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

PROGRAM SOLICITATION
NSF 20-526

REPLACES DOCUMENT(S):
NSF 17-527

National Science Foundation

Directorate for Education and Human Resources
Division of Undergraduate Education

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

April 22, 2020

Last Wednesday in March, Annually Thereafter

IMPORTANT INFORMATION AND REVISION NOTES

1. The S-STEM program team will host webinars after the release of this solicitation. In the webinars, key features and expectations of the S-STEM program will be discussed. Information regarding the webinars will be posted to the S-STEM program webpage: https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5257.
2. The solicitation explicitly notes that not all STEM degrees are eligible for the S-STEM program. Eligible degrees for the S-STEM program have been more clearly defined and can be found in section "SUMMARY OF PROGRAM REQUIREMENTS/General Information/Synopsis of Program."
3. Principal Investigators (PIs) interested in submitting a request for supplemental funding should (a) contact their cognizant program officer before submission to discuss the proposal idea, and (b) follow the guidelines for supplemental funding requests for existing awards in the PAPPG.
4. The requirement that students be enrolled full-time has been eliminated. Students must now be enrolled at least half-time as defined by the institution.
5. All proposals must include specific tabular information described in section V.A.11.
6. The requirement of a third-year review only applies to Track 3 projects.
7. All projects are expected to contribute to the STEM education knowledge base.

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) (NSF 19-1), which is effective for proposals submitted, or due, on or after February 25, 2019.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

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

Synopsis of Program:

A well-educated science, technology, engineering, and mathematics (STEM) workforce is a significant contributor to maintaining the competitiveness of the U.S. in the global economy. The National Science Foundation (NSF) Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM) program addresses the need for a high quality STEM workforce in STEM disciplines supported by the program and for the increased success of low-income academically talented students with demonstrated financial need who are pursuing associate, baccalaureate, or graduate degrees in science, technology, engineering, and mathematics (STEM) [6], [16].

Recognizing that financial aid alone cannot increase retention and graduation in STEM, the program provides awards to Institutions of Higher Education (IHEs) to fund scholarships and to advance the adaptation, implementation, and study of effective evidence-based curricular and co-curricular activities that support recruitment, retention, transfer (if appropriate), student success, academic/career pathways, and graduation in STEM. The S-STEM program encourages collaborations among different types of participating groups, including but not limited to partnerships among different types of institutions; collaborations of STEM faculty and institutional,

educational, and social science researchers; and partnerships among institutions of higher education and business, industry, local community organizations, national labs, or other federal or state government organizations, if appropriate.

The program seeks to 1) increase the number of low-income academically talented students with demonstrated financial need obtaining degrees in S-STEM eligible disciplines and entering the workforce or graduate programs in STEM; 2) improve the education of future scientists, engineers, and technicians, with a focus on low-income academically talented students with demonstrated financial need; and 3) generate knowledge to advance understanding of how interventions or evidence-based curricular and co-curricular activities affect the success, retention, transfer, academic/career pathways, and graduation of low-income students in STEM.

Scholars must be low-income, academically talented students with unmet financial need who are enrolled in an associate, baccalaureate or graduate degree program, with a major in an S-STEM eligible discipline.

S-STEM Eligible Degree Programs
Associate of Arts, Associate of Science, and Associate of Applied Science
Bachelor of Arts, Bachelor of Science, and Bachelor of Applied Science
Master of Arts and Master of Science
Doctoral

S-STEM Eligible Disciplines
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 fields associated with the disciplines above (e.g. biotechnology, chemical technology, engineering technology, information technology

Note that programs in business schools that lead to Bachelor of Arts or Science in Business Administration degrees (BABA/BSBA) are not eligible for S-STEM funding. Proposers are strongly encouraged to contact Program Officers before submitting a proposal if they have questions concerning degree eligibility.

The S-STEM program particularly encourages proposals from 2-year institutions, Minority Serving Institutions (MSIs), Historically Black Colleges and Universities (HBCUs), Hispanic Serving Institutions (HSIs), tribal colleges and universities, and urban and rural public institutions.

Cognizant Program Officer(s):

Please note that the following information is current at the time of publishing. See program website for any updates to the points of contact.

- Keith Sverdrup, telephone: (703) 292-4671, email: ksverdru@nsf.gov
- Michael J. Ferrara, telephone: (703) 292-2635, email: mferrara@nsf.gov
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- Jennifer E. Lewis, telephone: (703) 292-2938, email: jenlewis@nsf.gov
- Dawn M. Rickey, telephone: (703) 292-4674, email: drickey@nsf.gov
- John Jackman, telephone: (703) 292-4816, email: jjackman@nsf.gov
- Thomas B. Higgins, telephone: (703) 292-2937, email: thhiggin@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:

60 to 80

Anticipated Funding Amount:

$70,000,000 to $95,000,000

$70,000,000 to $95,000,000 annually, for new and continuing awards. The program supports three types of projects. Awards for Track 1 (Institutional Capacity Building) projects may not exceed $650,000. Awards for Track 2 (Design and Development: Single Institution) projects may not exceed $1.0 million. Awards for Track 3 (Design and Development: Multi-Institutional Consortia) projects may not exceed $5.0 million. In all cases, the totals are inclusive of direct and indirect costs.

For Collaborative Proposals (see PAPPG Chapter II.D.3), the **combined** budgets of the collaborating organizations should conform to the budgetary limits specified in this solicitation.

Eligibility Information

Who May Submit Proposals:

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, its territories, or possessions, or the Commonwealth of Puerto Rico that grant associate, baccalaureate, or graduate degrees in the S-STEM eligible degree programs and disciplines listed in "Synopsis of Program" and Section IV.B. are invited to submit proposals.

Who May Serve as PI:

For Track 1 (Institutional Capacity Building) and Track 2 (Design and Development: Single Institution) projects, the Principal Investigator must be a faculty member currently teaching in an S-STEM eligible discipline 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 and leadership responsibility. Other members of the S-STEM senior project leadership and management team may be listed as Co-Principal Investigators.

For Track 3 (Design and Development: Multi-Institutional Consortia) projects, the Principal Investigator must be a faculty member currently teaching in an S-STEM eligible discipline or an institutional, educational, or social science researcher who can provide the leadership required to ensure the success of the project. A consortium project must have a Principal Investigator who accepts overall management and leadership responsibility. Other members of the S-STEM senior project leadership and management team may be listed as Co-Principal Investigators or PIs on collaborative research proposals.

Limit on Number of Proposals per Organization:

An Institution may submit one proposal (either as a single institution or as subawardee or a member of a Collaborative Research project) from each constituent school or college that awards degrees in an S-STEM eligible discipline. See Additional Eligibility Information below for more details (see IV. Eligibility Information).

Limit on Number of Proposals per PI or Co-PI:

There are no restrictions or limits.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Not required
- **Preliminary Proposal Submission:** Not required
- **Full Proposals:**
  - Full Proposals submitted via FastLane: *NSF Proposal and Award Policies and Procedures Guide* (PAPPG) guidelines apply. The complete text of the PAPPG is available electronically on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg.
  - Full Proposals submitted via Research.gov: *NSF Proposal and Award Policies and Procedures Guide* (PAPPG) guidelines apply. The complete text of the PAPPG is available electronically on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?

ods_key=pappg.
- Full Proposals submitted via Grants.gov: *NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov* guidelines apply (Note: The *NSF Grants.gov Application Guide* is available on the Grants.gov website and on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide).

B. Budgetary Information

- **Cost Sharing Requirements:**

  Inclusion of voluntary committed cost sharing is prohibited.

- **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

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

  April 22, 2020

  Last Wednesday in March, Annually Thereafter

Proposal Review Information Criteria

Merit Review Criteria:

National Science Board approved criteria apply.

