

## **Helpful Hints for Preparing and NIH Research Grant Application**

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### **Develop Your Ideas With Care**

As with a scientific publication, development of your ideas is extremely important. You should present your research logically and clearly, and show that your research is meaningful. Describe explicitly your hypothesis and how it will be tested. Be sure your proposed project has coherent direction, sections are well-coordinated and clearly related to a central focus.

Refer to the literature thoroughly and thoughtfully. Explain what gaps in the literature would be filled by your project. In the past, research proposals have not been funded when applicants seemed to be unaware of relevant published work or when the proposed research or study design had already been tried and judged inadequate.

Where appropriate, include well-designed tables and figures. Formulate titles that are accurate and informative.

Try to develop a clear, concise, coherent scientific writing style. A few guidelines that may prove useful include:

- using the active voice, which is more direct, less wordy, and less confusing than the passive voice;
- keeping related ideas and information together, e.g., putting clauses and phrases as close as possible to the words they modify;
- simplifying and shortening overly long and involved sentences and paragraphs; and
- eliminating redundant and awkward words, phrases, and sentences.

Be sure to allow time for a thorough editing and proofreading of your application. Ironically, many scientists who are extremely precise in their research procedures do not take the same care in writing their applications. A sloppy application with typographical and grammatic mistakes, information omitted, and unclear statements makes a poor first impression on reviewers. They may wonder about the care you will devote to the actual research.

If you cannot meet the deadline comfortably, consider submitting your best effort for the next receipt date.

### **Communicate Clearly and Thoroughly**

Do not assume that reviewers will “know what you mean.” Describe in detail the experimental design and procedures to be used to accomplish the specific aims of your project. While you may safely assume the reviewers are experts in the field and familiar with current methodology, they will not make the same assumption about you. Thus, it is not sufficient merely to state for example, “a variety of viruses will be grown in cells

using standard *in vitro* tissue culture techniques.” The reviewers will want to know which viruses, which cells, and which techniques, as well as the rationale for using the particular virus-cell system and exactly how the techniques will be used. The burden of proof is on you to show, through a clear, succinct, yet detailed explication, that you understand and are capable of handling the research methodology.

### **Include Potential Pitfalls and Alternative Approaches**

Since the reviewers are experienced research scientists, they will undoubtedly be aware of possible problem areas, even if you don't include them in your research plan. But they have no way of knowing that you too have considered these problem areas unless you fully discuss any potential pitfalls and alternative approaches.

### **Seek Advice**

Allow time for a presubmission review at your own organization. This review, which must obviously be informal and fast, could be either by a small committee or by one or two colleagues. As representatives of the scientific community, they can offer valuable advice by pointing out unclear statements and other potential problem areas.

You might also consider contacting a member of the NIH staff for advice on preparing an application. Their advice may help you avoid possible difficulties and present your project as effectively as possible.