

Partnerships for Research and Education in Chemistry (PREC)

PROGRAM SOLICITATION

NSF 21-620



National Science Foundation

Directorate for Mathematical and Physical Sciences
Division of Chemistry

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

January 21, 2022

IMPORTANT INFORMATION AND REVISION NOTES

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised *NSF Proposal & Award Policies & Procedures Guide* (PAPP) ([NSF 22-1](#)), which is effective for proposals submitted, or due, on or after October 4, 2021.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Partnerships for Research and Education in Chemistry (PREC)

Synopsis of Program:

The CHE Partnerships for Research and Education in Chemistry (PREC) program aims to enable, build, and grow partnerships between minority-serving institutions (MSIs) and CHE-supported Centers for Chemical Innovation, NSF's ChemMatCARS, the Molecular Sciences Software Institute (MoSSI), or the Molecule Maker Lab Institute (MMLI) to increase recruitment, retention and degree attainment (which defines the PREC pathway) by members of those groups most underrepresented in chemistry research, and at the same time support excellent research and education endeavors that strengthen such partnerships.

The PREC program includes two Tracks to catalyze the development of research and educational endeavors at MSIs as well as to improve the PREC pathway. Track 1 focuses efforts on establishing and strengthening the PREC pathway through smaller research and education collaborations. Track 2 includes improvements and expansions of the PREC pathway while also building larger collaborations and capacity for research at the MSIs with support for the integration of research and education efforts.

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.

- Rebecca Peebles, telephone: (703) 292-8809, email: rpeebles@nsf.gov

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

- 47.049 --- Mathematical and Physical Sciences

Award Information

Anticipated Type of Award: Continuing Grant

Estimated Number of Awards: 2 to 4

Anticipated Funding Amount: \$2,000,000

In FY2022 Track 1 awards are expected to be up to \$300,000 per year for up to 3 years. Track 2 awards are expected to be up to \$600,000 per year for up to 3 years.

Estimated program budget, number of awards and average award size/duration are subject to the availability of funds and receipt of competitive proposals.

Eligibility Information

Who May Submit Proposals:

Proposals may only be submitted by the following:

- The proposal must be submitted by a minority-serving college or university. See "Eligible Institutions of Higher Education" in this program solicitation for a complete description.

Who May Serve as PI:

The Lead Principal Investigator (PI) must hold a faculty appointment at an eligible minority-serving college or university as defined in the "Eligible Institutions of Higher Education" section. Additional faculty from the lead institution may be listed as co-PIs. Funding for faculty from a second partnering MSI must be requested via subawards; separately submitted collaborative proposals will not be accepted. The director of one of the NSF-Chemistry centers, institutes, or facilities included in the "Eligible Partners" section must be listed as a non co-PI senior personnel. Their name does not appear on the Cover Sheet. Additional investigators from the partnering CHE-supported center, facility or institute may also be listed as non co-PI senior personnel and also do not appear on the Cover Sheet.

Limit on Number of Proposals per Organization:

1 per lead institution

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 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):

January 21, 2022

Proposal Review Information Criteria

Merit Review Criteria:

National Science Board approved criteria. Additional merit review criteria apply. Please see the full text of this solicitation for further information.

Award Administration Information

Award Conditions:

Standard NSF award conditions apply.

Reporting Requirements:

Additional reporting requirements apply. Please see the full text of this solicitation for further information.

TABLE OF CONTENTS

Summary of Program Requirements

- I. **Introduction**
- II. **Program Description**
- III. **Award Information**
- IV. **Eligibility Information**
- V. **Proposal Preparation and Submission Instructions**
 - A. Proposal Preparation Instructions
 - B. Budgetary Information
 - C. Due Dates
 - D. FastLane/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

The National Science Foundation's vision of "a Nation that is the global leader in research and innovation" encompasses core values of research excellence, inclusion, and collaboration, as described in NSF's strategic plan (https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf18045). The NSF Division of Chemistry (CHE) supports a broad range of research across the intellectual frontiers of Chemistry. Solving the cutting-edge problems pursued by the Chemistry community requires engaging the nation's human talent and resources in their entirety and developing and supporting the diverse Chemistry workforce that is critical for continued progress in scientific discovery.