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/Research.gov/Grants.gov Requirements
VI. **NSF Proposal Processing and Review Procedures**
  A. Merit Review Principles and 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

To meet the national need for a globally competitive STEM workforce, the National Science Foundation (NSF) established the Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM) program in accordance with the American Competitiveness and Workforce Improvement Act of 1998 (P.L. 105-227 and as reauthorized by P.L. 105-313 in 2000 and P.L. 108-447 in 2004). In response to the requirement in the H-1B Visa Reform Act of 2004, Public Law 108-447, Division J, Title IV, Subtitle B, Section 429(d), NSF published the list of eligible programs of study included in the scholarship program established by the Act. Eligible programs of study are the biological science (except medicine and other clinical fields), physical sciences, mathematical sciences, computer and information sciences, the geosciences, and engineering, as well as technology areas associated with the preceding fields (FR Doc. 05-2602). The program seeks to increase the success of low-income academically talented students with demonstrated financial need who are pursuing associate, baccalaureate, or graduate degrees in science, technology, engineering, and mathematics (STEM) [3], [4], [7], [10].

The program addresses the challenges facing low-income academically talented students with demonstrated financial need by providing a wide range of IHEs with funds to support scholarships to students from a diverse student population seeking degrees in S-STEM eligible disciplines. Funds also are to enable IHEs to establish a coherent ecosystem of effective evidence-based practices (curricular and co-curricular activities) and to investigate the effects of those practices and other factors on retention, student success, academic/career pathways and degree attainment, including transfer, and entry into the workforce or graduate programs in STEM [1], [8], [9], [11], [12], [14], [15], [17]. See Section IV.B for additional details.

Prospective Principal Investigators (PIs) whose primary goal is to develop, test and evaluate new resources for STEM learning and teaching should submit proposals to the Improving Undergraduate STEM Education (IUSE: EHR) or the Innovations in Graduate Education (IGE) programs. Likewise, PIs looking to conduct foundational research on factors associated with student success or degree attainment, academic or career pathways, workforce development, or the impact of financial aid on student outcomes should submit proposals to the EHR Core Research (ECR) program.

II. PROGRAM DESCRIPTION

A. Overview

The S-STEM program provides Institutions of Higher Education (IHEs) with funds for scholarships to encourage and enable low-income academically talented students with demonstrated financial need to enter the workforce or graduate study following completion of associate, baccalaureate, or graduate degrees in S-STEM eligible disciplines. Recognizing that scholarships alone cannot address low retention and graduation rates in STEM, the program also supports the implementation and testing of existing effective evidence-based curricular and co-curricular activities (e.g., evidence-based practices; professional and workforce development activities) featuring: (1) close involvement of faculty in S-STEM eligible disciplines, (2) student mentoring, (3) provisions of academic and student support, (4) and adaptation of existing high-quality evidence-based practices.

A project is expected to contribute to the STEM education knowledge base. The complexity, scope, and size of those contribution(s) should be a) commensurate with the experience and expertise of the institution in this area, b) aligned with the needs identified in an institutional scan (where greater understanding of an issue would be beneficial), c) aligned with the interests of the leadership and management team, and d) appropriate for the budgeted resources specified for this area of the project.

Successful projects must include involvement of the Offices of Financial Aid, Student Services, and Institutional Research [2], [5], [13], [18], [19].

Proposals with a strong focus on workforce development are encouraged to partner with business, industry, local community organizations, national labs, or other federal or state government organizations. Proposals with a strong focus on the transfer or advancement of students from one educational level to another should collaborate with appropriate institutional partners (for example proposals focused on the transfer of students from 2-year institutions to 4-year institutions should include 2-year institutions and 4-year institutions or proposals focusing on the advancement of undergraduate students to graduate programs should include institutions with undergraduate programs and institutions with graduate programs).

Proposals should include a literature review that establishes the basis for the proposed project activities along with a description of how the project plans to generate knowledge about student success and degree attainment in STEM. Project activities associated with knowledge generation should be informed by the Common Guidelines for Education Research and Development (https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf13126).

Formative evaluation should be used to improve local implementation and outcomes of financial support and academic and student supports. Summative evaluation should assess project outcomes and accomplishments and document lessons learned for accountability purposes.

B. Program Goals

The goals of the S-STEM program are:

1. To increase the recruitment, retention, student success, and graduation (including student transfer) of low-income academically talented students with demonstrated financial need who are pursuing associate, baccalaureate, and graduate degrees in S-STEM eligible disciplines, and enter the STEM workforce or graduate programs in STEM.
2. To adapt, implement, and study models, effective evidence-based practices, and/or strategies that contribute to understanding how factors or existing high-quality evidence-based practices affect recruitment, retention, student success, academic/career pathways, and/or degree attainment (including student transfer) in STEM of low-income academically talented students with demonstrated financial need.
3. To contribute to the implementation and sustainability of effective evidence-based curricular and co-curricular activities (e.g., evidence-based practices; professional and workforce development activities) for low-income academically talented students with demonstrated financial need, pursuing undergraduate or graduate education, and entry into the workforce or graduate programs in STEM.

IHEs are expected to establish selection criteria for scholarships. To receive scholarships, students must be low-income, academically talented, and have unmet financial need. They must be U.S. citizens, permanent residents, nationals, or refugees. See Section IV.B. Scholarship Recipients for additional details.

IHEs are expected to develop and maintain student cohorts and provide S-STEM Scholars with faculty mentors. It is expected that scholarship recipients will achieve at least one of the following outcomes by the end of the scholarship award period:

- Attain an associate, baccalaureate, or graduate degree in an S-STEM eligible discipline and enter the workforce or a graduate program in STEM;

Transfer from an associate degree program to a baccalaureate degree program or advance from an undergraduate program to a graduate program in an S-STEM eligible discipline: or
- Successfully overcome one or more of an institution's self-identified attrition points, which have been described in the institution's proposal.

C. Program Tracks

For all tracks, proposers are encouraged to utilize data analytics to examine patterns in institutional student data that describe and predict the successful completion of student academic and career paths.

Track 1 (Institutional Capacity Building)

Track 1 projects seek to increase the participation of institutions that have limited experience with designing and conducting activities, as described in the description of the S-STEM Design and Development projects. Track 1 provides funds to establish new collaborative partnerships and infrastructure that support projects with these types of activities: (1) to provide scholarships to low-income academically talented students with demonstrated financial need, (2) to advance the adaptation, implementation and understanding of evidence-based academic and student support activities for NSF S-STEM Scholars and other students pursuing STEM degrees, (3) to increase retention, student success and graduation in STEM, and (4) to test strategies for systematically exploring student academic and career pathways in STEM in ways that are congruent with the context of the institution. Proposers are encouraged to work with Offices of Institutional Research or responsible parties or to contact researchers whose interests are in understanding undergraduate/graduate STEM education or workforce development. Projects should generate knowledge about factors and/or activities associated with student success and degree attainment.

IHEs eligible to submit proposals to Track 1 are institutions that have not had or do not currently have awards funded by the S-STEM program or the STEM Talent Expansion (STEP) program.

A Track 1 project leadership and management team must be led by a PI who is a STEM faculty member currently teaching in one of the S-STEM eligible disciplines. The leadership and management team should also include a STEM administrator and an institutional, educational, or social science researcher who studies STEM higher education.

Track 1 proposals may request up to $650,000 for 5 years. At least 60% of the total amount requested must be requested for scholarships and entered on line F.1. in the budget. In addition, funds should be requested to support the adaptation and implementation of existing high quality evidence-based academic and student support activities; the investigation of factors or evidence-based academic and student support activities to determine their effectiveness in recruiting, retaining, and graduating students in STEM; and the management and evaluation of the project.

