

# Science, Technology, Engineering, and Mathematics Talent Expansion Program (STEP)

---

## Program Solicitation

NSF 03-548

*Replaces Document NSF 02-075*



**National Science Foundation**

Division of Undergraduate Education

Directorate for Education and Human Resources

**Letter of Intent Due Date(s) (optional):**

April 10, 2003

**Full Proposal Deadline(s) (due by 5 p.m proposer's local time):**

May 22, 2003

## REVISIONS AND UPDATES

---

This solicitation represents a major change from the previous STEP solicitation ([NSF 02-075](#)). The program now requests proposals for full implementation projects; the previous solicitation requested proposals for planning and pilot activities. In addition, the program is also soliciting proposals for a limited number of awards for educational research on degree attainment in STEM.

## SUMMARY OF PROGRAM REQUIREMENTS

---

### General Information

---

**Program Title:**

Science, Technology, Engineering, and Mathematics Talent Expansion Program (STEP)

**Synopsis of Program:**

The Science, Technology, Engineering, and Mathematics Talent Expansion Program (STEP) seeks to increase the number of students (U.S. citizens or permanent residents) pursuing and receiving associates or baccalaureate degrees in established or emerging fields within science, technology, engineering, and mathematics (STEM). For FY2003, Type 1 proposals are solicited which provide for full implementation efforts at academic institutions. Type 2 proposals are solicited which provide for educational research projects on associate or baccalaureate degree attainment in STEM.

### **Cognizant Program Officer(s):**

- Susan H. Hixson, Lead Program Director, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-4623, fax: (703) 292-9015, email: [shixson@nsf.gov](mailto:shixson@nsf.gov)
- Iraj Nejad, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-4653, fax: (703) 292-9015, email: [inejad@nsf.gov](mailto:inejad@nsf.gov)
- Myles G. Boylan, Directorate for Education & Human Resources, Division of Undergraduate Education, 812 N, telephone: (703) 292-4617, fax: (703) 292-9015, email: [mboylan@nsf.gov](mailto:mboylan@nsf.gov)
- Katherine Denniston, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-4620, email: [kdennist@nsf.gov](mailto:kdennist@nsf.gov)
- Alexander Grushow, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-4647, fax: (703) 292-9015, email: [agrushow@nsf.gov](mailto:agrushow@nsf.gov)
- Herbert Levitan, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-4627, fax: (703) 292-9015, email: [hlevitan@nsf.gov](mailto:hlevitan@nsf.gov)
- Lee L. Zia, Program Director, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-5140, fax: (703) 292-9046, email: [lzia@nsf.gov](mailto:lzia@nsf.gov)

### **Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):**

- 47.076 --- Education and Human Resources

### **Eligibility Information**

---

- **Organization Limit:**

Type 1 proposals are invited from institutions of higher education in the United States and its territories, from consortia thereof, or from nonprofit entities that have established consortia among such institutions of higher education. The institutions of higher education must offer either associates degrees or baccalaureate degrees in science, technology, engineering, and mathematics (STEM). Associate degree granting institutions with a demonstrated record of articulation to STEM baccalaureate programs need not necessarily grant associates degrees in STEM fields in order to be eligible for this program. Proposals from a formal consortium should be submitted by the consortium; proposals from an informal consortium or coalition may be submitted by one of the member institutions. For additional details see Chapter I.C., "Who May Submit Proposals" in the Grant Proposal Guide. Projects may involve a single institution, collaboration with business and industrial partners, or collaboration among several institutions. For example, projects may include collaborative efforts that improve the transition of students among the collaborating institutions, such as transfer between two- and four-year institutions.

Type 2 proposals are invited from any individual or organization eligible to submit proposals to the NSF.

- **PI Eligibility Limit:** None Specified.
- **Limit on Number of Proposals:** None Specified.

## Award Information

---

- **Anticipated Type of Award:** Standard or Continuing Grant
- **Estimated Number of Awards:** 12 to 23 - Type 1, 10-20 awards; Type 2, 2-3 awards
- **Anticipated Funding Amount:** \$22,000,000 Subject to availability of funds.

