

## BIOL 399/499 Proposal Guidelines

Outlined in this handout are some general guidelines for your 399/499 project proposal. Please be sure to read this handout carefully before submitting your final proposal.

The purpose of the proposal is to provide a brief outline of your research goals for the semester. Target your discussion to a scientifically literate audience that may not be entirely familiar with your particular area of research. **In 1 to 2 pages**, aim to outline the specific aims, fundamental components and overall significance of the work that you will be doing. Focusing on the hypothesis and background in your proposal may help with the more extensive hypothesis and background that you will put forth in your final paper.

### **Lab Setting:**

Describe briefly the lab in which you will be working. What type of research does the lab conduct? With whom will you be working during your project? Who is the PI for your lab?

### **Background:**

This section should provide some background information about your research topic. Help the reader to understand the origins of your experimental question. **Include the key citations for work upon which your research is building.** Provide only that information which is essential to helping the reader better understand the significance of the topic that you are exploring.

Don't get too bogged down by citations, but aim to give a general frame of reference for your work. If you were required to read any particular articles prior to starting in the lab, it could be helpful to mention a selection of those articles in this section of your proposal.

### **Overall Goal, Hypothesis, and Specific Aims:**

What is the overall goal of your research and what is the hypothesis that you plan to test? Briefly state the specific aims that you hope to accomplish in the semester. How does your experimental plan contribute to the greater work of your lab? Will the data that you collect serve as a foundation for BIOL 499?

### **Methods:**

List some of the techniques that you will use (or learn) in your lab. It would be useful to key these techniques to the specific aims that you stated above. This list need not be exhaustive, but should provide a good idea of some of the procedures that you will be responsible for carrying out, i.e. staining, blotting, PCR, plating, recombinant DNA construct creation, etc. Briefly explain how some of these techniques will enable you to test your hypothesis.

The methods that you list in this section should be those that **you specifically** will be using throughout the research project. It is not necessary to list all of the methods that are used by the lab in which you are working.

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**Copy of your proposal should be presented to your research sponsor**

**A copy of your proposal should be given to your research sponsor and Biology department co-sponsor (if applicable) prior to obtaining their signatures on the BIOL 399/499 application form.**

**PLEASE NOTE: Your project sponsor should sign the proposal in addition to the BIOL 399/499 application form.**

**General Notes for 399 Students:**

As BIOL 399 may be your first independent research experience, it is understood that you may not yet have a full grasp of the methodology that you will be using for your project. Nevertheless, try as best you can to write the various sections outlined above, with particular emphasis on the goals, hypothesis, and specific aims. Discuss the proposal with your research sponsor and consult the literature relating to your topic so that you are able to present a logical research plan. You should also establish with your research sponsor guidelines of what will be expected of you in lab during the semester.