Track 2 (Design and Development: Single Institution)

Track 2 projects seek to leverage S-STEM funds with institutional efforts and infrastructure to increase and understand recruitment, retention, student success, transfer, if appropriate, academic/career pathways, and degree attainment in STEM, with emphasis on low-income academically talented students with demonstrated financial need. Track 2 are expected to:

- Establish scholarship programs that provide strong academic and student support (e.g., adaptation and implementation of existing high quality evidence-based practices; professional and workforce development activities) to increase student success and degree attainment (including student transfer, if appropriate);
- Increase retention, student success, transfer (if appropriate), and graduation in STEM and the quality of the STEM workforce;
- Have strong STEM faculty commitment and involvement;
- Adapt, implement, and study effective evidence-based curricular and co-curricular activities and professional development that are tailored to students, STEM faculty, and different types of institutional contexts;
- Focus on cognitive or non-cognitive aspects of student experiences and success (such as research experiences, internships, participation in student cohorts, the mentor/mentee relationship; self-efficacy, identity); and
- Advance adaptation, implementation, knowledge generation, and understanding of how high quality evidence-based practices and strategies impact student outcomes.

Track 2 single Institution projects are focused on well-documented institutional needs or concerns. The program strongly encourages proposals to build on completed needs analyses or institutional self-studies. This type of project must be led by a PI who is a STEM faculty member currently teaching in one of the S-STEM eligible disciplines and who is a member of the leadership and management team. The leadership and management team should also include a STEM administrator and an institutional, educational, or social science researcher.

Proposals for Track 2 may request up to $1.0 million for 5 years. At least 60% of the total amount requested must be requested for scholarships and entered on line F.1. in the budget. In addition, funds should be requested to support the adaptation and implementation of existing high-quality evidence-based academic and student support activities; the investigation of factors or evidence-based academic and student support activities to determine their effectiveness in recruiting, retaining, and graduating students in STEM; and the management and evaluation of the project.

Proposals may also include a focus on student transfer.

Track 3 (Design and Development: Multi-Institutional Consortia)

Track 3 multi-institutional projects seek to leverage S-STEM funds with institutional efforts and infrastructure to increase and understand recruitment, retention, student success, transfer, if appropriate, academic/career pathways, and degree attainment in STEM, with emphasis on low-income academically talented students with demonstrated financial need. Track 3 projects are expected to:

- Establish scholarship programs that provide strong academic and student support (e.g., adaptation and implementation of existing high quality evidence-based practices; professional and workforce development activities) to increase student success and degree attainment (including student transfer, if appropriate);
- Increase retention, student success, transfer (if appropriate), and graduation in STEM and the quality of the STEM workforce;
- Have strong STEM faculty commitment and involvement;
- Adapt, implement, and study effective evidence-based curricular and co-curricular activities and professional development that are tailored to students, STEM faculty, and different types of institutional contexts;
- Focus on cognitive or non-cognitive aspects of student experiences and success (such as research experiences, internships, participation in student cohorts, the mentor/mentee relationship; self-efficacy, identity); and
- Advance adaptation, implementation, knowledge generation, and understanding of how high-quality evidence-based practices and strategies impact student outcomes.

Track 3 supports institutional collaborations that focus on a common interest or problem. For example, a collaboration among community colleges and four-year colleges or universities may focus on issues associated with the transfer of students from 2-year institutions to 4-year programs or a consortium of institutions may focus on investigating factors, such as self-efficacy or identity, associated with student success or degree attainment. Multi-Institutional Consortia projects are expected to:

- Adapt, implement, examine, or validate models or factors, effective practices, strategies, that affect recruitment; retention; transfer, if appropriate; student success; academic/career pathways; degree attainment; other important student outcomes: and/or entry into the STEM workforce or graduate programs in STEM, and
- Establish strong technical assistance and processes that support and manage project activities across institutions involved in the collaborative effort.

Multi-Institutional Consortia projects are managed by leadership and management teams composed of faculty members who are currently teaching in an S-STEM eligible discipline(s), STEM administrators, and institutional, educational, or social science researchers. In multi-institutional projects the PI must be either a faculty member currently teaching in one of the S-STEM eligible disciplines or a researcher whose expertise is in institutional, educational, or social science research in higher education.

Proposals with a focus on multi-institutional efforts may request up to $5.0 million for 5 years. At least 60% of the total requested amount must support scholarships to low-income academically talented students with demonstrated financial need. In addition, funds should be requested to support the adaptation and implementation of a common set of existing high quality evidence-based academic and student support activities; the investigation of factors or evidence-based academic and student support activities to determine their effectiveness in recruiting, retaining, and graduating students in STEM; and the management and evaluation of the project.

The level of funding requested should be congruent with the focus, scope, and size of the effort.

Track 3 projects will be reviewed during their third year to determine whether satisfactory progress has been made, with continued funding contingent on the result of the third-year review.

Conferences and Workshops

In addition to the Tracks above the S-STEM program also supports a small number of conferences, workshops, and special projects that generate knowledge to better understand issues in the recruitment, retention, student success, degree attainment, and entry into graduate programs or the STEM workforce by low-income students. Budgets for conferences and workshops are expected to be consistent with the duration of the event and the number of participants, but the cost will normally not exceed a total of $100,000 per event. It is expected that the conferences and workshops will be outcomes-based, and that the final report should contain a statement of the impacts of the event 12-18 months after completion of the event(s). Proposals for conferences and workshops may be submitted at any time during the year, but the proposers should plan on at least 10 months lead time to allow for review and processing of the proposal. Conference proposals must be prepared in accordance with the specific instructions in PAPPG, Chapter II.E.7 and the additional instructions contained in this solicitation. A prospective PI is encouraged to contact an S-STEM program officer to discuss the conference or workshop prior to submitting a proposal.

Supplementary Funding

S-STEM may fund grant supplements for existing S-STEM awards. Such proposals may be submitted at any time during the year. Grant supplement proposals must be prepared in accordance with the specific instructions in PAPPG, Chapter VI.E.4. PIs are encouraged to contact their project's managing program officer to discuss the grant supplement prior to submitting a proposal.

For all Tracks and Conference and Workshop proposals please refer below to Section V.A.5. for details about the components of a proposal's project description.

D. Resources

The following sources may be of interest to proposers of S-STEM projects. They represent some of the literature on the effectiveness of scholarships/financial aid, evidence-based educational practices, student supports for degree attainment, and entry into the STEM workforce. The list is not meant to be a complete bibliography.

[1] ATE Central (https://atecentral.net)

[2] Bailey, T.R., Jaggars, S.S., & Jenkins, D. (2015). Redesigning America's community colleges: A clearer path to student success. Cambridge, MA: Harvard University Press.

[3] Bowen, W.G., Chingos, M.M., & McPherson, M.S. (2009). Crossing the finish line: Completing college at America's public universities. Princeton, N.J.: Princeton University Press.

[4] Chen, X. (2013). STEM Attrition: College Students' Paths Into and Out of STEM Fields (NCES 2014-001).Washington DC: National Center for Education Statistics, Institute of Education Sciences U.S. Department of Education.

[5] College Board. (2008). The Effectiveness of Financial Aid Policies: What the Research Tells Us. Sandy Baum, Michael McPherson, and Patricia Steele, Editors. The College Board. New York: New York.

[6] Executive Office of the President. (January 2014). Increasing college opportunity for low-income students: Promising models and a call to action. Retrieved from https://obamawhitehouse.archives.gov/sites/default/files/docs/increasing_college_opportunity_for_low-income_students_report.pdf

[7] Kazis, R., Vargas, J., & Hoffman, N. (Eds.) (2004). Double the numbers: Increasing postsecondary credentials for underrepresented youth. Cambridge, MA: Harvard Education Press.

