

NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM)

PROGRAM SOLICITATION NSF 09-567

REPLACES DOCUMENT(S):
NSF 07-524



National Science Foundation

Directorate for Education & Human Resources
Division of Undergraduate Education

Letter of Intent Due Date(s) (optional) (due by 5 p.m. proposer's local time):

August 11, 2009

(for the September 14, 2009 competition)

July 14, 2010

(for the August 12, 2010, competition)

July 13, 2011

(for the August 11, 2011, competition)

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

September 14, 2009

August 12, 2010

August 11, 2011

REVISION NOTES

Please be advised that the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) includes revised guidelines to implement the mentoring provisions of the America COMPETES Act (ACA) (Pub. L. No. 110-69, Aug. 9, 2007.) As specified in the ACA, each proposal that requests funding to support postdoctoral researchers must include a description of the mentoring activities that will be provided for such individuals. Proposals that do not comply with this requirement will be returned without review (see the PAPP Guide Part I: *Grant Proposal Guide* Chapter II for further information about the implementation of this new requirement).

The provision for a planning year before scholarships are awarded has been eliminated, since in most cases scholarships can be awarded for the fall semester following notification of a grant.

The amounts allowed for administrative expenses and student support expenses have been changed.

A section on dissemination has been added to the narrative in section V.A.5.j.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM)

Synopsis of Program:

This program makes grants to institutions of higher education to support scholarships for academically talented, financially needy students, enabling them to enter the workforce following completion of an associate; baccalaureate; or graduate-level degree in science and engineering disciplines. Grantee institutions are

responsible for selecting scholarship recipients, reporting demographic information about student scholars, and managing the S-STEM project at the institution.

The program does not make scholarship awards directly to students; students should contact their institution's Office of Financial Aid for this and other scholarship opportunities.

Cognizant Program Officer(s):

- Duncan E. McBride, Section Head, Division of Undergraduate Education, 835 N, telephone: (703) 292-4630, email: dmcbride@nsf.gov
- Lesia L. Crumpton-Young, Program Director, Division of Undergraduate Education, 835 N, telephone: (703) 292-4629, email: lcrumpton@nsf.gov
- Bert E. Holmes, Program Director, Division of Undergraduate Education, 835 N, telephone: (703) 292-5128, email: bholmes@nsf.gov

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

- 47.076 --- Education and Human Resources

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 80 to 100

Anticipated Funding Amount: \$50,000,000 to \$70,000,000 annually, for new and continuing activities, pending availability of funds. Awards are normally not expected to exceed \$600,000 in total. Annual budgets are limited to \$225,000.

Eligibility Information

Organization Limit:

Proposals may only be submitted by the following:

- Institutions of higher education (as defined in section 101 (a) of the Higher Education Act of 1965) in the United States and its territories that grant associate, baccalaureate, or graduate degrees in the disciplines listed in section IV.C. are invited to submit proposals.

PI Limit:

The Principal Investigator must be a faculty member currently teaching in one of the S-STEM disciplines who can provide the leadership required to ensure the success of the project. Projects involving more than one department within an institution are eligible, but a single Principal Investigator must accept overall management responsibility. Other members of the S-STEM project management team may be listed as Co-Principal Investigators.

Limit on Number of Proposals per Organization:

An Institution may submit one proposal from each constituent school or college that awards degrees in an eligible field. See Section IV.A. for details.

Limit on Number of Proposals per PI:

None Specified

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.
- **Preliminary Proposal Submission:** Not Applicable
- **Full Proposal Preparation Instructions:** This solicitation contains information that supplements the standard NSF Proposal and Award Policies and Procedures Guide, Part I: 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 under this solicitation.
- **Indirect Cost (F&A) Limitations:** No indirect costs are allowed.
- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full text of this solicitation for further information.

C. Due Dates

- **Letter of Intent Due Date(s) (optional)** (due by 5 p.m. proposer's local time):

August 11, 2009

(for the September 14, 2009 competition)

July 14, 2010

(for the August 12, 2010, competition)

July 13, 2011

(for the August 11, 2011, competition)

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

September 14, 2009

August 12, 2010 August 11, 2011

Proposal Review Information Criteria

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. **Award Information**
- IV. **Eligibility Information**
- V. **Proposal Preparation and Submission Instructions**
 - A. Proposal Preparation Instructions
 - B. Budgetary Information
 - C. Due Dates
 - D. FastLane Requirements
- VI. **NSF Proposal Processing and Review Procedures**
 - A. NSF Merit Review Criteria
 - B. Review and Selection Process
- VII. **Award Administration Information**
 - A. Notification of the Award
 - B. Award Conditions
 - C. Reporting Requirements
- VIII. **Agency Contacts**
- IX. **Other Information**

I. INTRODUCTION

The NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM) program provides institutions with funds for student scholarships to encourage and enable academically talented but financially needy students to enter the workforce following completion of an associate, baccalaureate, or graduate degree in fields of science, technology, engineering, or mathematics. The program was established by the National Science Foundation (NSF) in accordance with the American Competitiveness and Workforce Improvement Act of 1998 (P.L. 105-277) as modified by P.L. 106-313 and P.L.108-447 in 2004. The Act reflects the national need to increase substantially the number of American scientists and engineers.