## Proposal Preparation and Submission Instructions

---

### A. Proposal Preparation Instructions

- **Letters of Intent:** Submission of Letters of Intent is optional. Please see the full text of this solicitation for further information.
- **Full Proposal Preparation Instructions:** This solicitation contains information that supplements the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full text of this solicitation for further information.

### B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required.
- **Indirect Cost (F&A) Limitations:** Not Applicable.
- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full text of this solicitation for further information.

### C. Due Dates

- **Letters of Intent (*optional*):**  
April 10, 2003
- **Full Proposal Deadline Date(s)** (due by 5 p.m proposer's local time):  
May 22, 2003

## Proposal Review Information

---

- **Merit Review Criteria:** National Science Board approved criteria. Additional merit review considerations apply. Please see the full text of this solicitation for further information.

## Award Administration Information

---

- **Award Conditions:** Standard NSF award conditions apply.
- **Reporting Requirements:** Additional reporting requirements apply. Please see the full text of this solicitation for further information.

## TABLE OF CONTENTS

---

### Summary of Program Requirements

#### I. Introduction

#### II. Program Description

### III. Eligibility Information

### IV. Award Information

### V. Proposal Preparation and Submission Instructions

- A. Proposal Preparation Instructions
- B. Budgetary Information
- C. Due Dates
- D. FastLane Requirements

### VI. Proposal Review Information

- A. NSF Proposal Review Process
- B. Review Protocol and Associated Customer Service Standard

### VII. Award Administration Information

- A. Notification of the Award
- B. Award Conditions
- C. Reporting Requirements

### VIII. Contacts for Additional Information

### IX. Other Programs of Interest

## I. INTRODUCTION

---

Undergraduate education is central to the National Science Foundation's mission in human resource development. Whether preparing students to participate as citizens in a technological society, to enter the workforce with two- or four-year degrees, to continue their formal education in graduate school, or to further their education in response to new career goals or workplace expectations, undergraduate education provides the critical link between the Nation's secondary schools and a society increasingly dependent upon science and technology. Increasing the number of undergraduate students obtaining degrees in science, technology, engineering, and mathematics (STEM) fields will provide a workforce that is prepared to ensure a healthy economy, respond to demands for national security, and maintain and elevate the quality of life and standard of living in the United States through technological and scientific advancements.

## II. PROGRAM DESCRIPTION

---

### Type 1

Program activities under the Type 1 STEP competition should be efforts aimed at implementing strategies that will lead to an increase in the number of students (United States citizens or permanent residents) pursuing and obtaining STEM degrees at institutions with baccalaureate degree programs; or pursuing degrees, concentrations, or certifications in STEM fields or pursuing credits toward transfer to a baccalaureate degree program in STEM fields at community colleges. The goal of the project must be to increase the total enrollment of such students at the institution(s). If a project focuses efforts on only a subset of STEM fields, increases in those fields must not be at the expense of enrollments in other STEM fields.

Project efforts might include, for example, one or more of the following:

- Programs that focus directly on the quality of student learning, including those that encourage (a) high-caliber teaching, including enabling faculty to spend additional time teaching participating students in smaller class settings, particularly in the laboratory environment; (b) opportunities to develop new pedagogical approaches including the development of web-based course strategies, distributed and collaborative digital teaching tools, or interactive course modules; and (c) training of

teaching assistants;

- Programs that expand the capacity of institutions of higher education to incorporate current advances in science and technology into the undergraduate learning environment;
- Programs including interdisciplinary approaches to undergraduate STEM education;
- Bridge programs that enable students at community colleges to matriculate directly into baccalaureate STEM programs, including those bridge programs targeted at traditionally underrepresented groups in such disciplines;
- Programs among collaborating academic institutions designed to increase the number of pathways available for achieving a degree in STEM, or to improve the articulation among programs at the institutions;
- Programs, such as mentoring programs, that aim to increase the number of traditionally underrepresented students (low-income, ethnic and racial minorities, persons with disabilities, and women) specifically in STEM undergraduate majors;
- Programs that (a) facilitate student exposure to potential careers, including cooperative programs with industry or government that place students in internships as early as the summer following their first year of study;(b) provide part-time employment in industry during the school year; or (c) provide opportunities for undergraduates to participate in industry or government sponsored research;
- Programs that assist institutions of higher education in states that participate in the Experimental Program to Stimulate Competitive Research (EPSCoR) to broaden the STEM student base or increase retention in these fields;
- Programs to encourage undergraduate research on- or off-campus;
- Programs that leverage the Federal investment by providing matching funds from industry, from State or local government sources, or from private sources;
- Programs that provide financial incentives to students entering and persisting in the study of STEM; or
- Other approaches to achieving program goals.