[8] Kober, N. (2015). Reaching Students: What the Research Says About Effective Instruction in Undergraduate Science and Engineering. Board on Science Education, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.

[9] Lumina Foundation. (2011). Four Steps to Finishing First in Higher Education. Indianapolis, IN. Available at https://www.luminafoundation.org/files/publications/Four_Steps_to_Finishing_First_in_Higher_Education.pdf.

[10] National Research Council. (2011). Expanding Underrepresented Minority Participation. Hrabowski, III, Chair. Committee on Underrepresented Groups and the Expansion of the Science and Engineering Workforce Pipeline. Committee on Science, Engineering, and Public Policy, Policy and Global Affairs. Washington, DC: The National Academies Press.

[11] National Research Council. (2011). Promising Practices in Undergraduate Science, Technology, Engineering, and Mathematics Education: Summary of Two Workshops. Natalie Nielsen, Rapporteur, Planning Committee on Evidence on Selected Innovations in Undergraduate STEM Education. Board on Science Education, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.

[12] National Research Council. (2012). Discipline-Based Education Research: Understanding and Improving Learning in Undergraduate Science and Engineering. S.R. Singer, N.R. Nielsen, and H.A. Schweingeruber, Editors. Committee on the Status, Contributions, and Future Directions of Discipline-Based Education Research. Board on Science Education, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.

[13] National Research Council and National Academy of Engineering. (2012). Community Colleges in the Evolving STEM Education Landscape: Summary of a Summit. S. Olson and J.B. Labov, Rapporteurs. Planning Committee on Evolving Relationships and Dynamics Between Two- and Four-Year Colleges, and Universities. Board on Higher Education and Workforce, Division on Policy and Global Affairs. Board on Life Science, Division on Earth and Life Studies, Board on Science Education, Teacher Advisory Council, Division of Behavioral and Social Sciences and Education. Engineering Education Program Office, National Academy of Engineering. Washington DC: The National Academies Press.

[14] National Research Council and National Academy of Engineering. (2013). Educating Engineers: Preparing 21st Century Leaders in the Context of New Modes of Learning; Summary of a Forum. Prepared by Steve Olson. Washington DC: The National Academies Press.

[15] National Science Foundation, National Center for Science and Engineering Statistics. (2019). Women, Minorities, and Persons with Disabilities in Science and Engineering: 2019 (Special Report NSF 19-304). Alexandria, VA. Available at https://www.nsf.gov/statistics/wmpd.

[16] President's Council of Advisors on Science and Technology, Executive Office of the President. (February 2013). Engage to excel: Producing one million additional college graduates with degrees in science, technology, engineering and mathematics. Retrieved from https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/pcast-engage-to-excel-final_feb.pdf.

[17] STEMCentral (https://stem-central.net)

[18] Tinto, V. (2012). Completing college: Rethinking institutional action. Chicago: The University of Chicago Press.

[19] Zemsky, R. (2009). Making reform work: The case for transforming American higher education. New Brunswick: Rutgers University Press.

III. AWARD INFORMATION

The number and size of awards will vary depending upon the scope of projects. Approximately $70 - $95 million is expected to be available annually, for new and continuing activities to support approximately 60 - 80 new S-STEM Awards.

Awards to support Track 1 (Institutional Capacity Building) projects may not exceed $650,000 for 5 years. Awards to support Track 2 (Design and Development: Single Institution) projects may not exceed $1.0 million for 5 years. Awards to support Track 3 (Design and Development: Multi-Institutional Consortia) projects may not exceed $5.0 million for 5 years. The level of funding requested should be based on the focus, scope, and size of the effort.

IV. ELIGIBILITY INFORMATION

Who May Submit Proposals:

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, its territories, or possessions, or the Commonwealth of Puerto Rico that grant associate, baccalaureate, or graduate degrees in the S-STEM eligible degree programs and disciplines listed in "Synopsis of Program" and Section IV.B. are invited to submit proposals.

Who May Serve as PI:

For Track 1 (Institutional Capacity Building) and Track 2 (Design and Development: Single Institution) projects, the Principal Investigator must be a faculty member currently teaching in an S-STEM eligible discipline 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 and leadership responsibility. Other members of the S-STEM senior project leadership and management team may be listed as Co-Principal Investigators.

For Track 3 (Design and Development: Multi-Institutional Consortia) projects, the Principal Investigator must be a faculty member currently teaching in an S-STEM eligible discipline or an institutional, educational, or social science researcher who can provide the leadership required to ensure the success of the project. A consortium project must have a Principal Investigator who accepts overall management and leadership responsibility. Other members of the S-STEM senior project leadership and management team may be listed as Co-Principal Investigators or PIs on collaborative research proposals.

Limit on Number of Proposals per Organization:

An Institution may submit one proposal (either as a single institution or as subawardee or a member of a Collaborative Research project) from each constituent school or college that awards degrees in an S-STEM eligible discipline. See Additional Eligibility Information below for more details (see IV. Eligibility Information).

Limit on Number of Proposals per PI or Co-PI:

There are no restrictions or limits.

Additional Eligibility Info:

A. Institutions

1. An institution may submit one proposal from each constituent college or school that awards S-STEM 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 proposals. 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 in this example could choose to submit a single joint proposal.)
2. An institution without constituent schools (for example, a 4-year college or a community college) may submit one proposal each year.
3. An institution that is part of a larger system is considered separate for proposal submission purposes if it is geographically separate from the other campus(es) and has its own chief academic officer.

B. Scholarship Recipients

Criteria for eligibility for the NSF S-STEM supported scholarships are established by the institution(s). S-STEM scholarship recipients will be selected by the awardee institution(s), but recipients 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. Please note that Deferred Action for Childhood Arrivals (DACA) individuals are ineligible for support from this solicitation unless they meet the requirements listed in the first sentence of this bullet;
- **Be enrolled at least half-time** as defined by the institution in a program leading to an associate, baccalaureate, or graduate degree in an S-STEM eligible discipline;
- **Demonstrate academic ability or potential**;
- **Be low-income.** The definition of low-income must follow the institutional guidelines for income thresholds that qualify the student as low-income (for example see: http://www2.ed.gov/about/offices/list/ope/trio/incomelevels.html);
- **Have unmet financial need**. Demonstrated financial need for undergraduate students is defined by the U.S. Department of Education rules for need-based Federal financial aid Free Application for Federal Student Aid (FAFSA), or, for graduate students, it is defined as financial eligibility for Graduate Assistance in Areas of National Need (GAANN).

These rules define financial need for undergraduates as the Cost of Attendance (COA) for an institution minus the Estimated Family Contribution (EFC) for the student (see https://studentaid.ed.gov/sa/fafsa/next-steps/how-calculated#need-based). The COA, 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, and costs related to a disability; and miscellaneous expenses. The EFC is determined by the FAFSA form and represents the expected family contribution toward the COA (http://www.fafsa.ed.gov). It is recommended that the PI work closely with the campus financial aid office for more information regarding the institutional COA and the calculation of student financial need.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Full Proposal Preparation Instructions: Proposers may opt to submit proposals in response to this Program Solicitation via Grants.gov or via the NSF FastLane system.

- Full proposals submitted via FastLane: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF Proposal & Award Policies & Procedures Guide (PAPPG). The complete text of the PAPPG is available electronically on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg. Paper copies of the PAPPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov. Proposers are reminded to identify this program solicitation number 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.

- Full proposals submitted via Grants.gov: Proposals submitted in response to this program solicitation via Grants.gov should be prepared and submitted in accordance with the NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov. The complete text of the NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: (https://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide). To obtain copies of the Application Guide and Application Forms Package, click on the Apply tab on the Grants.gov site, then click on the Apply Step 1: Download a Grant Application Package and Application Instructions link and enter the funding opportunity number, (the program solicitation number without the NSF prefix) and press the Download Package button. Paper copies of the Grants.gov Application Guide also may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov.