II. PROGRAM DESCRIPTION

- A. The S-STEM program emphasizes the importance of recruiting students to science and engineering disciplines, mentoring and supporting students through degree completion, and partnering with employers to facilitate student career placement in the STEM workforce. Participating institutions are expected to support the goals of the S-STEM program including:
- Improved educational opportunities for students;
 - Increased retention of students to degree achievement;
 - Improved student support programs at institutions of higher education;
 - Increased numbers of well-educated and skilled employees in technical areas of national need.

Students to be awarded scholarships must demonstrate academic talent and financial need. In addition, they must be US citizens, permanent residents, nationals, or refugees. Refer to Section IV.C. (Scholarship Recipients) in this Solicitation for details.

It is expected that scholarship recipients will achieve at least one of the following by the end of the scholarship award period:

- Receive an associate, baccalaureate, or graduate degree in one of the S-STEM disciplines;
- Transfer from an associate degree program to a baccalaureate degree program or from an undergraduate program to a graduate program in one of the S-STEM disciplines;
- Successfully complete a stage within an associate, baccalaureate, or graduate degree program in one of the S-STEM disciplines that, in the particular institution, is documented and described as a point of unusually high attrition.

S-STEM grants may be made for up to five years and may provide individual scholarships of up to \$10,000 per year, depending on financial need. Grantee institutions may elect to support individual student scholars for four years or may elect to support several cohorts of students for a shorter duration within the award period.

Please refer to Section V.A.5., Project Description, for details about specific S-STEM project requirements.

- B. The following sources may be of interest to proposers in thinking about an S-STEM project. They represent some of the literature about effective scholarship programs. The list is not a complete bibliography, only a selection from the literature.

AMS Members and Industry/Government Sponsors Help AMS Launch a New Scholarship Program. (2006). [Feature Article]. *Bulletin of the American Meteorological Society*, 86(12), 1821-1822.

AMS Fellowship/Scholarship Program: A Continuing Tradition of Success. (2006). [Feature Article]. *Bulletin of the American Meteorological Society*, 87(9), 1233.

Baker, J. G., & Finn, M. G. (2008). Can a Merit-Based Scholarship Program Increase Science and Engineering Baccalaureates? [Feature Article]. *Journal for the Education of the Gifted*, 31(3), 322-337.

Besterfield-Sacre, M., C. Atman, and L. Shuman (1995) "How Freshman Attitudes Change in the Freshman Year, *American Society for Engineering Education Conference*, June.

Besterfield-Sacre, M., C. Atman, and L. Shuman, (1997) "Characteristics of Freshmen Engineering Students: Models for Determining Student Attrition in Engineering," *Journal of Engineering Education*, April.

Boyer, E. L. (1996). The Scholarship of Engagement. *Bulletin of the American Academy of Arts and Sciences*, 49(7), 18-33.

Chesler, Naomi C. and Chesler, Mark A. (2002), "Gender-Informed Mentoring Strategies for Women Engineering Scholars: On Establishing a Caring Community," *Journal of Engineering Education*, ASEE January 2002, 49-52.

Dong, L., & Chapman, D. W. (2008). The Chinese Government Scholarship Program: An Effective Form of Foreign Assistance? [Feature Article]. *International Review of Education*, 54(2), 155-173.

Felder, R. M. (1994) "A Longitudinal Study of Engineering Student Performance and Retention, Part III - Gender Differences in Student Performance and Attitudes," *Journal of Engineering Education*, 151-163.

Fife, J. D., & Leslie, L. L. (1976). The college student grant study: The effectiveness of student grant and scholarship programs in promoting equal educational opportunity. *Research in Higher Education*, 4(4), 317-333.

National Science Foundation (2008), *Women, Minorities, and Persons with Disabilities in Science and Engineering: 2007*, National Science Foundation, Arlington, VA.

NEHA's scholarship program: focusing on the future. (1995). [Feature Article]. *Journal of Environmental Health*, 58, 41.

Olds, B.M., Moskal, B.M. and Miller, R.L. "Assessment in Engineering Education: Evolution, Approaches and Future Collaborations." *Journal of Engineering Education*. January 2005, pp. 13-25.

Planty, M. et al (2008), *The Condition of Education 2008*, National Center for Education Statistics, US Department of Education, Washington, D.C.

Seymour, Elaine and Hewitt, Nancy (1997), *Talking About Leaving: Why Undergraduates Leave the Sciences*, Westview Press, Boulder, Colorado.

Shapiro, N.S. and Levine, J.H., (1999), *Creating Learning Communities*, Jossey-Bass, San Francisco.

Stewart, G. L., Russell, R. B., & Wright, D. (1997). The comprehensive role of student affairs in African American student retention. *Journal of College Admission*, 154, pp. 6-11.