Minority-serving colleges and universities, the Centers for Chemical Innovation, NSF's ChemMatCARS, MolSSI, and the MMLI represent rich resources for enhancing minority participation in STEM careers. In this context, underrepresented minorities include Blacks or African Americans, Hispanics or Latinos, American Indians, Alaska Natives, Native Hawaiians, and Other Pacific Islanders, and persons with disabilities. Partnerships with CHE-supported centers, institutes, and facilities, which house preeminent researchers and world-class scientific infrastructure, offer a singular opportunity for growing the contributions that minority-serving institutions make to the US chemistry enterprise.

II. PROGRAM DESCRIPTION

The Partnerships for Research and Education in Chemistry (PREC) program aims to enable, build, and grow formal partnerships between minority-serving institutions and CHE-supported centers, institutes, and facilities through materializing the PREC pathway. The PREC pathway increases diversity through enhanced recruitment, retention, and degree attainment by members of groups that are historically excluded and under-served in chemistry. This pathway is established, expanded, and sustained through excellent research and education endeavors, that are enabled at MSIs and through collaborations that advance chemistry research goals. The PREC program activity is expected to enhance both the quantity and quality of chemistry research and education opportunities for students, both undergraduate and graduate level, postdoctoral associates, and faculty members at minority-serving institutions, and to demonstrably lead to increased diversity in chemistry research. These opportunities result from sustained, multi-investigator, collaborative research and education partnerships that define a framework wherein a supportive and stable PREC pathway for promoting inclusiveness in STEM is designed and built. In this context, the framework includes the partnership, the pathway (i.e. the recruitment/retention/degree attainment paradigm), as well as essential research and education elements that collectively propel the progression of the participants (undergraduate, graduate, postdoctoral, and faculty) along the pathway. Since MSIs are key institutions for Chemistry degree production of historically excluded and undeserved groups, PREC proposals support MSI faculty in research that engages them in their professional field(s), builds capacity for research at their home institution, supports the integration of research and undergraduate and/or graduate education, and further supports these efforts through collaborations with centers, institutes, and facilities. Additionally, the PREC activity may also contribute to and strengthen diversity efforts at partnering institutions (i.e. the CHE-supported centers, institutes, and facilities).

Track 1 and Track 2 proposals differ in scale, scope, and emphasis.

A Track 1 PREC proposal will encompass a research thrust that involves a team of limited size, perhaps one or two faculty members from the MSI and at least one non-co-PI senior personnel from the partnering center, institute, or facility that is based on common intellectual interests (pre-existing or newly identified) and complementary backgrounds, skills, and knowledge. The PI of the partnering center, institute, or facility must be one of the included non-co-PI senior personnel. Additional faculty from the partnering center or facility may be added as additional non-co-PI senior personnel. Ideally, a PREC proposal defines a vision for the partnership that simultaneously promotes inclusiveness and research excellence; the proposed research should be aligned with research supported by CHE. The research thrust should support and underpin the element(s) of the PREC pathway that is/are to be established, developed, and/or expanded in the partnership. The pathway may be addressed through a variety of strategies that effectively utilize research and education resources and depend on the level of support that the lead institution can provide. Examples of pathway activities include workshops, technical meetings, curriculum

development, summer schools, outreach directed at improving recruitment, student mentoring activities, and overall opportunities in science learning and training. The partnership is expected to develop capacity in at least one segment of the PREC pathway within the duration of the award, commensurate with the partnership's starting research and capacity levels. Ideally, a Track 1 PREC will position a team to expand to a Track 2 PREC in response to a future solicitation.

A Track 2 PREC proposal will encompass a research thrust that involves a larger team from the MSI and at least one non co-PI senior personnel from the partnering center, institute, or facility. The PI of the partnering center, institute or facility must be one of the non-co-PI personnel. Additional personnel from the partnering CHE-supported center, facility, or institute may also be added as non co-PI senior personnel. Investigators from a second participating MSI may be added as non co-PI senior personnel. Increasing diversity in chemistry research relies on creating research and education partnerships that promote inclusive institutional cultures. An effective partnership defines a framework that contains the PREC pathway, as well as research and education resources. A Track 2 PREC places greater reliance on the expanded research collaborations as well as education partnerships as mechanisms to support multiple components of the PREC pathway.

The role of each institutional partner should be explicit, and project goals to achieve the vision should be clearly defined and addressed. Importantly, anticipated challenges and expected outcomes toward increasing diversity and research output must be identified and addressed. Plans for student/faculty exchanges between partnering institutions are required. Project assessment and evaluation plans are required, scaled differently for the two Tracks, and are designed to emphasize an increase in the quality and quantity in diversity, research, and education, measured relative to the beginning of the award. Successful PRECs can be developed regardless of the starting research and capacity levels at the lead institution.