In determining which method to utilize in the electronic preparation and submission of the proposal, please note the following:

Collaborative Proposals. All collaborative proposals submitted as separate submissions from multiple organizations must be submitted via the NSF FastLane system. PAPPG Chapter II.D.3 provides additional information on collaborative proposals.

See PAPPG Chapter II.C.2 for guidance on the required sections of a full research proposal submitted to NSF. Please note that the proposal preparation instructions provided in this program solicitation may deviate from the PAPPG instructions.

The following instructions supplement the guidelines in the PAPPG and NSF Grants.gov Application Guide.

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 FastLane access the DUE Project Data Form, which is required for S-STEM proposals.

   An informative title for the proposed S-STEM 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 your institution's name in the project title.

2. **Project Data Form**

   A DUE Project Data Form (NSF Form 1295: 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 DUE. In FastLane, this form appears in the list of forms for the proposal only after the appropriate Program Solicitation number has been selected (indicated on the cover of this document) and indicated on the proposal cover sheet that has been saved. Select the appropriate Track in the dropdown menu.

3. **Project Summary**

   The Project Summary is a one-page description of the proposed project that consists of an overview, a statement on Intellectual Merit, and a statement on Broader Impacts. In the overview, provide a brief description of the S-STEM project including the number of scholarships to be provided, the number of unique scholarship recipients, the discipline areas to be served by the scholarship funds, the objectives of the project, the expected retention or transfer and graduation rates, 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 explicitly address both Intellectual Merit and Broader Impacts in separate statements. See Section VI. A., Proposal Review Process, for a description 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 PAPPG formatting requirements and must not exceed 15 single-spaced pages. For legibility, 12-point type and page numbers are preferred. See the PAPPG for more details. 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**

      Report on the results from related prior NSF support in accordance with NSF PAPPG requirements (see Chapter II.C.2.d(iii) of the PAPPG). If there have been any prior S-STEM or Science, Technology, Engineering, and Mathematics (STEM) Expansion Program (STEP) awards at the institution, the proposed project should build on the experience from the prior or ongoing project. Proposals should include quantitative and qualitative outcomes of any current or former project(s) and how the experience has informed 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://go.usa.gov/X5F, at the bottom of the program webpage select the link "What Has Been Funded (Recent Awards Made Through This Program, with Abstracts)" to search for prior awards in the S-STEM program. Required information is listed below.

      Results from prior S-STEM awards should include at a minimum: Award number(s); amount of the scholarship; number of scholarship recipients; number and percentage of recipients transferring from 2-year institutions to 4-year programs (if appropriate); number of recipients graduating; percentage of recipients graduating; and number and percentage of recipients leaving the program.

      Results from prior STEP awards should include at a minimum: Award number(s); amount of the award(s); number of students who participated in project activities; description of the activities; retention and graduation rates in STEM programs participating in the STEP project at baseline; expected increase in the number and percentage of students graduating with degrees in targeted STEM programs; and actual increase in the number of students graduating with a degree in targeted STEM programs.

      For S-STEM projects that are on-going, the following information must be reported: Award number(s); amount of the scholarship; number of scholarship recipients; number and percentage of recipients transferring from 2-year institutions to 4-year programs (if appropriate); number and percentage of recipients retained or graduating in STEM; and number and percentage of recipients leaving the program.

      For on-going STEP projects, the following information must be reported: Award number; amount of the award; number of students who are participating in project activities; description of the activities; retention and graduation rates in STEM programs participating in the project at baseline; expected increase in number and percentage of students graduating with a degree in targeted STEM programs; and current retention rate of students participating in STEP activities.

      Descriptions of the results from prior S-STEM and/or STEP support must discuss: (1) lessons learned from the implementation of project activities and outcomes of the project(s) and (2) how these lessons influenced the proposed project.

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. The project also should have specific plans to implement and investigate existing high quality evidence-based practices and professional and workforce development activities (e.g., academic and student support activities) and to contribute to the knowledge base about what works for whom in college retention, student success, and graduation (to include transfer, if appropriate) in STEM.

c. **Significance of Project and Rationale**

A proposal must state and justify with institutional data the annual and total number of unique students who will be awarded scholarships over the duration of the award period, the number of scholarships awarded annually, the total number of scholarships awarded for the award period, the duration of the scholarship, and the annual and maximum amount of the scholarship for a scholarship recipient.

The proposal should address how the goals of the S-STEM program will be met (see Program Description, Section II). In addition, if appropriate, 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. Specifically, baseline data from Institutional Research Offices should include (1) current student demographics and enrollment from institutions awarding scholarships; (2) current student demographics and enrollment for each S-STEM eligible discipline that is included in the proposed project and the projected number of low-income students that meet the eligibility requirements in those disciplines; (3) current 1-year retention rates for each S-STEM eligible discipline that is included in the proposal; and (4) current graduation rates for each S-STEM eligible discipline that is included in the proposal. This baseline data will also be useful for project evaluation. 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.

For S-STEM eligible disciplines included in the proposal, expected outcomes should include, at a minimum: expected demographics and enrollment for the disciplines that are included in the proposal showing the current number of low-income students that would qualify for the scholarships; expected year to year retention or transfer rates for S-STEM eligible disciplines for the eligible student population that are included in the proposal; expected graduation rates for each of the S-STEM disciplines included in the proposal and/or expected student outcomes documenting students successfully overcoming one or more of an institution's self-identified attrition points.

See Section II.B for a list of program outcomes.

d. **Activities on Which the Current Project Builds**

S-STEM projects should build on the research literature and existing academic and student supports and program elements. Proposals should discuss such academic and student supports and program elements that are relevant to the S-STEM project and describe ways in which the S-STEM project will use or enhance the structures. Proposals should describe and justify the adaptation of academic and student supports and program elements implemented for S-STEM Scholars and other STEM students. If the institution or a member of a consortium of institutions has had a previous S-STEM and/or STEP award, show how the proposed project will build on lessons learned from these efforts.

S-STEM projects should draw on the research literature and discuss the issues or gaps in the literature that the project plans to address.

e. **S-STEM Project Management Plan**

S-STEM projects must be guided by a management plan in which the key personnel and project logistics are defined. The roles and responsibilities of the personnel involved should be clear.

For all projects the project leadership team must include a faculty member currently teaching in an S-STEM eligible discipline as listed in Section IV.B, a STEM administrator, and an institutional, educational, or social science researcher.

The project must involve S-STEM faculty, as mentors, in addition to the PI, and it is strongly encouraged that the project involve staff from offices of institutional research, student services, financial aid, and/or admissions. These additional personnel may be included as Co-PIs, depending on institutional policy. In any case, the proposal must describe specific roles of each person in the project. The PI will have overall responsibility for administering the project and for interacting with NSF.

Plans must be described for activities such as recruitment, selection, and retention of students; studies to determine the effectiveness of project activities; maintenance of S-STEM records; coordination of data collection, analysis, and reporting responsibilities; oversight of student supports; and implementation of a process by which students who lose S-STEM eligibility will be replaced by new students.

See Section V.A.8 below for further details on Budget, Budget Justification, and Allowable Costs.

f. **Student Selection Process and Criteria**

The program requires that the students meet the requirements for citizenship, discipline, academic potential, and need that are outlined in Section IV.B, Additional Eligibility Information, Scholarship Recipients. Projects should have additional selection criteria that reflect the local program. S-STEM scholarship recipients 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 must be flexible enough to accommodate applicants who come from diverse backgrounds (e.g., geographic and with diverse career goals). The program encourages projects to recruit a diverse applicant pool that is inclusive of, but not limited to, members of underrepresented groups in STEM (e.g., females, African Americans, Hispanic Americans, Native Americans, including Alaska Natives and Native Pacific Islanders, persons with disabilities, first generation, rural, veterans), with the broad aim of supporting low-income academically talented students with demonstrated financial need to obtain degrees and enter into the STEM workforce or graduate studies.

