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

Webinar for PIs
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Today's Topics

- Program Overview
- Eligibility
  - Institution
  - PI
  - Scholarship Recipients
- Proposal Sections
- Questions and Answers

For full details, refer to the solicitation:

NSF-12-529

http://www.nsf.gov/pubs/2012/nsf12529/nsf12529.htm

PROGRAM OVERVIEW

Overview

The **S-STEM program** makes grants

to **institutions of higher education**

to **support scholarships**

for **academically talented students demonstrating financial need**

to **enable students to enter the STEM workforce or STEM graduate school following completion of an associate, baccalaureate, or graduate-level degree in science, technology, engineering or mathematics disciplines.**

Origin

The program was established by the National Science Foundation (NSF) in accordance with the American Competitiveness and Workforce Improvement Act of 1998 and modified in 2004, reflecting the national need to increase substantially the number of American scientists and engineers.

Congress created the program, and some aspects are specified in the legislation.

Program Goals

- Improved educational opportunities for students;
- Increased retention of students to degree achievement;
- Improved student support programs at institutions of higher education; and
- Increased numbers of well-educated and skilled employees in technical areas of national need.

Funding Sources

The program uses funds raised from H-1B visa fees, paid by business and industry, to educate talented US students who have financial need.

Disciplines (Eligible Degrees)

- 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.)

ELIGIBILITY

Eligibility - Institution

- An institution may submit one proposal from each constituent college or school that awards eligible degrees.
- An institution without constituent schools (for example, a 4-year college or a community college) may submit one proposal each year.
- 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.

Eligibility - Institution

Example 1:

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.

Example 2:

Within a College of Engineering, the Department of Electrical Engineering and the Department of Mechanical Engineering could not each submit a proposal. Both proposals would be returned without review.

Example 3:

Two departments within a College of Engineering could submit a single proposal jointly.

Eligibility - PI

The Principal Investigator (PI) must be a faculty member currently teaching in one of the S-STEM disciplines listed in the solicitation.

- 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.)

Eligibility – Scholarship Recipients

- Citizens of the US, nationals of the US [1], aliens admitted as refugees to the US [2], or aliens lawfully admitted to the US for permanent residence;
- Be enrolled full time in a program leading to an associate, baccalaureate, or graduate degree in one of the listed disciplines[3] for each term for which a student receives a scholarship.
- Demonstrate academic ability or potential;
- Demonstrate financial need; [4] and
- Be part of a natural student cohort that is likely to associate during the scholarship period. [5]

[1]As defined in section 101(a) of the Immigration and Nationality Act.

[2]Under section 207 of the Immigration and Nationality Act.

[3]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.).

[4]Defined for undergraduate students by the US Department of Education rules for need-based Federal financial aid Free Application for Federal Student Aid (FAFSA), or, for graduate students, defined as financial eligibility for Graduate Assistance in Areas of National Need (GAANN).

[5]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.

Scholarships

- **Students may use the scholarships to cover tuition and other costs of attendance as defined by the institution.**
- **Maximum scholarship amount: $10,000 per academic year.**

PROPOSAL SECTIONS

Project Description Contents

- Results from Prior NSF Support
- Project Objectives and Plans
- Significance of Project and Rationale
- Activities on Which the Current Project Builds
- S-STEM Project Management Plan
- Student Selection Process and Criteria
- S-STEM Student Support Services and Programs
- Quality Educational Programs
- Assessment and Evaluation
- Dissemination

Results from Prior NSF Support

- If the institution has received a prior S-STEM (or CSEMS) award, the proposed project must build on the experience from the prior project.
- Proposers may use the NSF web search to search for prior awards in the S-STEM program, by institution name or state.
- 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 section must include all applicable items (a through f) listed in the Grant Proposal Guide, Chapter II, Section C.2.d.iii.

Project Objectives and Plans

The project should have:

- **Specific objectives that reflect the goals of the S-STEM program and local needs; and**
- **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.**

Significance and Rationale

The proposal should address how the goals of the S-STEM program will be met.