Starting research and capacity levels will position the PREC partnership for a Track 1 or Track 2 proposal as well as at a specific location within the PREC pathway, which can range from pre-recruitment to pre-degree attainment stages. It is expected that the partnership on the PREC pathway will evolve and mature, leading to an increased enrollment of underrepresented students in graduate school, and eventually, to a diverse chemistry research workforce at all levels (i.e., student, post doc, faculty, STEM career). PREC teams are encouraged to devise innovative strategies around recruitment, retention, workforce development, and degree attainment that will successfully promote enrollment of minority students in STEM Ph.D. programs in both minority- and non-minority-serving institutions throughout the U.S. Other strategies might focus on preparing undergraduates at the lead institution for recruitment by the partner institution, thereby benefiting both institutions by simultaneously increasing diversity in STEM areas and research output.

Successful PRECs are expected to:

- Engage in compelling chemistry research. Partnerships must have a well-integrated research program with compelling intellectual merit. Research plans must demonstrate clear benefits from a collaborative approach with substantive intellectual engagement from all partners and well-defined research roles.
- Promote increased diversity in at least one segment of the recruitment, retention, degree-attaining pathway through research, education, and/or training opportunities. Challenges and progress throughout the stages of recruitment, retention, and degree attainment are anticipated and addressed.
- Propose elements in the framework that will successfully promote inclusiveness and lead to equity and research excellence by increasing both diversity efforts and research output in chemistry research at all partnering institutions. The proposed elements must clearly define purpose, challenges, and expected outcomes towards increasing diversity and research output.
- Establish faculty and student exchanges as a core component of the partnership.
- PREC partners propose specific metrics with which the research, educational and/or training activities in the partnership will be evaluated. The metrics will address research, education, and/or training quality and quantity measured relative to the beginning of the award in each partnership. Successful PRECs can be developed regardless of differences in starting research and capacity levels at the lead institution.
- Specify gains for each partner in impacts to the PREC pathway. Using the metrics identified in the proposal, gains will be evaluated and assessed within the context of the segment(s) in the PREC pathway that a specific partnership is targeting. The metrics will emphasize increase in diversity and as measured relative to the beginning of the award in each partnership

A PREC award may address any area of research supported by the NSF Division of Chemistry including experimental and theoretical research in the major subfields of chemistry that are supported through the Disciplinary Research Programs: Chemical Synthesis; Chemical Catalysis; Chemical Theory, Models, and Computational Methods; Chemical Structure, Dynamics, and Mechanisms A and B; Chemical Measurement and Imaging; Environmental Chemical Sciences; Chemistry of Life Processes; Macromolecular, Supramolecular, and Nanochemistry. Interdisciplinary projects at the interface between these chemistry areas and other disciplines and chemistry sub-fields may also be considered, although the bulk of the effort must fall within one of those areas within the purview of the Division of Chemistry. For a detailed description of the research supported by the CHE core programs visit <https://www.nsf.gov/che>.

III. AWARD INFORMATION

NSF expects to make Continuing Grants. The estimated number of awards will be 2 to 4. Awards are anticipated to be effective in July 2022. The total anticipated funding amount in FY 2022 is approximately \$2,000,000. Track 1 awards are expected to be up to \$300,000 per year for up to 3 years. Track 2 awards are expected to be up to \$600,000 per year for up to 3 years. Estimated program budget, number of awards and average award size/duration are subject to the availability of funds and receipt of competitive proposals.

IV. ELIGIBILITY INFORMATION

Who May Submit Proposals:

Proposals may only be submitted by the following:

- The proposal must be submitted by a minority-serving college or university. See "Eligible Institutions of Higher Education" in this program solicitation for a complete description.

Who May Serve as PI:

The Lead Principal Investigator (PI) must hold a faculty appointment at an eligible minority-serving college or university as defined in the "Eligible Institutions of Higher Education" section. Additional faculty from the lead institution may be listed as co-PIs. Funding for faculty from a

second partnering MSI must be requested via subawards; separately submitted collaborative proposals will not be accepted. The director of one of the NSF-Chemistry centers, institutes, or facilities included in the "Eligible Partners" section must be listed as a non co-PI senior personnel. Their name does not appear on the Cover Sheet. Additional investigators from the partnering CHE-supported center, facility or institute may also be listed as non co-PI senior personnel and also do not appear on the Cover Sheet.