Stewart, T., Wolf, P., Wolf, P. J., & Cornman, S. Q. (2007). Parent and Student Voices on the First Year of the DC Opportunity Scholarship Program. [Feature Article]. *Peabody Journal of Education*, 82(2/3), 311-386.

Tinto, V., (1997) *Universities as Learning Organizations*. *About Campus*, 1(6), pp. 2-4.

Thomas S. Dee, L. A. J. (1999). Who Loses HOPE? Attrition from Georgia's College Scholarship Program.

III. AWARD INFORMATION

The number and size of awards will vary depending upon the scope of projects and availability of funds. Approximately \$50-\$70 million is expected to be available annually, for new and continuing activities, pending availability of funds, to support approximately 80-100 new S-STEM awards.

Awards are normally not expected to exceed \$600,000 in total. Annual budgets are limited to \$225,000. The award duration may be up to five years within the annual and overall budget limits. The limits include the funds for administrative and support functions as well as the scholarship funds. (See section V.A.8. below for details on the budget.)

IV. ELIGIBILITY INFORMATION

Organization Limit:

Proposals may only be submitted by the following:

- Institutions of higher education (as defined in section 101 (a) of the Higher Education Act of 1965) in the United States and its territories that grant associate, baccalaureate, or graduate degrees in the disciplines listed in section IV.C. are invited to submit proposals.

PI Limit:

The Principal Investigator must be a faculty member currently teaching in one of the S-STEM disciplines who can provide the leadership required to ensure the success of the project. Projects involving more than one department within an institution are eligible, but a single Principal Investigator must accept overall management responsibility. Other members of the S-STEM project management team may be listed as Co-Principal Investigators.

Limit on Number of Proposals per Organization:

An Institution may submit one proposal from each constituent school or college that awards degrees in an eligible field. See Section IV.A. for details.

Limit on Number of Proposals per PI:

None Specified

Additional Eligibility Info:

A. Institutions

1. Institutions of higher education (as defined in section 101 (a) of the Higher Education Act of 1965) in the United States and its territories that grant associate, baccalaureate, or graduate degrees in the disciplines listed in section C, below, are invited to submit proposals.
2. An institution may submit one proposal from each constituent college or school that awards eligible degrees. (For example, a university with a College of Engineering, a School of Life Sciences, and a College of Arts and Sciences could submit one proposal from each for a total of three. However, within a College of Engineering, if the Department of Electrical Engineering were submitting a proposal, a proposal from the Department of Mechanical Engineering could be submitted only in a subsequent year. The two departments could also submit a proposal jointly.)
3. An institution without constituent schools (for example, a 4-year college or a community college) may submit one proposal each year.
4. An institution that is part of a larger system is considered separate for this purpose if it is geographically separate and has its own chief academic officer.

B. Principal Investigator

The Principal Investigator must be a faculty member currently teaching in one of the S-STEM disciplines who can provide the leadership required to ensure the success of the project. Projects involving more than one department within an institution are eligible, but a single Principal Investigator must accept overall management responsibility. Other members of the S-STEM project management team may be listed as Co-Principal investigators.

C. Scholarship Recipients

S-STEM scholarship recipients will be selected by the awardee institution, but must:

- be citizens of the United States, nationals of the United States (as defined in section 101(a) of the Immigration and Nationality Act), aliens admitted as refugees under section 207 of the Immigration and Nationality Act, or aliens lawfully admitted to the United States for permanent residence;
- be enrolled full time in a program leading to an associate, baccalaureate, or graduate degree in one of the following disciplines. Enrollment must be full-time for each semester or quarter a student receives a scholarship.
 - biological sciences (except medicine and other clinical fields);
 - physical sciences, including physics, chemistry, astronomy, and materials science;

- mathematical sciences;
- computer and information sciences;
- geosciences;
- engineering;
- technology areas associated with the preceding fields (for example, biotechnology, chemical technology, engineering technology, information technology, etc.)
- demonstrate academic potential or ability;
- demonstrate financial need, defined for undergraduate students by the US Department of Education rules for need-based Federal financial aid, or, for graduate students, defined as financial eligibility for Graduate Assistance in Areas of National Need (GANN).

Financial need is defined for undergraduates by the US Department of Education as the Cost of Attendance (COA) for an institution minus the Estimated Family Contribution (EFC) for the student

(see http://www.studentaid.ed.gov/students/publications/student_guide/2004_2005/english/index.htm). The Cost of Attendance, determined by each educational institution, is the total amount it will cost a student to go to school, including tuition and fees; on-campus room and board (or a housing and food allowance for off-campus students); allowances for books, supplies, transportation, loan fees, dependent care, costs related to a disability; and miscellaneous expenses. The Estimated Family Contribution is determined by the Free Application for Federal Student Aid (FAFSA) form and represents the expected family contribution toward the Cost of Attendance (<http://www.fafsa.ed.gov>). It is recommended that the PI consult the campus financial aid office for more information regarding the institutional COA and the calculation of student financial need.