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.

g. **S-STEM Student Support Services and Programs**

It is expected that awardee institutions will have or will adapt existing high-quality evidence-based practices (e.g., curricular and co-curricular activities; professional, and workforce development activities) designed to enhance student learning, academic performance, retention to graduation, and career or higher education placement. Awardee institutions will implement and test these practices to understand if they are working as expected, if they are successful, and for what types of students.

Experience indicates that the most successful S-STEM projects involve faculty mentoring and 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. Thus, in this model, two of the program requirements are that all S-STEM scholarship recipients have STEM faculty mentors and are placed in student cohorts. Other examples of student support activities to consider include:

- Recruitment of students to higher education programs and careers in the S-STEM eligible disciplines;
- Curricular activities such as the inclusion of active learning in gateway courses;
- Support and mentoring of students by peers 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; and
- Career counseling and job placement services for S-STEM scholarship recipients.

For support services and programs that already exist, describe how they will be adapted to meet the specific objectives of the S-STEM project. Partnerships with industry are encouraged.

See Section V.A.8, Proposal Preparation Instructions, for a discussion of budget details.

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. **Generation of Knowledge**

All projects should advance understanding about the factors and/or activities associated with retention, student success, transfer, academic/career pathways, and degree attainment. Knowledge generation should be based on the information needs of the institution; draw on the research literature on evidence-based practices, student success, and degree attainment; state questions that guide the investigations; and describe how the questions will be answered.

j. **Evaluation**

S-STEM projects should include a clear and specific project evaluation plan. The evaluation should include formative evaluation for project improvement in the first two years of implementation to allow for any necessary corrective action and summative evaluation to assess and document project outcomes, accomplishments, and lessons learned at the end of the project. Beyond the impact on students, S-STEM projects should collect data to ascertain impact on the departments, disciplines involved, and the institution. Each S-STEM proposal should describe evaluation plans that are clearly aligned with the stated goals of the project. The evaluation design should match the scope of the project.

The evaluator must be external to the project, but not necessarily to the institution. The evaluator should not be a Co-PI or senior personnel on the project.

S-STEM projects are required to participate in regular NSF-led data collection activities to follow student progress.

k. **Dissemination**

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

l. **Advice to Proposers**

There are several considerations related to special features of the S-STEM program that deserve more detailed description.

Often there are programs at an institution that do not have exactly the same title as an S-STEM eligible discipline (see Section IV.B.), but might be related to or part of an S-STEM eligible discipline. In cases where students are in programs that are not included in the list of specific S-STEM eligible disciplines listed in "Synopsis of Program" and Section IV.B., the proposal must clearly document and justify the inclusion of the program in the disciplines supported by the S-STEM project. 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 eligible disciplines.

NSF has adopted the standard U.S. Department of Education guidelines for determining financial need for low-income students 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. 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 potential 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. A proposal must include the institution's definition of a "low-income" student.

S-STEM projects often include enhancements such as seminars, field trips, social activities, student-faculty interaction outside classes, and other enrichment activities, such as research opportunities, tutoring, and internships. 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. 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, 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 or dissertation.

Two S-STEM criteria for scholarship recipients set by proposers are the definition of academic ability (or potential) and low-income students with demonstrated financial need per FAFSA. All students who meet a project's eligibility requirements in these areas must have an equal opportunity to receive scholarships, regardless of any other factors. A project may implement efforts to increase participation by students who are underrepresented in STEM through recruitment and the adaptation and implementation of curricular and co-curricular activities that are described in the education literature as particularly effective at meeting the needs (e.g., retention, student success, academic/career pathways) of certain types of students.

A proposal should state an estimate and justification for the average scholarship amount. This value should balance the desire for a project to benefit the maximum number of students possible and the likelihood of students graduating in STEM. The scholarships awarded are expected to reduce the need for students to work during the academic year. The maximum scholarship amount per student per year is $10,000.

A project is expected to make a contribution to the STEM education knowledge base. The complexity, scope, and size of those contribution(s) should be a) commensurate with the experience and expertise of the institution in this area, b) aligned with the needs identified in an institutional scan (where greater understanding of an issue would be beneficial), c) aligned with the interests of the leadership and management team, and d) appropriate for the budgeted resources specified for this area of the project.

A cohesive proposal clearly articulates the rationale for decisions and the details regarding how project components fit together in a logical framework. Supporting data, the educational literature, or lessons learned should be presented, where appropriate.

m. **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 STEP awards;
- 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;
- Statement and justification of the annual and total number of unique students who will be awarded scholarships over the duration of the award period, the number of scholarships awarded annually, the total number of scholarships awarded for the award period, the duration of the scholarship, and the annual and maximum amount of the scholarship for a scholarship recipient;
- Discussion of activities on which the project builds (particularly connections to any previous or current S-STEM or STEP awards 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 implementation and testing of curricular and co-curricular activities, student support services and programs, and their impact on students;
- Contribution to the knowledge base on how factors or evidence-based practices affect student success and degree attainment in STEM;
- Evidence of the quality of the institution's educational programs;
- Plans for project evaluation (formative and summative); and
- Plans for dissemination.

6. **References Cited**

References should draw on the discipline-based education research literature, on the literature on STEM teaching and learning, and on the research literature on higher education.

7. **Biographical Sketches**

Include a 2-page biographical sketch (following the instructions in the PAPPG) 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 duration for a Track 1 project is expected to be 5 years. The maximum S-STEM request may not exceed $650,000. At least 60%

of the total requested amount must go to scholarships to academically talented low-income students with demonstrated financial need. Funds should support the implementation and testing of existing high quality evidence-based practices (e.g., curricular and co-curricular activities and student support services), contributions to knowledge use and generation, project evaluation, and project management.

The maximum duration for a Track 2 project is expected to be 5 years. The maximum S-STEM request may not exceed $1.0 million. At least 60% of the total amount requested must go to scholarships to low-income academically talented students with demonstrated financial need. Funds should support the implementation and testing of existing high quality evidence-based practices (e.g., curricular and co-curricular activities and student support activities), contributions to knowledge use and generation, project evaluation, and project management.

The maximum duration for a Track 3 project is expected to be 5 years. The maximum S-STEM request may not exceed $5.0 million and is dependent on focus, size, and scope. At least 60% of the total requested amount must go to supporting scholarships for low-income academically talented students with demonstrated financial need. Funds should support the implementation and testing of existing high quality evidence-based practices (e.g., curricular and co-curricular activities and student support services) that are common to all members of the consortium, contributions to knowledge use and generation, project evaluation, and project management.

The following instructions refer to the NSF proposal budget form. The sections and budget line designations correspond to the FastLane budget screen.

