

Introduction to Bioinformatics

How to Write a Project Proposal

I. Audience

The proposal should be directed to an audience consisting of your peers. Explain what is necessary so that every one of you will understand the proposal. No need to explain what is common knowledge for all.

II. Format

The format below is one that will get the job done. If you believe your proposal calls for a format that accomplishes the same ends but in a different *and better* way, fine. Then use your own format. It's always OK to add quality.

II.A. Introduction

The purpose of this section is to engage a general audience and to bring that audience to the specific question you intend to address. This question should be the climax of the section, and it should feel like a climax.

An Introduction should not threaten the reader. Begin with a general question that is well within the grasp of anyone in your intended audience, such as "*Increased atmospheric CO₂ levels threaten to wipe out life as we know it. How might the rate of increase be diminished?*" The Introduction should feel like a logical journey from that general question to a statement of the specific question you intend to address with your work.

Proceed from your general question in logical steps towards the experiment. Explain what is necessary for us to understand each step, particularly previous results that led to the asking of the question. Don't explain what we don't need to understand, even if the topic is important in many other contexts.

Try to craft the Introduction so that the question you ultimately ask seems inevitable. Let the question spring to our minds, even as you ask it yourself.

II.B. Methods

Present the strategy you will use to answer the question posed in the Introduction. It is not necessary to give the details, by which I mean things like the actual code you will use (if it indeed exists yet), but you should explain the approach so that we can understand it and the principles underlying the methods you propose to employ. Consider providing an outline of the program as you envision it and explanations of the pertinent algorithms.

II.C. Possible results and their implications

Describe what results (good and bad) might result from the proposed work and how they might address both the specific question you are addressing and ultimately the larger question you raised in the Introduction. Discuss pitfalls you might encounter and how you might address them. Finally, address the issue of time: how long might this project take. This is obviously not an easy question for you to answer, but go as far as you can in consultation with your counterpart (and perhaps with me), so that (to the extent possible) you will not be surprised by a project that cannot be completed.

II.D. References

It goes without saying that you will refer to the results of others, both in justifying the question you're asking and perhaps the methods you're using. This proposal is not an exhaustive review of the field, however. Give those key references that would help the interested reader learn more. References may be in any format, so long as the following information is provided: (for journal articles) Authors, year, title, journal citation (volume and inclusive pages); (for chapters in books) Authors, year, title of chapter, title of book, editors, publisher, city, and inclusive pages; (for books) Authors, year, title, publisher, and city.

III. Length of proposal

The whole thing might run 2 to 3 pages, not counting references. The project will be limited by what can be accomplished in several weeks.

IV. How to submit the proposal

Send me a file: DOC, RTF, PDF, or HTML or similar. Be prepared to see it on a web page.