- be part of a natural student cohort that is likely to associate during the scholarship period. Students may be from a single major, or from a group that will take several classes together, or from some other group that the proposal describes. See section V.A.5.k, Special Program Features, below, for more discussion of the rationale for a cohort.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Letters of Intent (optional): Optional Letters of Intent are encouraged and should be prepared and submitted via FastLane by the date indicated above. Note that NSF will not comment on the Synopsis text; please include only a single sentence describing the project in that section. You must indicate the disciplines to be involved in the space for that purpose. NSF will use the Letter of Intent to estimate the number of proposals likely to be submitted and their distribution among fields in order to arrange for proposal review.

Letter of Intent Preparation Instructions:

When submitting a Letter of Intent through FastLane in response to this Program Solicitation please note the conditions outlined below:

- Sponsored Projects Office (SPO) Submission is not required when submitting Letters of Intent
- Identification of the disciplines to be involved is required when submitting Letters of Intent
- Submission of multiple Letters of Intent is allowed

Full Proposal Instructions: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the guidelines specified 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/publications/pub_summ.jsp?ods_key=gpg. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-PUBS (7827) or by e-mail from nsfpubs@nsf.gov.

Full Proposal Content

1. Cover Sheet.

While filling out the cover sheet in FastLane, it is important to choose the program solicitation number indicated on the cover of this document "NSF Scholarships in Science, Technology, Engineering, and Mathematics" from the list of programs in the "NSF Unit Consideration" section. This choice must be specified in order to have access to the DUE Project Data Form, which is required for S-STEM proposals.

An informative title for the proposed Science, Technology, Engineering, and Mathematics Scholarship project must be provided on the appropriate line. Please use the full project title and refrain from using the S-STEM name or acronym, NSF, or the institution's name in the project title.

2. Project Data Form.

A Project Data Form must be completed for 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 appear in the list of forms for the proposal only after you have selected the appropriate Program Solicitation number (indicated on the cover of this document) on the proposal cover sheet and have saved the cover sheet.

3. Project Summary.

Provide a brief (300 words or fewer) description of the S-STEM project including the number of scholarships to be provided, the discipline areas to be served by the scholarship funds, the objectives of the project, and basic information about the student recruitment, selection, support, and career placement services to be provided as part of this S-STEM project.

The project summary MUST address both Merit Review Criteria (Intellectual Merit and Broader Impacts) in separate statements. See Section VI. A., Proposal Review Process, for a statement of the two criteria. NSF will return without review proposals that do not address both criteria in the Project Summary.

4. Table of Contents.

The Table of Contents is system generated and cannot be edited.

5. Project Description.

The Project Description must conform to GPG formatting requirements and must not exceed 15 single-spaced pages. For legibility, 12-point type is preferred. Proposals that exceed the page limit will be returned without review. The Project Description should contain the following information:

a. Results from Prior NSF Support.

Please report on the results from related prior NSF support. If there have been any existing or prior S-STEM (formerly CSEMS) projects at the institution, provide information about them and describe the relationship of this proposed project to the other S-STEM or CSEMS project. See Section V.A.5.k. for more details about information to include about any prior S-STEM awards to an institution.

b. Project Objectives and Plans.

The project should have specific objectives that reflect the goals of the S-STEM program and local needs, as well as specific plans to select students, encourage them to achieve their best academic performance, and enable them to enter the workforce or continue studies in their fields.

c. Significance of Project and Rationale.

The proposal should address how the goals of the S-STEM program (see Program Description, Section II) will be met. In addition, it should include information on the demographics of the departments or programs affected by the scholarships, including number of majors and number of graduates per year, as well as information on overall enrollment and retention within the institution and programs involved. A rationale for the number of scholarships and the scholarship amount requested should also be provided.

d. Activities on Which the Current Project Builds.

S-STEM projects should build on existing student support structures and program elements. Proposals should discuss existing support structures and projects that are relevant to the S-STEM project and describe ways in which the S-STEM project will utilize or enhance the structures. Proposals should describe specific support structures set up for S-STEM students. Also provide information on any prior S-STEM, CSEMS, or other scholarship projects on which the project builds. See Section V.A.5.k. for more details about information to include about prior CSEMS or S-STEM awards to an institution.

e. S-STEM Project Management Plan.

S-STEM projects should be guided by a management plan in which the key personnel, the strategic plan, and project logistics are defined. The roles and responsibilities of the personnel involved should be clear. The Principal Investigator (PI) must be a faculty member in one of the S-STEM disciplines who can provide the leadership needed in order to ensure the success of the project. The PI will have overall responsibility for administering the project and for interacting with NSF. There should be evidence of strong faculty support and participation beyond the Principal Investigator within the disciplines impacted by this project. Financial aid and student support specialists may also be appropriate individuals to include in the management team as Co-Principal Investigators.

Plans should be in place for activities such as advertising and recruitment of students, selection of students, maintenance of S-STEM records, reporting responsibilities, oversight for student support services, and implementing a process by which students who lose S-STEM eligibility will be replaced by new students.