- All allocations for scholarships should be indicated in NSF budget form section F, "Participant Support," line F1 - "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.
- Faculty salary requests must be accompanied by an appropriate indication of the fraction of academic or summer months to be paid by the grant.
- For Track 1 and Track 2, funds must be requested for expenses related to supporting the implementation and testing of high quality extant curricular and co-curricular activities, student support, project evaluation, and project management. These costs may include funds associated with personnel required to implement project activities. These direct costs must be assigned to the appropriate NSF budget categories on the NSF budget form and must be explained in the budget justification. Refer to the PAPPG instructions for appropriate categories. Items that are for direct support of scholar participants (for example, student travel to professional meetings or meeting registrations) should be listed in the "Participant Support" section on lines F.2, "Travel" or F.3, "Subsistence." Other costs should be listed in other sections of the budget as appropriate.
- Indirect costs (NSF budget form line I) are subject to the institution's current Federally negotiated indirect cost agreement. The total budget request (sum of direct and indirect costs to be entered on budget line J) must not exceed the amount set for each type of project. Prospective PIs should consult with their university Office of Sponsored Programs about the calculation of indirect costs.
- For Track 3 projects, at least 60% of the total requested amount must go to supporting scholarships for low-income academically talented students with demonstrated financial need. Funds must be requested for expenses related to the implementation and testing of high quality extant curricular and co-curricular activities or factors common to all members of the consortium, student support activities, contributions to knowledge use and generation, project evaluation, and project management. Indirect costs (NSF budget form line I) are subject to the institutions' current federally-negotiated indirect cost agreement. The total of all direct and indirect costs for the Multi-Institutional consortia projects are capped at $5.0 million.
- Funds should also be included for the PI or another member of the leadership team to attend meetings of grantees and other researchers that may be organized by community stakeholders such as professional societies or other scholarly interest groups.

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. See the PAPPG for more details.

10. **Facilities, Equipment, and Other Resources**

    See PAPPG Chapter II.C.2.i.

11. **Supplementary Documentation**

    Supplementary documents are limited to the specific types of documents listed in PAPPG Chapter II.C.2.j with the following exception:

    Proposals must include the following information in tabular form. If scholarships of different amounts or lengths of time are planned, the first table should be duplicated multiple times to capture all the information. For collaborative and multi-institutional proposals, the requested data should be provided for each institution separately.

Name of institution =	*Enter Name*
Anticipated number of unique scholars supported =	*Enter Number*
Anticipated amount of each scholarship =	*Enter Amount or Range*
Anticipated number of years of scholarship support per scholar =	*Enter Number or Range*

Name of degree on diploma awarded to scholars:
Name #1
Name #2
Name #3
Name #4, etc.

Proposals that include supplementary documents beyond those specified in the PAPPG and this solicitation may be returned without review.

B. Budgetary Information

Cost Sharing:

Inclusion of voluntary committed cost sharing is prohibited.

Other Budgetary Limitations:

No other budgetary limitations. As described above, budgetary details are described in section V.A.8.

C. Due Dates

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

  April 22, 2020

  Last Wednesday in March, Annually Thereafter

D. FastLane/Research.gov/Grants.gov Requirements

For Proposals Submitted Via FastLane or Research.gov:

To prepare and submit a proposal via FastLane, see detailed technical instructions available at: https://www.fastlane.nsf.gov/a1/newstan.htm. To prepare and submit a proposal via Research.gov, see detailed technical instructions available at: https://www.research.gov/research-portal/appmanager/base/desktop?_nfpb=true&_pageLabel=research_node_display&_nodePath=/researchGov/Service/Desktop/ProposalPreparationandSubmission.html. For FastLane or Research.gov user support, call the FastLane and Research.gov Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov or rgov@nsf.gov. The FastLane and Research.gov Help Desk answers general technical questions related to the use of the FastLane and Research.gov systems. 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.

For Proposals Submitted Via Grants.gov:

Before using Grants.gov for the first time, each organization must register to create an institutional profile. Once registered, the applicant's organization can then apply for any federal grant on the Grants.gov website. Comprehensive information about using Grants.gov is available on the Grants.gov Applicant Resources webpage: https://www.grants.gov/web/grants/applicants.html. In addition, the NSF Grants.gov Application Guide (see link in Section V.A) provides instructions regarding the technical preparation of proposals via Grants.gov. For Grants.gov user support, contact the Grants.gov Contact Center at 1-800-518-4726 or by email: support@grants.gov. The Grants.gov Contact Center answers general technical questions related to the use of Grants.gov. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this solicitation.

Submitting the Proposal: Once all documents have been completed, the Authorized Organizational Representative (AOR) must submit the application to Grants.gov and verify the desired funding opportunity and agency to which the application is submitted. The AOR must then sign and submit the application to Grants.gov. The completed application will be transferred to the NSF FastLane system for further processing.

Proposers that submitted via FastLane or Research.gov may use Research.gov to verify the status of their submission to NSF. For proposers that submitted via Grants.gov, until an application has been received and validated by NSF, the Authorized Organizational Representative may check the status of an application on Grants.gov. After proposers have received an e-mail notification from NSF, Research.gov should be used to check the status of an application.

VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

Proposals received by NSF are assigned to the appropriate NSF program for acknowledgement and, if they meet NSF requirements, for review. 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 either as *ad hoc* reviewers, panelists, or both, who are experts in the particular fields represented by the proposal. These reviewers are selected by Program Officers charged with 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. In addition, Program Officers may obtain comments from site visits before recommending final action on proposals. Senior NSF staff further review recommendations for awards. A flowchart that depicts the entire NSF proposal and award process (and associated timeline) is included in PAPPG Exhibit III-1.

A comprehensive description of the Foundation's merit review process is available on the NSF website at: https://www.nsf.gov/bfa/dias/policy/merit_review/.

Proposers should also be aware of core strategies that are essential to the fulfillment of NSF's mission, as articulated in *Building the Future: Investing in Discovery and Innovation - NSF Strategic Plan for Fiscal Years (FY) 2018 – 2022*. These strategies are integrated in the program planning and implementation process, of which proposal review is one part. NSF's mission is particularly well-implemented through the integration of research and education and broadening participation in NSF programs, projects, and activities.

One of the strategic objectives in support of NSF's mission is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions must recruit, train, and prepare a diverse STEM workforce to advance the frontiers of science and participate in the U.S. technology-based economy. NSF's contribution to the national innovation ecosystem is to provide cutting-edge

research under the guidance of the Nation's most creative scientists and engineers. NSF also supports development of a strong science, technology, engineering, and mathematics (STEM) workforce by investing in building the knowledge that informs improvements in STEM teaching and learning.

NSF's mission calls for the broadening of opportunities and expanding participation of groups, institutions, and geographic regions that are underrepresented in STEM disciplines, which 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.

A. Merit Review Principles and Criteria

The National Science Foundation strives to invest in a robust and diverse portfolio of projects that creates new knowledge and enables breakthroughs in understanding across all areas of science and engineering research and education. To identify which projects to support, NSF relies on a merit review process that incorporates consideration of both the technical aspects of a proposed project and its potential to contribute more broadly to advancing NSF's mission "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes." NSF makes every effort to conduct a fair, competitive, transparent merit review process for the selection of projects.

1. Merit Review Principles

These principles are to be given due diligence by PIs and organizations when preparing proposals and managing projects, by reviewers when reading and evaluating proposals, and by NSF program staff when determining whether or not to recommend proposals for funding and while overseeing awards. Given that NSF is the primary federal agency charged with nurturing and supporting excellence in basic research and education, the following three principles apply:

- All NSF projects should be of the highest quality and have the potential to advance, if not transform, the frontiers of knowledge.
- NSF projects, in the aggregate, should contribute more broadly to achieving societal goals. These "Broader Impacts" may be accomplished through the research itself, through activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. The project activities may be based on previously established and/or innovative methods and approaches, but in either case must be well justified.
- Meaningful assessment and evaluation of NSF funded projects should be based on appropriate metrics, keeping in mind the likely correlation between the effect of broader impacts and the resources provided to implement projects. If the size of the activity is limited, evaluation of that activity in isolation is not likely to be meaningful. Thus, assessing the effectiveness of these activities may best be done at a higher, more aggregated, level than the individual project.