The outcomes expected of funded Type 1 STEP projects include all of the following:

- Significant progress toward achieving the specific increases proposed in the number of students who are United States citizens or permanent resident aliens pursuing or obtaining STEM degrees at institutions with baccalaureate degree programs; or pursuing degrees, concentrations, or certifications in STEM fields or pursuing credits toward transfer to a baccalaureate degree program in STEM fields at community colleges;
- A description of the activities that have been institutionalized as a result of the project;
- A description of the expectations, following the end of the grant period, for continued efforts at the institution to increase the number of students studying and receiving associates or baccalaureate degrees in established or emerging fields within STEM areas;
- An evaluation, using the benchmarks defined in the proposal, that informs the institution and others of the progress and findings of the grant project; and
- Effective dissemination of project processes and results to the broader community.

In addition to describing the proposed activities, the Project Description in Type 1 proposals should include the information requested under "Full Proposal" in Section V.A. of this Solicitation.

## **Type 2**

Program activities under the Type 2 STEP competition represent educational research on associate or baccalaureate degree attainment in STEM. Proposals of up to \$100,000 annually (one- and two-year awards) for educational research projects should be based in a research design that incorporates appropriate and proven methodologies and strategies to (1) identify the research questions, (2) implement the collection and analysis of data, and (3) interpret the resulting measures and findings generated by the study. The results should provide convincing evidence of factors (including departmental/institutional) facilitating associate and/or baccalaureate degree attainment, and/or undergraduate access to STEM careers, and/or persistence to STEM graduate study. Results should provide educators with practical and successful strategies to promote broader adoption or adaptation of the recommended factors within their educational systems (departments, institutions, consortia). These educational research studies should reflect explicit cognizance of the broad variety of institutions of higher education involved and should address the unique challenges and opportunities posed by that variety. Outcomes of the proposed research should be developed with the intent to inform the education community, including faculty, administrators, policymakers, and parents, enabling them to guide better the future development of learning experiences, and foster the retention, and academic success of diverse students in STEM.

Note that broader research opportunities in student learning and student academic success are eligible for support under the Research on Learning and Education (ROLE) Program.

The outcomes expected of funded Type 2 STEP projects include all of the following:

- Compelling evidence of an important factor(s) and its role(s) in facilitating associate and/or baccalaureate degree attainment, and/or undergraduate access to STEM careers, and/or persistence to STEM graduate study;
- Successful strategies useful to educators for promoting broader adoption or adaptation of the factor(s) that has been studied; and
- Dissemination of the research results to the education community.

### **III. ELIGIBILITY INFORMATION**

---

Type 1 proposals are invited from institutions of higher education in the United States and its territories, to consortia thereof, or to nonprofit entities that have established consortia among such institutions of higher education. The institutions of higher education must offer either associates degrees or baccalaureate degrees in science, technology, engineering, and mathematics (STEM). Associate degree granting institutions with a demonstrated record of articulation to STEM baccalaureate programs need not necessarily grant associates degrees in STEM fields in order to be eligible for this program. Proposals from a formal consortium should be submitted by the consortium; proposals from an informal consortium or coalition may be submitted by one of the member institutions. For additional details see the Grant Proposal Guide. Projects may involve a single institution, collaboration with business and industrial partners, or collaboration among several institutions. For example, projects may include collaborative efforts that improve the transition of students among the collaborating institutions, such as transfer between two- and four-year institutions.

Type 2 proposals are invited from any individual or organization eligible to submit proposals to the NSF.

### **IV. AWARD INFORMATION**

---

The number and size of awards will depend on the quality of the proposals received and the availability of funds.

