BIOL 395- Mini-Grant Proposal

This proposal will be submitted as an expected outcome of BIOL 395 projects that covered 1 or 2 credit hours (3 credit hours projects require a paper submission or poster presentation).

The goal of the proposal is to provide you with the opportunity to summarize your project, to put it in the context of the big picture- the research in the field and the current knowledge gaps, to plan your future experiments, and to develop your scientific writing skills. All sections are required, even if you do not plan to continue doing research in this lab or on this project.

The proposal should be a 1-3 pages long document, and should follow the following structure:

1. Introduction
2. Preliminary results
3. Hypothesis
4. Specific aim/s
5. Future plans- how you plan to accomplish your specific aim/s
6. References

Introduction

- Summarize in a few paragraphs the background of what is known about the topic. Describe previous important findings and cite references.
- If your lab already started studying this topic (before you started your project), describe what was done already in your lab.
- Explain why this research topic is important, how it contributes to our knowledge and/or applies to our society. In other words- "why should we care?".
- Knowledge gap/s- explain which important question had not been resolved as of yet. Were there specific bottlenecks and limitations that prevented scientists from resolving that question? (Note- this part will be an important buildup to your project).

Preliminary Results

- Describe in a few paragraphs what you actually did during the semester and what results you obtained. Remember to start this paragraph by linking it to the end of the last section- the knowledge gap that needed to be addressed.
- Show one or a few figures/tables that you obtained, which depict your results.
- When writing your results, describe the methods that you used, but do not go to a micro-resolution (no need to provide details on how many µL of enzyme you used in your PCR solution). The only exception is when your project is focused on developing/optimizing a specific method.

Hypothesis

- Based on previous results and your own preliminary results, formulate a hypothesis that can be tested in scientific ways (1-2 sentences).

Specific Aim

- Write a clear aim that you plan to address as part of this proposal. This section should be concise and is a critical part of the whole proposal. Do not use broad term (e.g. "to study protein X"). Use precise terms of measurable outcomes (e.g. "to identify the sub-cellular localization of protein X in enterocytes").

Future plans

- Here you will address the "How" question. How you will accomplish your specific aim. It is important that this plan would be credible, realistic and in a relevant timeframe.
- It is important not to write vague, broad plans, but rather specific plans and particular methods (e.g. "I will study the localization of protein X, by cloning gene X into a plasmid and downstream to promotor Y, using Z technique).
- Describe the expected outcomes and how would your results teach you about your hypothesis.

References

- List the references that you cited in your proposal (no specific format is required).