The management plan should indicate how students' eligibility will be determined, the mechanisms by which scholarships for students will be provided, and how scholarship program outcomes will be evaluated and disseminated. It should also identify criteria for retention of students' scholarships from one year to the next.

Proposing institutions may request additional funds of up to 5% of the total scholarship amount for expenses related to program administration. Note that these funds are included in the maximum of \$600,000 for each award. See Section V.A.8, Proposal Preparation Instructions, for a discussion of budget detail.

f. Student Selection Process and Criteria.

The proposal should include a plan for the process by which students will be selected to receive the S-STEM scholarship award. Included in this plan should be a description of the eligibility criteria to be used in selecting scholars. The program requires that the students meet the requirements for citizenship, major, academic potential, and need that are outlined in Section IV.C, Additional Eligibility Information, Scholarship Recipients. Projects should have additional selection criteria that reflect the local program. S-STEM scholars must be able to demonstrate their eligibility in each semester or quarter of S-STEM support.

The selection process for scholarship recipients should include indicators of academic merit and other indicators of likely professional success. Multiple indicators may be appropriate in gauging both academic merit (e.g., grade point average, placement test results) and professionalism (e.g., motivation, ability to manage time and resources, communication skills). Selection criteria should be flexible enough to accommodate applicants who come from diverse backgrounds and with diverse career goals. The program encourages efforts to increase the number of members of underrepresented groups (women, minorities, and persons with disabilities) in STEM fields, but it aims broadly to assist any student who has financial need.

g. S-STEM Student Support Services and Programs.

It is expected that awardee institutions will have or develop support programs and services designed to enhance student learning, confidence, performance, retention to graduation, and career or higher education placement. Examples of student support include:

- Recruitment of students to higher education programs and careers in the S-STEM disciplines;
- Support and mentoring of students by faculty and other professionals;
- Academic support services such as tutoring, study-groups, or supplemental instruction programs;
- Industry experiences or internship opportunities;
- Community building and support among S-STEM scholars within the institution;

- Participation in local or regional professional, industrial or scientific meetings and conferences;
- Access to appropriate technology and technological support personnel; and
- Career counseling and job placement services for S-STEM scholars.

For support services and programs that already exist, there should be a plan to adapt them to meet the specific objectives of the S-STEM project.

Proposing institutions may request additional funds of up to 10% of the total scholarship amount for student support services. Note that these funds are included in the maximum of \$600,000 for each award. See section V.A.8, Proposal Preparation Instructions, for a discussion of budget detail.

h. Quality Educational Programs.

Institutions should provide evidence of the quality of their educational programs, particularly those in the targeted disciplines. Where appropriate, cite external accreditations in the S-STEM disciplines (for example, ABET for engineering).

i. Assessment and Evaluation.

As with all NSF projects, S-STEM projects must have clear and specific plans for assessment and evaluation. This includes not only assessment of student progress but overall evaluation of the S-STEM project. S-STEM projects are required to participate in regular NSF-led data collection activities to track the students. S-STEM projects should have impact on the departments and disciplines involved as well as the institution beyond simple student input and output. These goals must be clearly articulated in the S-STEM proposal. The S-STEM proposal should identify appropriate assessment and evaluation plans as well as plans for programmatic evaluation at the end of the project. The S-STEM program expects the evaluation plan to reflect the simplicity of the project design compared to other educational projects and the limited resources available for evaluation.

j. Dissemination.

The results of successful projects will be of potential interest to other faculty, staff, students, and the community of which the institution is a part, to student aid professionals, as well as others who operate scholarship programs. The proposal should include a plan to report on the project to appropriate audiences.

k. Special Program Features.

There are several considerations related to special features of the S-STEM program that may need to be considered and addressed in S-STEM proposals. These include:

The S-STEM solicitation specifies that a faculty member currently teaching in an S-STEM discipline must serve as the principal investigator for the project. The purpose of this requirement is to ensure that the faculty of the disciplines involved have a commitment to active involvement with the S-STEM scholars. Other faculty must be involved, and their roles described, as appropriate. In addition to the faculty involvement, it is often helpful if a team of individuals, including financial aid and student support specialists, is developed for the S-STEM project.

Experience in the S-STEM program indicates that the most successful scholarship projects involve a group of students who in some way naturally associate, whether as majors in the same department, or sharing classes, or participating together in activities of common interest. Since students in many disciplines are potentially eligible for S-STEM scholarships, the project design should include plans to attract and maintain a cohort of students who hold scholarships. This may be done by limiting the project to students in one major, or in closely related majors, but other means may be proposed.

S-STEM projects should provide student support structures that help the scholarship recipients succeed as students and, later, as working professionals. Ideally, S-STEM scholars are part of a cohort that is managed and supported as part of an active learning community. This can involve existing support structures or new support mechanisms to be developed by the S-STEM project. S-STEM proposals should describe these support structures and explain, particularly in the case of existing support structures, how the S-STEM students will be involved with the support structure or activity.