#### **Type 1**

Grant duration for Type 1 projects is expected to be 5 years, with the final 2 years funding contingent on determination that satisfactory progress has been made by the grantee during the first 3 years of the grant period. Institutions are eligible to apply for funds based on their total enrollments of undergraduate students (full-time equivalents). Institutions enrolling 5,000 or fewer undergraduate students may request up to a total of \$500,000 for a period of five years, those enrolling between 5000 and 15,000 undergraduate students may request up to a total of \$1.0 M for up to five years, and those enrolling more than 15,000 undergraduate students may request up to a total of \$2.0 M for up to five years. Consortia of institutions are eligible to request funds within these limits based on their total, combined undergraduate enrollment. An institution is allowed to submit only one Type 1 proposal, or to be part of only one consortium submitting a Type 1 proposal. In each consortium proposal, a letter must be included from the Authorized Organizational Representative (AOR) of each partner institution noting that the AOR is aware of this submission. Awards will be made as standard or continuing grants. The expectation is that about 10-20 Type 1 awards will be made in FY2003.

#### **Type 2**

Grant duration for Type 2 awards is 1-2 years, and the request may be up to \$100,000 per year. Type 2 proposals are exempt from the restriction on Type 1 proposals limiting an institution to participation in only one submission. The expectation is that 2-3 Type 2 awards will be made in FY2003.

### **V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS**

---

#### **A. Proposal Preparation Instructions**

---

### **Letters of Intent (optional):**

A letter of intent is optional but encouraged before submitting either a Type 1 or Type 2 full proposal. The letter of intent is not a preliminary proposal. It is intended to enhance the efficiency of the review process. It should include the institution name, the principal investigator, and an indication as to whether the proposal will be a Type 1 or Type 2 submission. Letters of intent should be sent by electronic mail to [STEP-prog@nsf.gov](mailto:STEP-prog@nsf.gov) by April 10, 2003.

### **Full Proposal Instructions:**

Proposals submitted in response to this program announcement/solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF *Grant Proposal Guide* (GPG). The complete text of the GPG is available electronically on the NSF Website at: <http://www.nsf.gov/cgi-bin/getpub?gpg>. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (301) 947-2722 or by e-mail from [pubs@nsf.gov](mailto:pubs@nsf.gov).

In addition to describing the proposed activities, Type 1 proposals are expected to include within the 15 pages of the Project Description:

- The current undergraduate STEM enrollment and graduation figures at each institution(s), and the total undergraduate student enrollment at each institution(s);
- The proposed increases to be expected during the five-year grant period in the number of students who are United States citizens or permanent resident aliens pursuing or obtaining STEM degrees at institutions with baccalaureate degree programs; or pursuing degrees, concentrations, or certifications in STEM fields or pursuing credits toward transfer to a baccalaureate degree program in STEM fields at community colleges;
- The reasons that working toward an increase in the number of students majoring or graduating in STEM areas is compatible with the institution's mission;
- A description of prior efforts to increase interest in STEM and results of those efforts;
- A statement of the overall vision that underlies the institution's management and implementation plan to increase the numbers of students majoring or graduating in STEM areas;
- The specific strategies to be used during the grant period to increase the number of students pursuing or graduating in STEM fields, with rationales and justifications for these efforts;
- An explanation of why the proposed activities are not expected to cause decreases in the enrollments in other STEM fields, should the project activities focus on only a subset of STEM fields;
- A clear statement of which of the proposed activities, if successful, would be expected to be institutionalized by the end of the grant period, and of which of the proposed activities, if successful, would require further sources of support in order to be continued; and
- The benchmarks that will be used to measure progress as the project moves forward.

The National Science Foundation allows maximum flexibility in the design of efforts to increase the number of students pursuing and receiving associates or baccalaureate degrees in established or emerging fields within STEM fields. However, the proposal must fully document the rationales for choosing the efforts to be undertaken, including relevant results from efforts that have been undertaken at other institutions in the past. Funded Type 1 projects will be expected to establish an internal Advisory Committee, chaired by the Chief Academic Officer (or other appropriate administrative official should the Chief Academic Officer be a PI or co-PI on the project) at the institution, with members drawn from disciplines across the STEM fields. This committee is expected to meet with project personnel at least once every six months throughout the grant period in order to provide advice to the project, and to facilitate dissemination about the project throughout the institution(s). The members of this Advisory Committee should be specified in the proposal.