The proposal should include:

- **Information on the demographics of the departments or programs affected by the scholarships including:**
  - **Number of majors per year**
  - **Number of graduates per year**
  - **Information on overall enrollment and retention within the institution and programs involved**
- **A rationale for the number of scholarships and the scholarship amount requested**

Activities on Which the Current Project Builds

S-STEM projects should build on existing student support structures and program elements.

Proposals should:

- **Discuss such services that are relevant to the S-STEM project**
- **Describe ways in which the S-STEM project will use or enhance the structures**
- **Describe new support structures set up for S-STEM students**

Project Management Plan - Personnel

- The roles and responsibilities of the personnel involved should be clear.
- The PI will have overall responsibility for administering the project and for interacting with NSF.
- The project must involve faculty in addition to the PI and may involve staff from offices of student support, financial aid, and admissions.
- The proposal must describe specific roles of each person in the project.

Project Management Plan - Activities

Plans should be described for activities such as:

- **Recruitment and selection of students**
- **Maintenance of S-STEM records**
- **Reporting responsibilities**
- **Oversight for student support services**
- **Implementing a process by which students who lose S-STEM eligibility will be replaced by new students**

Student Selection Process and Criteria

- Projects should have additional selection criteria that reflect the local program.
- The selection process for scholarship recipients should include indicators of academic merit and other indicators of likely professional success.
- Selection criteria should be flexible enough to accommodate applicants who come from diverse backgrounds and with diverse career goals.
- The program encourages but does not require efforts to increase the number of members of underrepresented groups in STEM fields; its broad aim is to assist any student who meets eligibility requirements.
- The proposal 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.

S-STEM Student Support Services and Programs

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, internship opportunities, and research opportunities**
- **Community building and support among S-STEM scholars within the institution**
- **Participation in local or regional professional, industrial or scientific meetings and conferences**
- **Career counseling and job placement services for S-STEM scholars**

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 (e.g., ABET for engineering).**

Assessment and Evaluation

- S-STEM projects must have clear and specific plans for assessment and evaluation.
- The evaluator must be external to the project, but not necessarily to the institution.
- S-STEM projects are required to participate in regular NSF-led data collection activities to track the students.
- The S-STEM proposal should identify appropriate assessment and evaluation plans as well as plans for programmatic evaluation at the end of the project.

Dissemination

- The proposal should include a plan to report on the project to appropriate audiences.
- 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, as well as to student aid professionals and others who operate scholarship programs.

BUDGET

- The maximum S-STEM request is normally not to exceed $600,000 direct cost in total.
- Annual budgets are limited to $225,000 direct cost.
- The proposal should include a formula to indicate how the final total budget was calculated.
- Up to 5% of scholarship funds are allowed to grantee institutions for management and administrative costs; up to 10 percent of scholarship funds are allowed for student-support costs. This 15% will bear indirect costs (ICR). NOTE: NO ICR allowed on Participant Support.

Outcomes

Example Indicators of Success for Scholars

- **Graduation with time to degree being less than for a typical STEM student in the program/institution**
- **Pathways into the workforce or advanced degrees**
- **The potential for a worthwhile career in the local community**

Questions to Consider

- **What is the total number of scholars graduated?**
- **What will be the legacy for the faculty and academic department(s)?**
- **How will program elements be sustained after the funding period?**
- **Is there a clear plan to support scholars who may not graduate prior to the end of NSF funding?**
- **What is the evidence of the effectiveness of the student support services/efforts?**

Graduate Students

- The program includes support for graduate students.
- Some projects may be exclusively for graduate students.
- Support systems and mentoring likely to be different than for undergraduates.
- Research should be required for graduate students as part of project.

Characteristics of a Strong Project

- **It is not sufficient to summarize the role of individual faculty.**
  - **Each proposal should include a detailed management plan that includes project logistics, a timeline and metrics used to demonstrate progress.**
- **The project evaluation is modest, but should include the collection of empirical evidence.**
  - **What will project managers learn?**
  - **What will NSF and others learn?**
- **The evaluator must be external to the project, but not necessarily to the institution.**
- **The Project Description (and references) should show clear evidence of the research/evidence base upon which the project will build.**

QUESTIONS?

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Full Proposal Deadline: August 12, 2014