A GUIDE FOR PROPOSAL WRITING

INTRODUCTION

The staff of the Division of Undergraduate Education (DUE) at the National Science Foundation (NSF) often provide informal guidance to proposers. Staff members give workshops on proposal writing, answer questions by phone and e-mail, and talk to potential awardees at professional meetings and at NSF. The following is the essence of the advice often given to inquirers. These suggestions for improving proposals were collected from a variety of sources, including NSF Program Directors, panel reviewers, and successful grantees. Ultimately, most proposals are peer reviewed in panels consisting of colleagues in science, technology, engineering, and mathematics disciplines or related fields, and the success in obtaining funding depends in great measure on reviewers' judgments and their written reviews.

While this ***Guide*** may provide valuable information for proposal writing in general, it was specifically prepared for programs in DUE. Because programs, priorities, technologies, funding levels, and many other details change, advice in this ***Guide*** will also change with time. Following the advice given here certainly does not guarantee funding although we hope it will help applicants write better and more competitive proposals. Another factor that must be considered is that NSF receives many more proposals that are worthy of funding than there are funds to support. National priorities and the desire for a balanced portfolio of projects influence what is ultimately funded.

We hope that you find this ***Guide*** informative. NSF, together with creative partners, makes an important difference in undergraduate science, technology, engineering, and mathematics education.

"What makes a good proposal?" A good proposal stems from a good concept. The best proposals are those to which the reviewers respond, "Of course, I wish I had thought of that!"

The most important thing is a project that will benefit undergraduate education and directly improve student opportunities to learn. That said, however, the proposal must be written in sufficient detail to allow reviewers to understand:

- what the project hopes to accomplish;
- if the project personnel have the necessary expertise to accomplish the goals and objectives;
- the potential of the project to improve undergraduate education;
- the national impact and cost effectiveness of the project; and
- evaluation and dissemination plans.

Carefully read the *Program Solicitation or Announcement* (both defined below)**.** The ***Program Solicitation or Announcement*** gives the most current information available. For the relevant program it provides, (a) a rationale, (b) an overview, (c) detailed program information,

(d) instructions for preparing and submitting proposals, and (e) special review criteria, if any. This is the best possible guide for preparing a proposal for a DUE program and should be read carefully and followed precisely. There are no hidden agendas. Proposals are funded in a competitive system based on merit.

Program Announcements

The term "program announcement" includes formal NSF publications that announce NSF Programs. Program announcements utilize the generic eligibility and proposal preparation guidelines specified in the ***Grant Proposal Guide*** and incorporate the National Science Board (NSB) approved merit review criteria (intellectual merit and broader impacts). These funding opportunities do not specify additional award conditions or reporting requirements, and do not require specific cost sharing beyond the required statutory (1%) amount.

Proposals submitted in response to program announcements are considered "unsolicited." This means that the resulting awards are subject to the statutory cost sharing requirement.

Program Solicitations

Program solicitations are used to encourage the submission of proposals in specific program areas of interest to NSF. They generally are more focused than program announcements, normally apply for a limited period of time, and include specific proposal due dates. Competition among proposals is more precisely defined than with program announcements. When a program solicitation is used, the proposals received compete directly with each other. Accordingly, programs using solicitations will be responsible for systematic evaluation, including comparative analysis of scientific, educational, and/or technical aspects, cost, and other significant factors within all proposals in accordance with the criteria specified in the program solicitation.

Proposals submitted in response to program solicitations are considered "solicited". This means that the resulting awards are not subject to the statutory cost sharing requirement. Cost sharing is not required unless explicitly included in the solicitation.

Program Information

Following is a list of grant publications with a short description. For those that are published annually, no NSF publication numbers are shown since they will change. Most of these documents are available on the NSF's online document system (http://www.nsf.gov/pubsys/ods). You can also receive publications electronically via e-mail by sending a request for a publication to getpub@nsf.gov. Paper copies may be requested online at http://www.nsf.gov/home/orderpub.htm or can be ordered via mail by contacting the NSF Publication Clearinghouse, 4201 Wilson Blvd. Arilington VA, 22230 or by phone at (703) 292-7827.