Limit on Number of Proposals per Organization:

1 per lead institution

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

There are no restrictions or limits.

Additional Eligibility Info:

Eligible Institutions of Higher Education

PREC Proposals may only be submitted by minority-serving Institutions of Higher Education (IHE) in the United States that award degrees in Chemistry and that have aggregated undergraduate enrollments (based on total student enrollment) of 50% or more of members of groups underrepresented among those holding advanced degrees in science and engineering fields: Blacks or African Americans, Hispanics or Latinos Americans, American Indians, Alaska Natives, Native Hawaiians and Other Pacific Islanders. Eligibility as a minority-serving institution may be determined by reference to the Integrated Postsecondary Education Data System (IPEDS) of the US Department of Education National Center for Education Statistics (<http://nces.ed.gov/ipeds/>). Institutions of higher education that primarily serve populations of students with disabilities are also eligible to submit PREC proposals (https://www.nsf.gov/od/broadeningparticipation/nsf_frameworkforaction_0808.pdf).

It is recognized that 2-year and 4-year Associate-granting colleges have important impacts in the matriculation of students from historically excluded and underserved groups. While 2-year and 4-year Associate degree-granting colleges are not eligible to submit a proposal under this solicitation, partnerships with a leading minority-serving institution are encouraged. Teams are encouraged to develop tightly focused and measurable efforts by developing activities between one MSI and one CHE-supported center, facility, and/or institute. However, there may be circumstances, such as inclusion of an Associate-degree-granting institution, or built on proximity or established collaborations, where the case could be made for an expanded team, involving an additional MSI.

CHE-supported centers, institutes and facilities may participate in up to two proposals, in which at most one track 2 proposal, through this solicitation. The proposal might include a subaward to the partnering center, institute, or facility, consistent with the proposed partnership activities.

Proposers are encouraged to contact the cognizant Program Directors with questions about eligibility.

Eligible Partners

Eligible partners include the following CHE-supported Phase II Centers for Chemical Innovations (CCI) and CHE-supported facilities or institutes listed below and their preferred contacts for the purposes of this solicitation are provided on the program website listed in section IV. OTHER INFORMATION. The eligible partners are:

NSF Center for Sustainable Polymers <https://csp.umn.edu/>, POC: Dr. Marc A. Hillmyer, email: hillmyer@umn.edu

NSF Center for Sustainable Nanotechnology <https://susnano.wisc.edu/>, POC: Dr. Robert Hamers, email: rjhamers@wisc.edu

NSF Center for Genetically Encoded Materials <https://gem-net.net/>, POC: Dr. Sarah Smaga, email: sarah.smaga@berkeley.edu

NSF Center for Synthetic Organic Electrochemistry <https://cci.utah.edu/>, POC: Dr. Shelley Minter, email: minter@chem.utah.edu.

NSF Center for the Chemistry of Molecularly Optimized Networks <https://monet.duke.edu/>, POC: Dr. Stephen Craig, email: monet-cci@duke.edu

NSF Molecular Sciences Software Institute <https://molssi.org/>, POC: Dr. T. Daniel Crawford, email: crawdadt@vt.edu

NSF's ChemMatCARS <https://chemmatcars.uchicago.edu/>, POC: Dr. Binhua Lin, email: blin@uchicago.edu

NSF Molecule Maker Lab Institute, AI Institute <https://moleculemaker.org/>, POC: Dr. Huimin Zhao, email: zhao5@illinois.edu

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 FastLane or Grants.gov.

- 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) 292-8134 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) 292-8134 or by e-mail from nsfpubs@nsf.gov.

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.

In addition to the guidance in the PAPPG and NSF Grants.gov Application Guide, the following items should be included and/or addressed in the proposal:

NSF Cover Sheet: When designating the Unit of consideration, Proposals should be submitted to the Division of Chemistry - Broadening Participation. The title format is: PREC Track 1:..... or PREC Track 2:.....