S-STEM projects often include enhancements such as seminars, field trips, social activities, student-faculty interaction outside classes, and other enrichment activities. These are valuable parts of programs. Such activities may be required as part of the scholarship program, but the requirements should be structured so that students who have other responsibilities can reasonably participate, and the requirements should be flexible enough to allow reasonable absences.

In addition, some projects may offer research opportunities, tutoring of others, and internships for scholarship recipients. While these activities can enhance the student experience, they must be included as optional components of the S-STEM project. S-STEM scholarships may not be, nor appear to be, payment for services. Since the scholarship often provides funds that allow a student to concentrate on full time studies rather than full time work, opportunities of this kind are valuable components of S-STEM projects as long as they are clearly optional for the student. This limitation on required research does NOT apply for graduate students doing research as part of their thesis work.

Students who receive S-STEM scholarships must be enrolled full time in a program leading to a degree in one of the S-STEM disciplines. Often there are programs at an institution that do not have exactly the same title as an S-STEM discipline, but might be related to or part of the S-STEM discipline. In cases where students are in programs that are not included in the specific S-STEM disciplines, the proposal must clearly document and justify the inclusion of the program in the S-STEM scholarship group. If necessary, S-STEM proposals should address this issue in enough detail so that expert reviewers can see the connection and relevance of the project to the S-STEM disciplines.

Many students may not be eligible for the maximum scholarship of \$10,000 per year, depending on the student's expected family contribution and the amount of the institution's cost of attendance. The proposal budget requires an estimate of both the number of scholarships to be awarded and the total amount of funds that would be required. The proposal should include an explanation of how these estimates were determined. The proposal should include the potential number of students in the proposed cohort (for example, a disciplinary major) and an estimate of the number of these students who might have financial need. It may be helpful to consult with the financial aid office at the institution to determine typical financial need for the proposed cohort of students (or for some larger group of students if information on the smaller cohort is not easily available). While there is flexibility within a project budget after a grant is made, the size of the budget request must be closely related in the proposal to a realistic estimate of student need.

S-STEM scholarships involve full-time students who are financially needy as well as academically talented. NSF has adopted the standard U.S. Department of Education guidelines for determining financial need as well as allowable educational expenses. NSF, however, cannot prescribe the way in which local financial aid offices or departments develop policies or manage their students. Thus, rather than defining a specific number of hours for full time classification, S-STEM provides that students are full-time if classified as full time by their local institution. Similarly, NSF cannot dictate financial aid policy to institutions. While we hope that our broad interpretation of allowable educational expenses will be used to calculate need and funding potential, NSF must rely on local financial aid office policies about management of student aid and scholarship funds. Likewise, each institution determines measures of academic promise for its students. Principal investigators developing S-STEM proposals should talk over these issues with appropriate financial aid offices as well as their discipline faculty in developing policies and criteria that are included in the S-STEM proposal.

Proposals are welcome from all eligible institutions. However, if the institution has received a prior S-STEM (or CSEMS) award, the proposed project must build on the experience from the prior project. Proposal reviewers will want to know quantitative and qualitative outcomes of any current or former project and how the experience has affected plans for the current project. This is especially true when the same or related disciplines are involved, even if there is no overlap in personnel. Proposers may use the NSF web search (http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5257&org=DUE&from=home, see the link "Abstracts of Recent Awards Made Through This Program" at the bottom of the page) to search for prior awards in the S-STEM program, by institution name or state. A brief but detailed discussion of any other project and its relation to the proposed project must be included in the project description.

I. Project Description Content Checklist.

In summary, the proposal should clearly describe the plan for implementing a program with the goals and characteristics outlined in the preceding text. The proposal should include, within the project description (limited to 15 single-spaced pages), the following:

- Results from prior NSF support, with particular emphasis on any prior S-STEM or CSEMS awards made to the institution;
- Statement of the project objectives and plans;
- Discussion of the project's significance, including demographic information and rationale for the number of scholarships and the scholarship amount requested;
- Discussion of activities on which the project builds (particularly connections to any existing S-STEM or CSEMS award at the institution);
- Description of the management plan, including discussion of the role of faculty in the disciplines in the operation of the project;
- Outline of the student selection process and criteria;
- Description of the student support services and programs, and their impact on students;
- Evidence of the quality of the institution's educational programs; and
- Plans for project assessment and evaluation.
- Plans for dissemination

6. **References Cited.** If applicable.

7. Biographical Sketches.

Include a 2-page biographical sketch for the Principal Investigator and each listed Co-Principal Investigator and/or Senior Personnel.

8. Budget, Budget Justification, and Allowable Costs:

Provide a budget for each year of support requested. The maximum S-STEM request is normally not to exceed \$600,000 in total. Annual budgets are limited to \$225,000. The annual and cumulative limits, which apply separately, include all funds (scholarships, administrative costs, and student support costs).

