How To Write a Measurable Goal/Objective

Use this form as a guide when completing the attached Workplan and Evaluation form. You do not need to include this form with your completed grant application, but you must complete and return the Workplan and Evaluation form.

1. **What work will be done in the community?** In what activities will your team or organization engage?  
   *Example: Inviting youth involvement in civic activities.*

2. **What is the expected result of the work/activities described above?** (Each objective should include only ONE result.)  
   *Example: Youth feel valued by increased civic involvement.*

3. **How will you measure the quality of your product or impact of your service?**  
   *Example: a) Number of youth involved in selected activities as identified by activity reports or an increase in a sense of feeling valued by the community as measured by pre- and post-surveys.*

4. **By what standard will you gauge success?**  
   *Example: a) 50 more youth involved in community activities or b) 80% of youth feel more valued.*

5. **How many individuals will benefit from the work you conduct as part of the team?**  
   *Example: 50 or more youth, all citizens.*

6. **Objective statement:** *Example: XYZ Youth Outreach will engage in the development of a program to ensure that 9% of participating youth feel more valued in the community and engage 50 or more youth in civic/community activities as measured through activity reports and pre- and post-surveys.*
WRITING THE PROPOSAL--STEPS TO SUCCESS

Preparing to Write--Do your homework

- Outline for yourself and your collaborators what you want to do.
  Consult the literature and descriptions of funded projects. Know what has or is being done in the area of your proposal. Build on what is known, best practices, etc.
- Consult the agency's program solicitations and read through them to find the program you consider most appropriate.
- If you still need clarification, email or call the appropriate Program Officer. Email is usually best.
- Give yourself time to complete the process a few days before the announced deadline.
- Think about evaluation and educational research potential early in the process. Bring an evaluator in early in the planning. It helps focus the project and the proposal.
- Try to resolve problems with respect to human subjects issues when you first submit. Get your institution's requirements for exemption or approval. Indicate on the cover page if you have approval or if it's pending.

Writing

- Organize the proposal—use proposal guidelines.
- Make it easy for reviewers to find key items in your proposal.
- Description of Project: Be sure you clearly describe the problem you want to solve, what you plan to do, and how you will do it. Your activities should match your goals.
- Assessment and Evaluation: Be sure you describe how you will follow the progress of your project, determine whether it is successful (or which components are successful or why something may not have worked) and then disseminate outcomes. Assessments should match your goals. Consult a skilled evaluator.
- Consider the research potential of the project. Could results from your project add to the knowledge we now have about what works and why in STEM education? If at all possible relate your efforts to current research about what works and why.
  Be sure the budget explanation clearly links (by line number if possible) items on the budget page with the explanations given.

Final Steps--Little Things Count

- Check your proposal using the proposal guidelines to be sure the proposal is complete.
- Observe page limitations—panelists may or may not read the appendices, depending upon the program.
- Spell check and avoid abbreviations; be sure to write the complete name for an acronym the first time you use it.
- Have someone read your draft critically. Your proposal should be coherent.
- Check your FastLane submission to be sure the Grants Office has submitted it properly.
- Follow the fate of your proposal on FastLane. NSF will email decisions to you. Reviews and panel summaries plus a Program Officer's suggestions will be available via FastLane.

SUGGESTED ACTIONS AFTER YOU RECEIVE WORD OF A DECISION

Potential Awardee:

- If a Program Officer calls to negotiate a potential award, negotiate in good faith. Return requested rewritten budgets and explanations as soon as possible. GET THAT Institutional Review Board (IRB) Exemption or Approval QUICKLY IF ASKED!!!

Awards:

- Acknowledge the funding agency and program when reporting results
- Keep NSF informed through annual reports and other NSF or any WWW based data collection system that might have been developed for your program.
- Disseminate results.
- Help hopeful potential applicants if they call for help.
  Cooperate with educational researchers who might find your project a useful base for their own research.

Declines:

- Read the reviews carefully.
- Consult the Program Officer if the reviews and comments seem unclear.
- Resubmit paying attention to suggestions. Resubmissions need not refer to past declined proposals, as it will be reviewed de novo by a different panel.
OTHER TIPS

CURRENT NSF CONCERNS

(These concerns indicate features that increase interest in strong proposals)

- Attention to newly emerging fields, such as bioinformatics, nanoscience, cyberinfrastructure, and to groups currently in high demand in science, mathematics, engineering and/or technology fields such as pre-service teachers, computer science technicians and/or those with the ability to apply interdisciplinary approaches to complex problems.
- Attention to opportunities to attract or retain students from groups currently underrepresented in science, mathematics, engineering or technology fields and to faculty and institutions serving these students.
- Attention to institutions that appear to be underrepresented in the current NSF portfolio such as community colleges, historically black colleges and universities, Hispanic serving institutions and tribal colleges.

