.

Timing of the Proposal Defense - For students in our MSc program who wish to reclassify to PhD status, they must successfully defend their proposal before the end of the 5th term of graduate studies (the time limitation is a rule of the School of Graduate and Postdoctoral Studies). *For students with MSc degrees who enroll in our PhD program, they must successfully defend their thesis proposal before the end of their third term as a PhD student.* It is better for the student, supervisor and our graduate program to make a serious evaluation early in the program rather than discover at some point in the future that the student is unable to carry out PhD level research.

What to Prepare for the Proposal Defense (steps 1 to 5):

1. Committee

The proposal defense cannot proceed without the supervisor, advisory committee and one member of the Graduate Executive. If the candidate does not have an advisory committee, they will need to consult with their supervisor in selecting a committee. If the candidate (or supervisor) feels that additional expertise is required for the proposal defense, then this likely means someone with that expertise should be added to your advisory committee. Arrange a time for the proposal defense that all members of the advisory committee and the member of the Graduate Executive can attend. It is the student's responsibility to arrange the time and location of the meeting.

2. Proposal

The proposal is a three to four page document, which outlines the work proposed to be completed for the PhD thesis. The proposal should include an introduction and a description of three to four major projects which will form the body of the thesis.

The introduction should include:

- the motivation for the proposed research
- the hypothesis
- the approach
- the rationale
- a brief literature review focused on key literature for the project. The literature review does not need to be exhaustive but should demonstrate an appropriate level of knowledge of the research area.

For students reclassifying from the MSc program, they should demonstrate how their MSc research is forming the basis of their proposed PhD research. For students enrolled in the PhD program, they should include preliminary work and results of pilot projects that are helping to guide the design of the PhD proposal.

The description of the three to four projects should each include the rationale, hypothesis, and objectives of these projects, how the data will be interpreted, and what one hopes to learn. They should be viewed in terms of three to four publications, which will make up the body of the thesis. The proposal should end with a statement of what you view to be the significance of this research.

Note: The committee will recognize that the proposed research will evolve as one becomes more familiar with the project and that the final version of the thesis may be quite different from what was initially proposed.

The committee will want to see at this stage:

- how the candidate is approaching the design of research projects
- whether the questions being asked are significant
- whether the approach being taken will be able to answer the proposed questions
- how realistic the candidates expectations are in terms of what can be accomplished and what the possible pitfalls are that will need to be overcome or that may lead to a new direction for the research.

Most of the questions asked by the committee will focus on these issues. The committee will also focus on potential "stumbling blocks" in the research proposal – e.g. the student proposes to use a new device that will be installed in the laboratory in the coming year.

- What happens if the device is not installed?
- Does the project have a "backup" plan in place?
- Is there a similar device elsewhere you could use?

3. CV

Prepare a complete and up-to-date CV. In addition to the material normally included in your CV, you should also provide a complete list of courses taken or audited at Western and grades you received. If your CV does not already contain them, you should also include a list of conferences attended, abstracts submitted, and manuscripts in preparation or under review.

4. Distribute Agenda, Proposal and CV

Distribute an agenda, the PhD proposal and your CV to your committee members and the representative from the Graduate Executive a minimum of three days in advance of the

meeting. Confirm that each member has received the information and is able to attend the proposal defense.

5. Presentation

Prepare a 15 to 20 minute presentation of your proposal (a PowerPoint presentation is useful but not required). Unlike a graduate seminar where the questions are reserved until the end, the committee members will ask the candidate questions throughout the presentation. The committee will challenge the candidate to defend his/her proposal. The goal of the candidate is to convince the committee that s/he is capable of successfully completing a PhD. The candidate will need to demonstrate a good grasp of the relevant literature and an understanding of the strengths and limitations of the methodology that will be applied to the project. The proposal defense should take 1.5 to 2 hours.

Evaluation:

The supervisor, advisory committee, and representative of the Graduate Executive will evaluate:

- the candidate's academic performance
- evidence of progress to date
- the written proposal
- the oral presentation and defense of the proposal.

All aspects of the student's graduate career (not simply the defense of the proposal) must be considered satisfactory for a successful evaluation. The committee must be satisfied that the student will be able to successfully complete his/her PhD degree.

Possible Outcomes (Successful and Unsuccessful):

Successful

A successful evaluation will mean a MSc candidate is eligible to reclassify to the PhD program or that a PhD student will continue in the PhD program. A successful evaluation can be taken as a strong endorsement by the graduate program of the confidence they have in the candidate's abilities to successfully complete a PhD degree.

Unsuccessful

If the committee's evaluation is that the student's overall performance was inadequate, the committee may recommend that:

- the student modifies his/her proposal, prepares for a new defense, and tries again at a later date. The second defense should occur no sooner than one month and no later than four months following the first defense.

The committee will provide the student with written comments and recommendations for what aspects of the proposal or research that requires improvement. This recommended course of action will be made only if the committee views the student's academic performance and progress to date as being satisfactory, and sees promise in the proposed research.

Note: for MSc students the second defense must occur prior to the end of the 5th term. There are no exceptions. If the student is unsuccessful in their 2nd attempt they will not be given a 3rd chance.

- For MSc students who did not successfully reclassify, they complete their MSc thesis and graduate. These students will not normally be eligible to apply for the PhD program after graduation.

If the student's performance is inadequate for a MSc student, the committee may recommend that they withdraw from the graduate program immediately.

- For PhD students, who did not successfully defend their PhD proposals, they will not be allowed to continue in the PhD program.
- For a student with a MSc degree in an unrelated discipline to Medical Biophysics, it may be recommended that the student reclassify as a MSc candidate and complete a MSc degree.
- For students with a MSc degree in Medical Biophysics or closely related discipline, the student will be required to withdraw from the graduate program immediately.

The committee's recommendation for a student to either complete a MSc degree or withdraw from the graduate program will be considered by the Chair, Graduate Chair and Graduate Executive. If the Graduate Executive agrees with the committee's evaluation, the student will be asked to either complete a MSc or withdraw from the graduate program, depending on the original recommendation. If the Graduate Executive judges there to be some merit in the student's case, they can recommend an additional proposal defense. If this defense is evaluated as inadequate, the student will be asked to withdraw from the graduate program.

All decisions of the Proposal Defense Committee and the Graduate Executive will be in writing with signed copies for the student and the student's file. The student will also sign the decision indicating that they have read and understood the contents of the document.

The decisions of the Proposal Defense Committee and the Graduate Executive can be appealed by the student. At the first appeal level, the student will present their appeal to the Graduate Executive with the supervisor and advisory committee present. If this appeal does not resolve the issue, the student can appeal to the School of Graduate and Postdoctoral Studies.