### **Additional Instructions**

A Project Data Form (NSF Form 1295) must be submitted (via FastLane) as part of all proposals. The information on this form is used to direct proposals to appropriate reviewers and to determine the characteristics of projects supported by the Division of Undergraduate Education. In FastLane, this form will show up in the list of forms for your proposal only after you have (1) selected the "STEP" program announcement/solicitation number on the Cover Sheet and (2) saved the Cover Sheet.

An institution is allowed to submit only one Type 1 proposal, or to be part of only one consortium submitting a Type 1 proposal. In each consortium proposal, a letter must be included from the Authorized Organizational Representative (AOR) of each partner institution

noting that the AOR is aware of this submission.

Proposers are reminded to identify the program announcement/solicitation number (03-548) in the program announcement/solicitation block on the proposal Cover Sheet. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

## **B. Budgetary Information**

---

### **Cost Sharing:**

Cost sharing is not required in proposals submitted under this Program Solicitation.

### **Other Budgetary Limitations:**

Grant duration is expected to be 5 years for Type 1 proposals, and 1-2 years for Type 2 proposals. Institutions are eligible to apply for funds based on their total enrollment of undergraduate students (full-time equivalents). Institutions enrolling 5,000 or fewer undergraduate students may request up to a total of \$500,000 for a period of five years, those enrolling between 5000 and 15,000 undergraduate students may request up to a total of \$1.0 M for five years, and those enrolling more than 15,000 undergraduate students may request up to a total of up to \$2.0 M for five years. Consortia of institutions are eligible to request funds within these limits based on their total, combined undergraduate enrollment.

## **C. Due Dates**

---

Proposals must be submitted by the following date(s):

### **Letters of Intent (optional):**

April 10, 2003

### **Full Proposal Deadline(s) (due by 5 p.m proposer's local time):**

May 22, 2003

## **D. FastLane Requirements**

---

Proposers are required to prepare and submit all proposals for this announcement/solicitation through the FastLane system. Detailed instructions for proposal preparation and submission via FastLane are available at: <http://www.fastlane.nsf.gov/a1/newstan.htm>. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail [fastlane@nsf.gov](mailto:fastlane@nsf.gov). The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program announcement/solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this announcement/solicitation.

*Submission of Electronically Signed Cover Sheets.* The Authorized Organizational Representative (AOR) must electronically sign the proposal Cover Sheet to submit the required proposal certifications (see Chapter II, Section C of the [Grant Proposal Guide](#) for a listing of the certifications). The AOR must provide the required electronic certifications within five working days following the electronic submission of the proposal. Proposers are no longer required to provide a paper copy of the signed Proposal Cover Sheet to NSF. Further instructions regarding this process are available on the FastLane Website at: <http://www.fastlane.nsf.gov>

## **VI. PROPOSAL REVIEW INFORMATION**

---



## A. NSF Proposal Review Process

---

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program Officers charged with the oversight of the review process. NSF invites the proposer to suggest, at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority-serving institutions, or adjacent disciplines to that principally addressed in the proposal.

The National Science Board approved revised criteria for evaluating proposals at its meeting on March 28, 1997 ([NSB 97-72](#)). All NSF proposals are evaluated through use of the two merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

On July 8, 2002, the NSF Director issued [Important Notice 127](#), Implementation of new Grant Proposal Guide Requirements Related to the Broader Impacts Criterion. This Important Notice reinforces the importance of addressing both criteria in the preparation and review of all proposals submitted to NSF. NSF continues to strengthen its internal processes to ensure that both of the merit review criteria are addressed when making funding decisions.

In an effort to increase compliance with these requirements, the January 2002 issuance of the GPG incorporated revised proposal preparation guidelines relating to the development of the Project Summary and Project Description. Chapter II of the GPG specifies that Principal Investigators (PIs) must address both merit review criteria in separate statements within the one-page Project Summary. This chapter also reiterates that broader impacts resulting from the proposed project must be addressed in the Project Description and described as an integral part of the narrative.

