

MS THESIS PROPOSAL GUIDELINES

(Updated September 2024)

It is recommended that you have a thesis committee and research project selected by the end of your first academic year (Spring). Once these have been selected, you must present a formal thesis proposal to your committee. The purpose is to A) ensure you have done thorough background research on the topic, B) have developed clear objectives/hypotheses and appropriate methods and analyses to address them, and C) have received input from all your committee members. It is best to get this input early on, as committee members can often help with any issues you may be struggling with and offer good ideas/approaches that you may not have considered. Remember to try to schedule a committee meeting well in advance, as it can often be difficult to get everyone together at the same time. It is suggested that you complete your thesis proposal in your first spring or summer, but you can certainly do it earlier if you are so inclined.

Below is an overview of what you should have prepared for the proposal meeting:

1. You should have a written proposal that provides background on the research topic, the objectives of your research, the methods, analyses to be used, how you will interpret the results (you may include actual results if you already have some, although this is certainly not expected), and a literature cited section. In addition, you should have a brief abstract/project summary at the beginning that briefly summarizes the entire proposal. It is usually best to write the abstract last. Much of the proposal content can be used in your final thesis. For example, the Introduction might not change very much if you do a thorough job now!

There is no specified length for the proposal, but we offer guidelines for each section. Keep your proposal clear and concise.

a.) Project summary/abstract

- Approximately 300 – 350 words summarizing points b – f
- Do not exceed one page.

b.) Project background

- 2–3 double-spaced pages (standard font size and margins)
- This section should start by providing broad, general context for the work and gradually narrowing into the study questions and objectives.
- Include a clear argument for why the work is important. How does it advance basic science and/or applied science and conservation?

c.) Research Objective(s), Questions, & Hypotheses

- A one to two sentence statement of the primary research objective or objectives that states the primary goal or goals of the research.
- Specific research questions and their associated hypotheses should be clearly stated and numbered (Q1, H1a, H1b; Q2, H2, etc).
- Hypotheses should be written as “biological hypotheses”. For example, *“If white bark pine is water limited, then we expect contractions in the drier parts of its geographical range”*. This is in contrast to a statical hypothesis, which is still valuable, but lacks important biological context. For example: *“We expect to find no difference in tree abundance across the range”*.

- For each hypothesis, students should consider at least one alternative hypothesis (including its explanation). For example, the primary hypothesis might be: *“If white bark pines are water limited, then we expect contractions in the drier parts of their range”*. And the alternative hypothesis might be: *“Alternatively, if white bark pines are limited by seed dispersal by birds, then we expect to find fewer trees in areas with lower bird density.”*

d.) Materials & Methods

- This section should be detailed enough to allow the committee to evaluate whether your plan is realistic and achievable.
- These sections vary greatly in length but are often between 2–6 double spaced pages.

e.) Analyses

- Make sure that you include an analysis to address each of your questions. It is often helpful to directly link each analysis to each question. For example, *“To address whether white bark pine is water limited, I will...”*

f.) Literature cited

- You can follow any style of citations as long as the following information is included for each citation: authors, year, title, journal name, volume, and page range.
- You might want to consider using free citation software, like Zotero, that allows you to enter and format citations in Word, as opposed to entering each one manually.

2. You should give all your committee members the written proposal at least **two weeks in advance** to give them time to read it before the meeting. This will make the meeting much more efficient and effective.

3. For the meeting, you should prepare a ~ 15 min oral presentation that explains your proposal. Most students use PowerPoint. You can schedule a room for your meeting either:

1) at NU with the PBC’s Program Assistant at plantbiology@northwestern.edu or 2) at CBG with your advisor.

4. During and after your presentation, your committee members will ask you questions and offer advice on your project. You should allow at least 2 hours for the meeting. Feel free to bring food/snacks for everyone, but this is not required.

5. Upon meeting completion, your committee will tell you if there is anything else they expect you to do that you did not include in your proposal or if it seems good as presented.

6. Have the committee members sign the “Thesis proposal committee meeting form” found at <https://plantbiology.northwestern.edu/graduate/resources/pbc-thesis-proposal-form.pdf>

7. Upload your proposal form to your GSTS portal. Use these guidelines if you need help with the upload process.

8. Email the completed form to the PBC’s Program Assistant at plantbiology@northwestern.edu and inform them about your upload in GSTS.

Enjoy the rest of the day. You have completed the proposal meeting!