- No indirect costs are allowed.
- Allocations for scholarships should be indicated in Section F.1 Participant Support - "Stipends" of the Fastlane budget form. Scholarships may be requested for up to \$10,000 per student per year. Because many students may not be eligible for the maximum scholarship amount of \$10,000, the proposal should explain how the number of scholarships requested and the total amount of scholarship funds requested were determined.
- In addition, up to 15% of the total scholarship amount shown on the Participant Support - "Stipends" budget line may be requested for expenses related to program administration (up to 5%) and student support services (up to 10%). The request for funds under this 15% allowance must be assigned to the appropriate NSF budget categories on the NSF budget form and must be explained on the budget explanation page. Refer to the GPG instructions for appropriate categories. Do not enter any costs on line G.6. Other Direct Costs - "Other" or F.4. Participant Support Costs - "Other." The limits for administrative and student support costs apply to the cumulative budget; projects may propose to distribute these costs unevenly among the annual budgets.
- Faculty salary requests must be accompanied by an appropriate indication of the fraction of academic or summer months to be paid by the grant. If no salary is requested from the grant, then the fraction of NSF-funded academic and summer months should be listed on the budget form as zero.

9. Current and Pending Support.

Provide a list of Current and Pending Support for the Principal Investigator and each Co-Principal Investigator. All investigators should list the S-STEM proposal as a pending project.

10. Facilities, Equipment, and Other Resources.

See GPG Section II. D.9.

11. Supplementary Documentation.

Evidence of the high quality of academic programs or excellence in student recruitment, support, or career placement may be included as supplementary documentation. Scanned copies of letters of institutional support and letters documenting partnership commitments should also be included as supplementary documentation. Do not send paper copies to NSF.

Proposers are reminded to identify the program solicitation number (NSF 09-567) in the program solicitation block on the NSF Cover Sheet For Proposal to the National Science Foundation. 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 under this solicitation.

Indirect Cost (F&A) Limitations: No indirect costs are allowed.

Other Budgetary Limitations: Additional funds up to 15% of the total scholarship amount may be requested for expenses related to program administration (up to 5%) and student services (up to 10%), all of which must be listed under the appropriate NSF budget categories. See section V.A.8 above for details. Do not enter items in either categories G.6. or F.4., "Other."

C. Due Dates

- **Letter of Intent Due Date(s) (optional)** (due by 5 p.m. proposer's local time):

August 11, 2009

(for the September 14, 2009 competition)

July 14, 2010

(for the August 12, 2010, competition)

July 13, 2011

(for the August 11, 2011, competition)

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

September 14, 2009

August 12, 2010

August 11, 2011

D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this program solicitation through use of the NSF FastLane system. Detailed instructions regarding the technical aspects of 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. The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this funding opportunity.

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. Further instructions regarding this process are available on the FastLane Website at: <https://www.fastlane.nsf.gov/fastlane.jsp>.

VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

Proposals received by NSF are assigned to the appropriate NSF program where they will be reviewed if they meet NSF proposal preparation requirements. All proposals are carefully reviewed by a scientist, engineer, or educator serving as an NSF Program Officer, and usually by three to ten other persons outside NSF who are experts in the particular fields represented by the proposal. These reviewers are selected by Program Officers charged with the oversight of the review process. Proposers are invited to suggest names of persons they believe are especially well qualified to review the proposal and/or persons they would prefer not review the proposal. These suggestions may serve as one source in the reviewer selection process at the Program Officer's discretion. Submission of such names, however, is optional. Care is taken to ensure that reviewers have no conflicts of interest with the proposal.

A. NSF Merit Review Criteria

All NSF proposals are evaluated through use of the two National Science Board (NSB)-approved merit review criteria: intellectual merit and the broader impacts of the proposed effort. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two NSB-approved 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 judgements.

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, original, or potentially transformative 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?

Examples illustrating activities likely to demonstrate broader impacts are available electronically on the NSF website at: <http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf>.

Mentoring activities provided to postdoctoral researchers supported on the project, as described in a one-page supplementary document, will be evaluated under the Broader Impacts criterion.

NSF staff also 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:

Reviewers will be asked to consider the above two merit review criteria with emphasis placed on the S-STEM program components (see "Program Description"). Those elements include:

- o Student-support infrastructure for the successful graduation of scholarship recipients,
- o Management and administration plan that is effective and clearly articulated,
- o Evidence of faculty participation and support from the appropriate financial aid and student services personnel,
- o Justification of the number and amount of scholarships requested based on current student demographics, and
- o Educational program of high quality.

B. Review and Selection Process

Proposals submitted in response to this program solicitation will be reviewed by 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.

After scientific, technical and programmatic review and consideration of appropriate factors, the NSF Program Officer recommends to the cognizant Division Director whether the proposal should be declined or recommended for award. 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 deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director accepts the Program Officer's 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 Officer. In addition, the proposer will receive an explanation of the decision to award or decline funding.

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 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.B. 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 (GC-1); * or Research Terms and Conditions * and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreements also are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC) and the applicable Programmatic Terms and Conditions. NSF awards are electronically signed by an NSF Grants and Agreements Officer and transmitted electronically to the organization via e-mail.

*These documents may be accessed electronically on NSF's Website at http://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov.

