

Proposal Format and Tips

Proposal writing is, at its worst, a necessary evil and at its best, an unconstrained creative exercise. You have the luxury of compiling original scientific thoughts, but at the same time have to adhere to space limitations, describe new experiments or analyses, and convince reviewers that you know what you are doing and that the proposed project can and ought to be completed. The proposal should be readable by anyone with a scientific background, but at the same time, provide sufficient detail and knowledge that experts in the field recognize the novel contributions of the proposed research. The text should be simple and concise, providing sufficient detail in each section so that a reader does not have to refer to other sections in the proposal. An interesting challenge.

Sections of a Proposal

Title

A title concisely states a single thought -- the main subject of the proposal, and is expressed in approximately 12 words. The goal is to give the reader as much specific information and be informative in as few words as possible.

Abstract

An abstract is a short version of what you intend to say. It can be written first to help organize content and logic (and then revised after all other sections are completed) or written after all other sections are completed. There are two types of abstracts: informative and indicative. An informative abstract contains factual results statements and conclusions. An indicative abstract is descriptive containing general statements typically found in review articles. For a proposal, unless you have preliminary results, your abstract will be mainly informative as you have not yet completed the work.

The abstract begins by stating the purpose of the project but does not paraphrase the title as the two are always read together. Provide the context of the research in one or two sentences, state the objectives, and then methodological components. The significance of the project should be stated in the final sentence.

An abstract should not exceed 200 words, comprised of a single paragraph using connected sentences written in the third person. Avoid acronyms, abbreviations, equations, graphs, tables, and citations if possible (define or cite if used),

Problem Addressed

This section identifies the research problem and states why it is important to conduct the research. You should provide a brief literature context to illustrate how this research is unique or is a specific case of a general problem. Suggest length: maximum 1 page.

Objectives

Make the goals of the research specific and clear. After a general statement there should be a numbered list (typically 3 or 4) of pertinent objectives.

Rationale/Background

The purpose of this section is to provide the larger context of what has been done, possible faults or missing components of previous work, and the logical next step(s) to solve this problem. You need to provide enough background so that the reader understands what has been done and can follow the logic you use to define your proposal objectives. Suggested length: maximum 4 pages

Methods (a.k.a. Technical Approach)

This section explains what you will use, how you will collect samples, and how you will analyze your data. It is helpful to provide a broad outline before launching into the details. Organize this section with subheadings that match the objectives. State the premises and assumptions made in the design and justify use of analytic techniques if there are alternatives. Your goal is to logically present in appropriate detail, how a reader can either repeat your procedures or at least to judge the reliability of the methods when interpreting the results. A chronological presentation of the methods is usually the clearest way to describe procedures. To gauge the level of detail needed in this section, assume that readers are technically proficient in the field being described. State principles of known methods and provide appropriate references. Don't forget to include the genus and species names of any animal that will be sampled or used in experiments. Suggested length: maximum 4 pages.

Project Timeline/Workplan

This section is used to outline the milestones and associated dates of project components. Some use a Gantt chart (http://en.wikipedia.org/wiki/Gantt_chart) others use verbal descriptions. The goal is to outline a doable project within the proposed time period. Suggested length: maximum 1 page.

Expected Significance

So what? Why is this work important and what will it contribute to the body of knowledge? This section is typically one or two paragraphs in length.

References

A complete listing of all literature cited in the proposal.

Life History Stages for Proposals

Adult spawner
Egg and larval
Juvenile
Pre-recruit
Pre-spawning Adult

NSF Review Criteria

1. What is the intellectual merit of the proposed activity?

How important is the proposed research to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer to conduct the project? To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized in the proposed activity?

2. What are the broader impacts of the proposed activity?

How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups? To what extent will it enhance the infrastructure for research and education such as facilities, instrumentation networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?