Effective October 1, 2002, NSF will return without review proposals that do not separately address both merit review criteria within the Project Summary. It is believed that these changes to NSF proposal preparation and processing guidelines will more clearly articulate the importance of broader impacts to NSF-funded projects.

The two National Science Board approved merit review criteria are listed below (see the [Grant Proposal Guide](#) Chapter III.A for further information). 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 he/she 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 the 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 -- is 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.

### **Additional Review Criteria**

In considering the above criteria for Type 1 proposals, reviewers will be asked to comment on the following:

- Does the projected increase in STEM enrollments appear aligned with the mission of the institution(s) and the design of the project?
- Is a compelling overall vision provided for the plan of the institution(s) to achieve a substantial increase in STEM enrollments, and is the proposed effort important to the attainment of that vision?
- Is strong justification provided to indicate that the proposed efforts are likely to be successful?
- Do the management and implementation details provide appropriate support for the proposed project?
- Are the proposed efforts likely to lead to an increase in the total number of STEM majors, as opposed to causing an increase in one or a few STEM fields while allowing for a decrease in other STEM fields?
- Are incremental benchmarks for progress toward achieving the proposed increases reasonable and clearly delineated?
- What are the prospects for maintaining or increasing STEM enrollments at the institutions following the end of the grant period?

In considering the above criteria for Type 2 proposals, reviewers will be asked to comment on the following:

- Does the proposal identify a potentially significant factor(s) in facilitating associate and/or baccalaureate degree attainment, and/or undergraduate access to STEM careers, and/or persistence to STEM graduate study, and are the proposed efforts likely to lead to significant findings?
- Are the strategies proposed for promoting broader adoption or adaptation of the factor(s) studied likely to be effective?
- How likely is the dissemination plan to inform all parts of the education community of important results from the project?

### **B. Review Protocol and Associated Customer Service Standard**

---

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Proposals submitted in response to this announcement/solicitation will be reviewed by Mail and/or Panel Review .

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

A summary rating and accompanying narrative will be completed and submitted by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, are sent to the Principal Investigator/Project Director by the Program Director. In addition, the proposer will receive an explanation of the decision to award or decline funding.

NSF is striving to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. The time interval begins on the date of receipt. The interval ends when the Division Director accepts the Program Officer's recommendation.

In all cases, after programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at their own risk.

## VII. AWARD ADMINISTRATION INFORMATION

---

### A. Notification of the Award

---

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See section VI.A. for additional information on the review process.)

### B. Award Conditions

---

An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (NSF-GC-1); \* or Federal Demonstration Partnership (FDP) Terms and Conditions \* and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreement awards also are administered in accordance with NSF Cooperative Agreement Terms and Conditions (CA-1). Electronic mail notification is the preferred way to transmit NSF awards to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

\*These documents may be accessed electronically on NSF's Website at [http://www.nsf.gov/home/grants/grants\\_gac.htm](http://www.nsf.gov/home/grants/grants_gac.htm). Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (301) 947-2722 or by e-mail from [pubs@nsf.gov](mailto:pubs@nsf.gov).

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, available electronically on the NSF Website at <http://www.nsf.gov/cgi-bin/getpub?gpm>. The GPM is also for sale through the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402. The telephone number at GPO for subscription information is (202) 512-1800. The GPM may be ordered through the GPO Website at <http://www.gpo.gov>.

### C. Reporting Requirements

---

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

Principal Investigators will be required to participate in evaluation activities related to the Directorate for Education and Human Resources's program evaluation. In addition, each institution involved in a funded project will be expected to provide, to the principal investigator of the project, data annually pertaining to student enrollments, student achievement, student persistence to degrees, and student placements following graduation.

Within 90 days after the expiration of an award, the PI also is required to submit a final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for the PI and all Co-PIs. PIs should examine the formats of the required reports in advance to assure availability of required data.

PIs are required to use NSF's electronic project reporting system, available through FastLane, for preparation and submission of annual and final project reports. This system permits electronic submission and updating of project reports, including information on project participants (individual and organizational), activities and findings, publications, and other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system.