SOME COMMON REASONS FOR PROPOSAL DECLINE

- Lack of evidence the principal investigator (PI) is aware of what others have done, the relevant literature, and is building upon it.
- Diffuse, superficial and unfocused plan.
- Lack of sufficient detail.
- Apparent lack of the requisite expertise or experience by the proposers.
- Lack of a clear plan to document and evaluate activities and outcomes and to disseminate the results.
- Evaluation plans that are mainly surveys to determine user satisfaction with no clear mechanism for documenting changes in: student learning, faculty approaches to presenting material, and/or university and departmental or disciplinary approaches to graduate or undergraduate education.
- Note that proposals whose summaries do not explicitly address both Intellectual Merit and Broader Impacts will be returned without review. Useful insight into what constitutes broader impact (from a chemistry viewpoint).

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13626&org=CHE&from=home
• Slow response to requests for additional information.
• Slow response to the need for a revised budget, lack of attention to budget guidelines.
• Outstanding Annual or Final Report due from you, your co-PIs, or from a PI on a project for which you are a co-PI.
  Lack of resolution concerning IRB.

RESOURCES TO EXPLORE ONGOING PROJECTS

NSF Resources
• NSF’s Quick Search tool allows you to perform full-text searches on the award records, including abstracts, in NSF’s database.
• NSF’s Fielded Search tool allows you to restrict your search criteria to specific fields in the database, and to use date and numeric ranges. To restrict your search to programs in a specific division: In the "NSF Organization" field, select that division. To restrict your search to a particular program: In the "National Program" fields, select Contains from the drop-down list and enter the appropriate four-digit code for the program.
• NSF’s FastLane Search tools allow you to perform a variety of searches, producing lists of recent awards and lists of awards by state, program, and institution.
• NSF’s Budget Internet Information System provides information about NSF funding trends, including summaries of awards by state, awardee organization, and NSF directorate.

DUE Resources
• DUE’s Project Information Resource System (PIRS) provides a gateway to award abstracts and other information about projects supported by the division. Through PIRS, principal investigators (PIs) are able to post up-to-date information about their project activities and results. The PIRS database is searchable by PI name, awardee organization, DUE program, project discipline, abstract keywords, and other criteria.
• DUE’s Simple Award Search tool allows you to generate lists of awards made in DUE programs. You can restrict your search by NSF award number, start date, expiration date, investigator (PI or co-PI), awardee organization, and program. For CCLI program awards made in the FY2000 competition (proposal deadline June 7, 1999) and later, you can also restrict your search to individual disciplines.
• DUE’s Simple Award List tool also allows you to generate a list of awards (sorted by NSF award number) for any DUE program. You can produce a list of awards that are currently active in the program, those that were active during a given fiscal year, or those that began during a given fiscal year.
• My NSF on NSF homepage allows you to receive notifications about new content posted on the NSF website.

ADVICE ON PROPOSAL-WRITING AND PROJECT EVALUATION

Proposal-Writing Aids
• NSF 98-91: A Guide for Proposal Writing, a booklet prepared by staff in DUE
• NSF’s Step-by-Step Guide for Prospective Principal Investigators, basic tips on exploring funding opportunities at NSF and preparing a proposal
• NSF Grant Proposal Guide, detailed guidance for preparing and submitting a proposal to NSF
• Frequently Asked Questions: Preparing and Submitting a Proposal to NSF, a list of questions and answers maintained by NSF’s Policy Office

Resources for Project Evaluation
• NSF 02-057: The 2002 User-Friendly Handbook for Project Evaluation, a basic guide to quantitative and qualitative evaluation methods for educational projects
• NSF 97-153: User-Friendly Handbook for Mixed Method Evaluations, a monograph "initiated to provide more information on qualitative [evaluation] techniques and ... how they can be combined effectively with quantitative measures"
• Online Evaluation Resource Library (OERL) for NSF’s Directorate for Education and Human Resources, a collection of evaluation plans, instruments, reports, glossaries of evaluation terminology, and best practices, with guidance for adapting and implementing evaluation resources
• Field-Tested Learning Assessment Guide (FLAG) for Science, Math, Engineering, and Technology Instructors, a collection of "broadly applicable, self-contained modular classroom assessment techniques and discipline-specific tools for ... instructors interested in new approaches to evaluating student learning, attitudes, and performance." Searchable and downloadable.

Using FastLane to Submit Proposals

https://www.fastlane.nsf.gov/fastlane.jsp links to a detailed guide to preparing and submitting proposals via FastLane and links to information about programs requiring submission via grants.gov

A. REVIEW CRITERIA

All NSF proposals are evaluated through use of two National Science Board approved merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities. For example, proposals for large facility projects also might be subject to special review criteria outlined in the program solicitation.

The two merit review criteria are listed below. The criteria include considerations that help define them. These considerations are suggestions, and not all will apply to any given proposal. While proposers must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which the reviewer is qualified to make judgments.

What is the intellectual merit of the proposed activity?

How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

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 (e.g., gender, ethnicity, disability, geographic, etc.)? 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?

NSF staff will give careful consideration to the following in making funding decisions:

Integration of Research and Education

One of the principal strategies in support of NSF’s goals is to foster integration of research and education through the programs, projects and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students, and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

Integrating Diversity into NSF Programs, Projects, and Activities

Broadening opportunities and enabling the participation of all citizens, women and men, underrepresented minorities, and persons with disabilities, are essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.