

Oral and Written Group Research Proposal

You and your virtual partner will develop a research proposal that addresses a question(s) in coral reef biology. During the course we will address a number of issues that impact coral reefs (for example, global warming, increased CO₂ emissions and overfishing). You will select a specific topic and a specific research question(s) and develop a research proposal that will be presented to the class in an **oral presentation (11/16)** and submitted to me in **written form** (See instructions for written research proposal).

Research Proposals

A research proposal is similar to an outline of an entire research process that gives an audience a summary of the information you will address in a research project. The goal of a research proposal is to present and justify a research idea you have and to present the practical ways in which you think this research should be conducted. Research proposals contain literature reviews and must provide persuasive evidence that there is a need for the research study being proposed. In addition to providing rationale for the proposed research, a proposal describes methodology for conducting the research and a statement on anticipated outcomes and/or benefits derived from the study.

All research proposals must address the following questions:

1. What exactly is your research question? Present your research issue or problem in the form of a question or set of questions that you will attempt to answer.
2. What do you plan to accomplish? Be clear and succinct in defining the research problem and what it is you are proposing to research.
3. Why do you want to do it? In addition to detailing your research design, you also must conduct a thorough review of the literature and provide convincing evidence that it is a topic worthy of study.
4. How are you going to do it? Be sure that what you propose is feasible.

You and your virtual partner will make an oral presentation in class. The oral presentation will address your research question, a brief project overview containing sufficient background information for everyone to understand your proposal, a statement of the research problem and your goals, and why the research is important. Your presentation, scheduled for **Monday, 11/16**, is worth **50 points** and you have **15 minutes**.

In the written proposal you and your virtual partner will describe the specific research question you have identified, how you propose to study the question and what you hope to learn. Your written research proposal, is due **Tuesday, 11/24 at noon and** is worth **50 points** (See instructions for written research proposal).

As you think about your research proposal project, please consider the following points:

- Why did you choose this topic?
- Who is going to gain from this research?
- Why are you proposing the research to be done in this particular way?
- What are the general steps of the project? Justify them using the literature to argue for the appropriateness of the particular methods you have chosen.

Methodology This is where you set out the details of the methodologies and techniques you will use. Consider the following:

- How is the study to be done?
- What are your sources of data?
- What data will be collected?
- What kinds of methods, procedures and instruments will be used for data collection?
- Who is included (excluded) from your research population or sample and why?
- How do you intend to ensure reliability (repeatability)?
- In what contexts will your results be interpreted and understood?
- How will you analyze your data?

An example of a brief research proposal that you can use as a model can be found on Moodle or <https://people.cornellcollege.edu/ctepper/BIO141GrantProposal.pdf>

Oral Presentations

Everyone feels a little nervous about giving a talk. Relax; but remember the three **R**'s for public speaking: **R**eflect on what you are presenting, **R**ehearse to "hear" yourself, and **R**ewrite your talk to improve clarity. These are formal presentations (PowerPoint); so organize your talk and practice the entire oral report. Grades will be based on organization, clarity, understanding of your proposed research and your presentation. **You may not use any notes during your presentations.**

General Advice

Introduction: Introduce your research proposal/project by presenting enough background information so that the audience can understand why you selected this particular research problem and the rationale for your proposed research. One of the biggest problems with research talks is that the speakers do not provide sufficient background information for their audience to understand their research project proposals. Assume the audience understands basic concepts, but is unfamiliar with your project. Do not use visual aids filled with typed information. It is better to present information in a brief outline form. Be sure to describe and explain the question(s) that you asked when you initiated the project.

Methods: Present only the methods that the audience will need in order to understand your research proposals. Do not present the methods in great detail. Flow diagrams work well. **DO NOT** present all of your methods at the same time. It is much better to present the question you are asking and discuss the specific protocol you plan to use to answer the question before moving on to other questions that utilize different protocols.

Results and Discussion: Present your anticipated results. Select the anticipated results that are the most meaningful to your research question(s). Point out the important points and draw the audience's attention to these points.

Conclusions: Specifically describe the outcome and significance of your work. What is the relevance of the research and why is it important? How does this research fit into other work being done on the topic and what does it contribute to the general area of coral biology?

General Presentation Tips

1. Practice, practice, practice. The best talks are well rehearsed, so that they appear to come naturally, fit within the allotted time, and make all of the desired points. **You may not use notes during the presentation.** Do not read your talk from cards or sheets of paper. Talk from the screen and use the information on your visual aids as a guide for what you are going to say.
2. Practice your presentation in front of other people. They will notice the things that seem obvious to you, but are unclear to people unfamiliar with your research project.
3. Select only the main points and drive them home.
4. In your introduction tell the audience where your presentation is headed and how you will get there (preview and summarize your talk). Do not be afraid to repeat important points, it will help the audience understand your presentation.
5. All presentations must be made using PowerPoint.
6. Keep the amount of information on a text slide to a minimum. Limit straight text to fewer than 5 lines.
7. Explain any graphs, figures, or tables that you present. For graphs, explain what each axis represents (even if they are adequately labeled). For both tables, figures, and graphs explain what the data tell us. Point directly to important data.
8. Bold is better. Use heavy lines and large, bold fonts. Choose a font, such as **Arial Bold** because it is easier to read. Make all fonts, symbols and lines on visual aids bold enough and large enough to be seen from the back of the room. Images suitable for a printed-paper are usually not suitable for projecting.
9. Look at your audience, not at the projection screen or the computer monitor. Stand and speak from the screen not from the computer. Be careful not to block anyone's view.
10. Speak loud as if you are speaking to someone in the back of the room, but make eye contact with everyone.
11. Modulate your voice.
12. End with a bang. Make your main points clearly and unequivocally. Then stop.
13. Practice, practice, practice.

Evaluation Criteria

I will use the following criteria to evaluate your presentations:

Communication

Was the presentation well planned, organized?

Was the presentation practiced?

Were the speakers knowledgeable about topic?

Did the presentation contain good visuals and were other investigator's results clearly presented?

Did the speakers keep the audience's interest?

Did the presentation fit the time limit?

Did the speakers provide good answers to question?

Content

Was the research question/proposal clearly defined and evident to the class?

Did the speakers include background information, methods, predicted results, and discussion?

Was there adequate background information in order to understand the research?

Was the methodology appropriate and relevant for the proposed research question?

Was the literature review relevant to the research proposal?

Was the coverage of topics appropriate to class level?