PREC Track 1

- 1. Project Description (limit 15 pages).** This section should be completed according to the general guidelines detailed in the NSF PAPPG, including the requirement for a separate section labeled "Broader Impacts." In addition, it should include:
 - a. List of Participants (limit 1 page).* Provide a list of participating faculty and/or scientific personnel from both the lead institution and from the partnering center, institute or facility. List each faculty participant by full name, and their institutional and departmental affiliation. Note: For all Senior Personnel listed a Biographical Sketch, a Current and Pending Support form and a Collaborators and Other Affiliations form must be included in the corresponding sections of the proposal.
 - b. Partnership Vision Statement (limit 1 page).* The ultimate goal of PREC is to increase diversity in Chemistry. This can be achieved through the establishment of a research and education partnership. To this end, each proposal must emphasize the plan to form a cohesive research and education partnership where recruitment, retention, and degree attainment of historically excluded and underserved students (i.e. the PREC pathway) can be achieved and monitored. In this section of the proposal, the PREC pathway towards diversity is succinctly described, and a clear and concise vision for the proposed partnership, i.e., the framework, is provided by describing its overall research and education goals, along with the diversity objectives.
 - c. Results from Prior NSF Support (limit 2 pages).* This section should be completed according to the general guidelines detailed in the NSF PAPPG. In addition, PREC proposals may use this section to describe their scientific and educational achievements under prior NSF support. Collaborative research and related activities funded by other agencies may also be included here.
 - d. Research Description (limit 7 pages).* Provide a concise description of the research goals and intellectual focus of the partnership, and describe the planned research and education activities in sufficient detail to enable assessment of their scientific merit and broader impacts.

Two sections must be included in the Research Description that address the following:

 - i. Define the research scope of the partnership. Both partners must define the common intellectual interests to build a scientific partnership. In this section, the purpose of the research, along with the foreseen challenges to accomplish it must be described. In addition, expected outcomes of the research effort must be provided.
 - ii. Describe the role and intellectual contribution of each faculty member associated with the PREC, both at the lead institution and at the Center, institute or facility; briefly outline the resources available and plans to accomplish the research goals. Use **bold-face** type for the **name of each senior personnel** wherever it occurs.
 - e. Partnership Impacts (limit 4 pages).* Provide a concise description of the potential impacts of the partnership.
 - i. PREC partnerships present an opportunity for advancement for both partners in diversity and research capacity. In this section, the starting point of each institution should be described in terms of diversity and research capacity for all partners involved. Define the starting point or current status in each component of the recruitment/retention/degree attainment pathway that will be the focus of the PREC partnership. Describe the corresponding desired end points (goals). Which segment(s) of the community will be the focus of efforts (undergraduates, graduates, postdocs, faculty)?
 - ii. Describe the proposed strategy for increased recruitment, retention, and/or degree attainment in the PREC pathway. Each partnership will identify which step(s) of the pathway will be tackled for the duration of the award. The proposed strategy is formed by either pre-existing or newly developed research and education elements within the partnership framework described in the section *Partnership Vision Statement*. Provide a brief description of such elements and how they will help advance diversity for both partners and address the PREC pathway. Identify challenges and possible solutions.
 - iii. Impact of partnership both on the minority-serving institution and the CHE-supported center, institute, and/or facility. The PREC program is designed to bring benefits to both partners in both diversity and research output. Describe the potential outcomes of building the PREC pathway in the context of inclusive participation and diversity in chemistry research for both partners.
 - iv. Identify how gains from establishing the partnership framework and building the PREC pathway might extend more broadly and affect non-participants.
- 2. References Cited.** List only references cited in the Project Description. See the PAPPG for format instructions. Noncompliance with NSF guidelines may result in the full proposal being returned without review.
- 3. Budget pages and budget justification.** Complete budget according to the instructions in the PAPPG. Include budget pages for each year of support. A three-year cumulative budget will be automatically generated by the system. Provide a three-year summary budget justification that may not exceed a total of five pages. Provide separate budget pages for the lead institution and for each organization receiving a subaward. Provide a separate budget justification, up to five pages, for each subaward.
- 4. Facilities, Equipment and Other Resources.** This section should be prepared in accordance with the PAPPG, and should provide an aggregated narrative description of the resources that the organizations will provide to the project, should it be funded. For purposes of this solicitation, resources such as space, faculty release time, faculty and staff positions, capital equipment, access to existing facilities, collaborations, and support for outreach efforts should be addressed, for both the lead institution and the partner.
- 5. Supplementary Documentation.**
 - **Letter(s) of Collaboration from Partner (Limit of 2 pages).** The Director of the partnering CHE center, institute or facility must provide a detailed letter of collaboration that outlines the intellectual role of the center, institute or facility in the partnership, as well as the commitment, track record and future plans for inclusive participation of underrepresented groups in STEM. Include a plan for the continuation of the partnership in the event that CHE support to the partner ends before the PREC award does.