## VIII. CONTACTS FOR ADDITIONAL INFORMATION

---

General inquiries regarding this program should be made to:

- Susan H. Hixson, Lead Program Director, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-4623, fax: (703) 292-9015, email: [shixson@nsf.gov](mailto:shixson@nsf.gov)
- Iraj Nejad, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-4653, fax: (703) 292-9015, email: [inejad@nsf.gov](mailto:inejad@nsf.gov)
- Myles G. Boylan, Directorate for Education & Human Resources, Division of Undergraduate Education, 812 N, telephone: (703) 292-4617, fax: (703) 292-9015, email: [mboylan@nsf.gov](mailto:mboylan@nsf.gov)
- Katherine Denniston, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-4620, email: [kdennist@nsf.gov](mailto:kdennist@nsf.gov)
- Alexander Grushow, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-4647, fax: (703) 292-9015, email: [agrushow@nsf.gov](mailto:agrushow@nsf.gov)
- Herbert Levitan, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-4627, fax: (703) 292-9015, email: [hlevitan@nsf.gov](mailto:hlevitan@nsf.gov)
- Lee L. Zia, Program Director, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-5140, fax: (703) 292-9046, email: [lzia@nsf.gov](mailto:lzia@nsf.gov)

General inquiries regarding Science, Technology, Engineering, and Mathematics Talent Expansion Program should be made to: Division of Undergraduate Education, telephone: 703-292-8670, e-mail: [undergrad@nsf.gov](mailto:undergrad@nsf.gov).

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188, email: [fastlane@nsf.gov](mailto:fastlane@nsf.gov)
- Division of Undergraduate Education, telephone: (703)292-4646, email: [duefl@nsf.gov](mailto:duefl@nsf.gov)

## **IX. OTHER PROGRAMS OF INTEREST**

---

The NSF *Guide to Programs* is a compilation of funding for research and education in science, mathematics, and engineering. The NSF *Guide to Programs* is available electronically at <http://www.nsf.gov/cgi-bin/getpub?gp>. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter.

Many NSF programs offer announcements or solicitations concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices. Any changes in NSF's fiscal year programs occurring after press time for the *Guide to Programs* will be announced in the NSF *E-Bulletin*, which is updated daily on the NSF Website at <http://www.nsf.gov/home/ebulletin>, and in individual program announcements/solicitations. Subscribers can also sign up for NSF's *Custom News Service* (<http://www.nsf.gov/home/cns/start.htm>) to be notified of new funding opportunities that become available.

In addition, the Division of Undergraduate Education maintains a web site at [http://www.ehr.nsf.gov/ehr/ue/links/other\\_programs.asp](http://www.ehr.nsf.gov/ehr/ue/links/other_programs.asp) that lists other funding opportunities specifically for undergraduate STEM education.

## ABOUT THE NATIONAL SCIENCE FOUNDATION

---

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Awardees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities and persons with disabilities to compete fully in its programs. In accordance with Federal statutes, regulations and NSF policies, no person on grounds of race, color, age, sex, national origin or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF, although some programs may have special requirements that limit eligibility.

*Facilitation Awards for Scientists and Engineers with Disabilities (FASSED)* provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the GPG Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at <http://www.nsf.gov>

- **Location:** 4201 Wilson Blvd. Arlington, VA 22230
  
- **For General Information** (NSF Information Center): (703) 292-5111
  
- **TDD (for the hearing-impaired):** (703) 292-5090
  
- **To Order Publications or Forms:**  
  
Send an e-mail to: [pubs@nsf.gov](mailto:pubs@nsf.gov)  
  
or telephone: (301) 947-2722
  
- **To Locate NSF Employees:** (703) 292-5111

## PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

---

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to applicant institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other

government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

An agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid OMB control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton, Reports Clearance Officer, Division of Administrative Services, National Science Foundation, Arlington, VA 22230.

OMB control number: 3145-0058.

[nsf.gov](http://nsf.gov)

[| About NSF](#) | [Funding](#) | [Publications](#) | [News & Media](#) | [Search](#) | [Site Map](#) | [Help](#)

---



**The National Science Foundation**  
4201 Wilson Boulevard, Arlington, Virginia 22230, USA  
Tel: 703-292-5111, FIRS: 800-877-8339 | TDD: 703-292-5090

[Policies](#)  
[Contact NSF](#)  
[Customize](#)