

Guidelines for Writing a Prospectus for a Senior Capstone/Honors Thesis in the NSCI/NSCS Programs

What is a prospectus?

A prospectus is a short description of your proposed capstone/thesis. Your prospectus should clearly describe your thesis topic, the form your thesis will take, and how you will reach your thesis goals.

For a laboratory-research-based thesis, focus on your governing questions or hypotheses, your research methods, and your theoretical or methodological framework. For a literature-review-based thesis, your prospectus should focus on the big picture question and what specific question you seek to answer or frame.

Important: To undertake this research, you may be required to get permission from the Institutional Review Board (IRB) in order to ensure the protection of your human subjects if your research involves experimentation, observation, or interviews with individuals or groups. Your Faculty Advisor should be prepared to guide you through the process of obtaining Human Subjects/IRB approval, which may include specific training. Sometimes it can take several months to get this permission, so plan accordingly.

What to include in your prospectus?

1. Introduction and Specific Aims.

What is your thesis topic, and why is this topic of interest to you and to other scholars or researchers in the field? Why is the topic relevant and important? What specific question will your research or project seek to answer?

You can provide detailed and specific information, as space permits, but you should always provide enough background information so that a scientist working outside your specific area of interest, or even a well-read lay reader, can understand the big picture.

You should reference some of the literature to show that you have begun to think seriously about why that question is important to answer and what key findings drive your work. If you will be working in a lab or on a literature review that is driven by work in a lab, you should describe current efforts in the lab you have chosen that specifically support your project. End this section with a list of the specific aims for your work.

2. Methods.

If you are writing a laboratory-research-based paper or doing empirical or observational research, which research methods and resources will you use? Provide enough detail so that a reader unfamiliar with the kind of work can still understand.

If are doing a project or creative work, please describe in detail what your project work will involve, what the outcome or result will be, and how you will incorporate research-based analysis into your final product or artist statement. The goal of this section is to provide enough detail that you, and we, know how you plan to do your study.

Here's an example: "I will be using intracellular electrophysiology of glial cells in the ventral nerve cord of 3rd instar *Drosophila* to show how these cells respond to stimulation of interneurons. Interneurons will be engineered to express a channel-rhodopsin so that the cells can be stimulated by light. I will record from the glial cells, pulse the preparation with light, and examine in the glial cells the resulting response to neuronal activity. After recording, I will pulse the glial cells with hyperpolarizing current to fill them with a fluorescent dye, and after processing, will view them on the confocal microscope. I will then use Image J software to measure branch length and number."

If there are concepts that might not be familiar to your reader but that are important to understand in order to understand your project, you should address them briefly. For example, in the methods outlined above, you might describe what a channel-rhodopsin is. Figures are welcome and may be drawn from published work as long as the legend and bibliography include the appropriate acknowledgement and reference.

If you are writing a literature review, you should include a list of references that you have consulted or plan to consult to begin your review. You and your Faculty Advisor can construct this list together. An annotated bibliography of key references would be an excellent idea.

3. Timeline.

Create a timeline for your work, agreed upon by you and your advisor. Also list any expected work products, such as presentations to your lab group, a poster, an abstract, and the like. Finally, note the expected frequency of meetings with your advisor.

4. Expectation Statement.

Last, specify briefly what you hope to learn or gain from the work you do to create a Senior Capstone or Honors Thesis.