More comprehensive information on NSF Award Conditions and other important information on the administration of NSF awards is contained in the *NSF Award & Administration Guide (AAG) Chapter II*, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the Principal Investigator must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period. (Some programs or awards require more frequent project reports). Within 90 days after expiration of a grant, the PI also is required to submit a final project report.

Failure to provide the required annual or final project reports will delay NSF review and processing of any future funding increments as well as any pending proposals for that PI. 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. Such reports provide information on activities and findings, project participants (individual and organizational) 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. Submission of the report via FastLane constitutes certification by the PI that the contents of the report are accurate and complete.

In addition, in response to the need for NSF to report on the operation and success of the S-STEM program, a web-based data collection site has been developed for the purpose of collecting information about program participants.

Each S-STEM PI is required to complete information about each S-STEM scholar and subsequently update the information reported through the web site during each semester of continued S-STEM support. Instructions will be provided shortly after the award to successful grantees. This information must be provided within 30 days of the beginning of each semester or quarter and includes the following information about each S-STEM scholar: name, permanent address, school address, major, career goals, race/ethnicity (student's option to report), disabilities (student's option to report), gender, date of birth, grade point average, participation in an internship (in an S-STEM-related area), and student employment (part-time or full-time; not necessarily in an S-STEM-related area). Any information that would permit identification of individual responses will be held in strict confidence.

An external evaluator has been retained to assist in the program evaluation process. This evaluator will use the demographic data and student contact information to conduct formative and summative evaluation of the S-STEM program which includes post-graduation and post-employment assessment. These data are not used to evaluate individual projects.

VIII. AGENCY CONTACTS

General inquiries regarding this program should be made to:

- Duncan E. McBride, Section Head, Division of Undergraduate Education, 835 N, telephone: (703) 292-4630, email: dmcbride@nsf.gov
- Lesia L. Crumpton-Young, Program Director, Division of Undergraduate Education, 835 N, telephone: (703) 292-4629, email: lcrumpto@nsf.gov
- Bert E. Holmes, Program Director, Division of Undergraduate Education, 835 N, telephone: (703) 292-5128, email: bholmes@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@nsf.gov.
- Antionette T. Allen, Computer Specialist, Division of Undergraduate Education, 835 N, telephone: (703) 292-4646, email: aallen@nsf.gov

IX. OTHER INFORMATION

The NSF Website provides the most comprehensive source of information on NSF Directorates (including contact information), programs and funding opportunities. Use of this Website by potential proposers is strongly encouraged. In addition, National Science Foundation Update is a free e-mail subscription service designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming

NSF Regional Grants Conferences. Subscribers are informed through e-mail when new publications are issued that match their identified interests. Users can subscribe to this service by clicking the "Get NSF Updates by Email" link on the [NSF web site](#).

Grants.gov provides an additional electronic capability to search for Federal government-wide grant opportunities. NSF funding opportunities may be accessed via this new mechanism. Further information on Grants.gov may be obtained at <http://www.grants.gov>.

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) is an independent Federal agency created by the National Science Foundation Act of 1950, as amended (42 USC 1861-75). The Act states the purpose of the NSF is "to promote the progress of science; [and] to advance the national health, prosperity, and welfare by supporting research and education in all fields of science and engineering."

NSF funds research and education in most fields of science and engineering. It does this through grants and cooperative agreements to more than 2,000 colleges, universities, K-12 school systems, businesses, informal science organizations and other research organizations throughout the US. The Foundation accounts for about one-fourth of Federal support to academic institutions for basic research.

NSF receives approximately 40,000 proposals each year for research, education and training projects, of which approximately 11,000 are funded. In addition, the Foundation receives several thousand applications for graduate and postdoctoral fellowships. The agency operates no laboratories itself but does support National Research Centers, user facilities, certain oceanographic vessels and Antarctic research stations. The Foundation also supports cooperative research between universities and industry, US participation in international scientific and engineering efforts, and educational activities at every academic level.

Facilitation Awards for Scientists and Engineers with Disabilities provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See Grant Proposal Guide Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090 and (800) 281-8749, FIRS at (800) 877-8339.

The National Science Foundation Information Center may be reached at (703) 292-5111.

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: nsfpubs@nsf.gov
 - or telephone: (703) 292-7827
- **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; and 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 proposer 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 or other entities needing information regarding applicants or nominees as part of a joint application review process, or in order to coordinate programs or policy; 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," 69 Federal Register 26410 (May 12, 2004), and NSF-51, "Reviewer/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004). 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 Office of Management and Budget (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 the burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to:

Suzanne H. Plimpton
Reports Clearance Officer
Division of Administrative Services
National Science Foundation
Arlington, VA 22230

[Policies and Important Links](#) | [Privacy](#) | [FOIA](#) | [Help](#) | [Contact NSF](#) | [Contact Web Master](#) | [SiteMap](#)



The National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia 22230, USA
Tel: (703) 292-5111, FIRS: (800) 877-8339 | TDD: (800) 281-8749

Last Updated:
11/07/06
[Text Only](#)