With respect to the third principle, even if assessment of Broader Impacts outcomes for particular projects is done at an aggregated level, PIs are expected to be accountable for carrying out the activities described in the funded project. Thus, individual projects should include clearly stated goals, specific descriptions of the activities that the PI intends to do, and a plan in place to document the outputs of those activities.

These three merit review principles provide the basis for the merit review criteria, as well as a context within which the users of the criteria can better understand their intent.

2. Merit Review Criteria

All NSF proposals are evaluated through use of the two National Science Board approved merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two merit review criteria are listed below. **Both** criteria are to be given **full consideration** during the review and decision-making processes; each criterion is necessary but neither, by itself, is sufficient. Therefore, proposers must fully address both criteria. (PAPPG Chapter II.C.2.d(i). contains additional information for use by proposers in development of the Project Description section of the proposal). Reviewers are strongly encouraged to review the criteria, including PAPPG Chapter II.C.2.d(i), prior to the review of a proposal.

When evaluating NSF proposals, reviewers will be asked to consider what the proposers want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. These issues apply both to the technical aspects of the proposal and the way in which the project may make broader contributions. To that end, reviewers will be asked to evaluate all proposals against two criteria:

- **Intellectual Merit:** The Intellectual Merit criterion encompasses the potential to advance knowledge; and
- **Broader Impacts:** The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.

The following elements should be considered in the review for both criteria:

1. What is the potential for the proposed activity to
    a. Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
    b. Benefit society or advance desired societal outcomes (Broader Impacts)?
2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
4. How well qualified is the individual, team, or organization to conduct the proposed activities?
5. Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?

Broader impacts may be accomplished through the research itself, through the activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. NSF values the advancement of scientific knowledge and activities that contribute to achievement of societally relevant outcomes. Such outcomes include, but are not limited to: full participation of women, persons with disabilities, and underrepresented minorities in science, technology, engineering, and mathematics (STEM); improved STEM education and educator development at any level; increased public scientific literacy and public engagement with science and technology; improved well-being of individuals in society; development of a diverse, globally competitive STEM workforce; increased partnerships between academia, industry, and others; improved national security; increased economic competitiveness of the United States; and enhanced infrastructure for research and education.

Proposers are reminded that reviewers will also be asked to review the Data Management Plan and the Postdoctoral Researcher Mentoring Plan, as

appropriate.

B. Review and Selection Process

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

Ad hoc Review and/or Panel Review.

Reviewers will be asked to evaluate proposals using two National Science Board approved merit review criteria and, if applicable, additional program specific criteria. A summary rating and accompanying narrative will generally be completed and submitted by each reviewer and/or panel. 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 strives to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. Large or particularly complex proposals or proposals from new awardees may require additional review and processing time. The time interval begins on the deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director acts upon the Program Officer's recommendation.

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. After an administrative review has occurred, Grants and Agreements Officers perform 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.

Once an award or declination decision has been made, Principal Investigators are provided feedback about their proposals. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers or any reviewer-identifying information, 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.

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 notice, 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 notice; (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 notice. 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 https://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-8134 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 *Proposal & Award Policies & Procedures Guide* (PAPPG) Chapter VII, available electronically on the NSF Website at https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg.

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 no later than 90 days prior to the end of the current budget period. (Some programs or awards require submission of more frequent project reports). No later than 120 days following expiration of a grant, the PI also is required to submit a final project report, and a project outcomes report for the general public.

Failure to provide the required annual or final project reports, or the project outcomes report, will delay NSF review and processing of any future funding increments as well as any pending proposals for all identified PIs and co-PIs on a given award. 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 Research.gov, for preparation and submission of annual and final

project reports. Such reports provide information on accomplishments, project participants (individual and organizational), publications, and other specific products and impacts of the project. Submission of the report via Research.gov constitutes certification by the PI that the contents of the report are accurate and complete. The project outcomes report also must be prepared and submitted using Research.gov. This report serves as a brief summary, prepared specifically for the public, of the nature and outcomes of the project. This report will be posted on the NSF website exactly as it is submitted by the PI.

More comprehensive information on NSF Reporting Requirements and other important information on the administration of NSF awards is contained in the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) Chapter VII, available electronically on the NSF Website at https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg.

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 website 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.

Third Year Review for S-STEM Track 3 Multi-institutional Consortium awards: Track 3 projects will be required to participate in a Third-Year Review that will focus on accomplishments, challenges, changes in the project, and lessons learned. Instructions will be provided shortly after the award to successful Track 3 grantees. Third year reviews provide feedback and guidance for project implementation and assessment of project outcomes. Project teams present information on the status of project activities and outcomes to date. A team of S-STEM staff review project documentation, acknowledge accomplishments, discuss shortcomings, and make recommendations to improve project implementation as appropriate.

Projects are required to cooperate and participate in a third-party independent evaluation of the S-STEM program.

VIII. AGENCY CONTACTS

Please note that the program contact information is current at the time of publishing. See program website for any updates to the points of contact.

General inquiries regarding this program should be made to:

- Keith Sverdrup, telephone: (703) 292-4671, email: ksverdru@nsf.gov
- Michael J. Ferrara, telephone: (703) 292-2635, email: mferrara@nsf.gov
- Sami Rollins, telephone: (703) 292-7133, email: srollins@nsf.gov
- Alexandra Medina-Borja, telephone: (703) 292-7557, email: amedinab@nsf.gov
- Abiodun (Abby) Ilumoka, telephone: (703) 292-2703, email: ailumoka@nsf.gov
- Karen A. Keene, telephone: (703) 292-2482, email: kkeene@nsf.gov
- Andrea L. Nixon, telephone: (703) 292-5323, email: anixon@nsf.gov
- Mark A. Pauley, telephone: (703) 292-8658, email: mpauley@nsf.gov
- Pushpa Ramakrishna, telephone: (703) 292-2943, email: pusramak@nsf.gov
- Connie K. Della-Piana, telephone: (703) 292-5309, email: cdellapi@nsf.gov
- Michelle M. Camacho- Walter, telephone: (703) 292-8718, email: mcamacho@nsf.gov
- Jennifer E. Lewis, telephone: (703) 292-2938, email: jenlewis@nsf.gov
- Dawn M. Rickey, telephone: (703) 292-4674, email: drickey@nsf.gov
- John Jackman, telephone: (703) 292-4816, email: jjackman@nsf.gov
- Thomas B. Higgins, telephone: (703) 292-2937, email: thhiggin@nsf.gov

For questions related to the use of FastLane or Research.gov, contact:

- FastLane and Research.gov Help Desk: 1-800-673-6188

  FastLane Help Desk e-mail: fastlane@nsf.gov.

  Research.gov Help Desk e-mail: rgov@nsf.gov

For questions relating to Grants.gov contact:

- Grants.gov Contact Center: If the Authorized Organizational Representatives (AOR) has not received a confirmation message from Grants.gov within 48 hours of submission of application, please contact via telephone: 1-800-518-4726; e-mail: support@grants.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, "NSF Update" is an information-delivery system 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 Grants Conferences. Subscribers are informed through e-mail or the user's Web browser each time new publications are issued that match their identified interests. "NSF Update" also is available on NSF's website.

Grants.gov provides an additional electronic capability to search for Federal government-wide grant opportunities. NSF funding opportunities may be accessed via this mechanism. Further information on Grants.gov may be obtained at https://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 55,000 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 Arctic 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 (FASED) provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See the *NSF Proposal & Award Policies & Procedures Guide* Chapter II.E.6 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 https://www.nsf.gov

- **Location:** 2415 Eisenhower Avenue, Alexandria, VA 22314
- **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 System of Record Notices, NSF-50, "Principal Investigator/Proposal File and Associated Records," and NSF-51, "Reviewer/Proposal File and Associated Records." 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
Office of the General Counsel
National Science Foundation
Alexandria, VA 22314

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