- o **Letter of Collaboration from Lead Institution (Limit of 2 pages).** A university official (Department Chair and/or Dean) from the lead institution must provide a letter of collaboration describing the support that will be provided by the host institution for the proposed activities. This should be narrative in nature and must not include any quantifiable financial information.
- o **Statement of Eligibility (Limit 1 page).** An Authorized Organizational Representative from the lead institution must provide a statement certifying that the submitting institution is in compliance with the eligibility requirements of this solicitation (see "Eligible Institutions of Higher Education" section).

Please note that letters of recommendation for the PI or other letters of support for the project are not permitted.

PREC Track 2

1. **Project Description (limit 24 pages).** This section should be completed according to the general guidelines detailed in the NSF PAPPG. In addition, it should include:

- a. *List of Participants (limit 1 page).* Provide a list of participating faculty and/or scientific personnel from both the lead institution, other partnering MSIs, and from the partnering center, institute or facility. List each faculty participant by full name, and her/his institutional and departmental affiliation. Note: For all Senior Personnel listed a Biographical Sketch, a Current and Pending Support form and a Collaborators and Other Affiliations form must be included in the corresponding sections of the proposal.
- b. *Partnership Vision Statement (limit 1 page).* The ultimate goal of PREC is to increase diversity in Chemistry. This can be achieved through the establishment of a research and education partnership. To this end, each proposal must emphasize the plan to form a cohesive research and education partnership where recruitment, retention, and degree attainment of historically excluded and underserved students (i.e. the PREC pathway) can be achieved and monitored. In this section of the proposal, the PREC pathway towards diversity is succinctly described, and a clear and concise vision for the proposed partnership, i.e., the framework, is provided by describing its overall research and education goals, along with the diversity objectives.
- c. *Results from Prior NSF Support (limit 5 pages).* This section should be completed according to the general guidelines detailed in the NSF PAPPG. In addition, PREC proposals may use this section to describe their scientific and educational achievements under prior NSF support. Collaborative research and related activities funded by other agencies may also be included here.
- d. *Research Description (limit 10 pages).* Provide a concise description of the research goals and intellectual focus of the partnership, and describe the planned research and education activities in sufficient detail to enable assessment of their scientific merit.

Two sections must be included in the Research Description that address the following:

- i. Define the research scope of the partnership. Both partners must define the common intellectual interests to build a scientific partnership. In this section, the purpose of the research, along with the foreseen challenges to accomplish it must be described. In addition, expected outcomes of the research effort must be provided.
 - ii. Describe the role and intellectual contribution of each faculty member associated with the PREC, both at the lead institution and at the center, institute and/or facility; briefly outline the resources available and plans to accomplish the research goals. Use **bold-face** type for the **name of each senior personnel** wherever it occurs.
- e. *Partnership Impacts (limit 6 pages).* Provide a concise description of the potential impacts of the partnership.
 - i. PREC partnerships present an opportunity for advancement for both partners in diversity and research capacity. In this section, the starting point of each institution should be described in terms of diversity and research capacity for all partners involved. Define the starting-point or current status in each component of the recruitment/retention/degree attainment pathway. Describe the corresponding desired end points (goals). Which segment(s) of the community will be for focus of efforts (undergraduates, graduates, postdocs, faculty)?
 - ii. Describe the proposed strategy for increased recruitment, retention, and/or degree attainment in the PREC pathway. Each partnership will identify which step(s) of the pathway will be tackled for the duration of the award. The proposed strategy is formed by either pre-existing or newly developed research and education elements within the partnership framework described in the section *Partnership Vision Statement*. Provide a brief description of such elements and how they will help advance diversity for both partners and address the PREC pathway. Identify challenges and possible solutions.
 - iii. Impact of Partnership both on the minority-serving institution and the CHE supported center, institute, and/or facility. The PREC program is designed to bring benefits to both partners in both diversity and research output. Describe the potential outcomes of building the PREC pathway in the context of inclusive participation and diversity in chemistry researchers for both partners.
 - iv. Identify how gains from establishing the partnership framework and building the PREC pathway might extend more broadly and affect non-participants.
 - v. Describe how increases in diversity, research and education outputs will be evaluated (internally and/or externally). Coherently with the proposed PREC pathway and devised strategies, include a plan for self-assessment and evaluation of recruitment, and/or retention, and/or degree attainment in the minority-serving institution as well as plans to evaluate diversity enhancement in the partner institution. Project assessment and evaluation is partnership-specific and should emphasize increase in both diversity as well as research and education quality and quantity measured relative to the beginning of the award. Describe the specific metrics to be used that are expected of successful PRECs.
 - f. *Management Plan (limit 1 page).* Describe the plans for the administration of the PREC, including the functions of key personnel. Describe the plans for administering the collaborative programs with the Partner organization and how decisions will be made and implemented. Include an organizational chart. Specify personnel responsible for student mentoring at all sites.
2. **References Cited.** List only references cited in the Project Description. See the PAPPG for format instructions. Noncompliance with NSF guidelines may result in the full proposal being returned without review.
 3. **Budget pages and budget justification.** Complete budget according to the instructions in the PAPPG. Include budget pages for each year of support. A three-year cumulative budget will be automatically generated by the system. Provide a three-year summary budget justification that may not exceed a total of five pages. Provide separate budget pages for the lead institution and for each organization receiving a subaward. Provide a separate budget justification, up to five pages, for each subaward.
 4. **Facilities, Equipment and Other Resources.** This section should be prepared in accordance with the PAPPG, and should provide an aggregated narrative description of the resources that the organizations will provide to the project, should it be funded. For purposes of this solicitation, resources such as space, faculty release time, faculty and staff positions, capital equipment, access to existing facilities, collaborations, and support for outreach efforts should be addressed, for both the lead institution and the partner.
 5. **Supplementary Documentation.**
 - o **Letter(s) of Collaboration from Partner (Limit of 2 pages).** The Director of the partnering CHE center, institute or facility must provide a detailed letter of collaboration that outlines the intellectual role of the center, institute or facility in the partnership, as well as the commitment, track record and future plans for inclusive participation of underrepresented groups in STEM. Include a plan for the continuation of the partnership in the event that CHE support to the partner ends before the PREC award does.

- **Letter of Collaboration from Lead Institution (Limit of 2 pages).** A university official (Department Chair and/or Dean) from the lead institution must provide a letter of collaboration describing the support that will be provided by the host institution for the proposed activities. This should be narrative in nature and must not include any quantifiable financial information.
- **Statement of Eligibility (Limit 1 page).** An Authorized Organizational Representative from the lead institution must provide a statement certifying that the submitting institution is in compliance with the eligibility requirements of this solicitation (see "Eligible Institutions of Higher Education" section).

Please note that letters of recommendation for the PI or other letters of support for the project are not permitted.

B. Budgetary Information

Cost Sharing:

Inclusion of voluntary committed cost sharing is prohibited.

Other Budgetary Limitations:

A Track 1 proposed budget can be up to \$300,000 per year for 3 years.

A Track 2 proposed budget can be up to \$600,000 per year for 3 years.

Budget Preparation Instructions:

The aggregate budget for a Track 1 PREC should not exceed \$300,000 per year for three years for a total of not more than \$900,000. The focus of a Track 1 PREC is on establishing, developing, and/or expanding the PREC pathway through utilization of research and education strategies and resources. The budget should reflect that and may include support for students, postdocs, and faculty. Travel between the partners, for seminars, workshops, research, and mentoring is expected and student, postdoc, and faculty support can include stipends, housing, meals, travel, and laboratory use fees. Modest research supplies and equipment requests can be included if justified.

The aggregate budget for a Track 2 PREC should not exceed \$600,000 per year for three years for a total of not more than \$1,800,000. A Track 2 PREC can include items similar to a Track 1 PREC but will expand on the number of supported individuals. The support for research and educational components may also be expanded. In addition, it is recognized that the expected teaching and service duties of faculty at some MSIs are high enough to prevent meaningful and sustainable research involvement. Therefore support for course reductions can be included, not to exceed one course per semester for each PI and co-PI as can be accommodated and justified in the budget. Subawards to partnering institutions, centers, facilities, and institutes may be included as needed. Track 2 PREC grantees should expect one site visit held at the lead institution or one reverse site visit to be held at the discretion of the National Science Foundation during the course of the award. Site visits should be accounted for in the budget.

Both Track 1 and Track 2 PREC grantees should plan for a PI meeting during year 2. This will include the PI and co-PIs from the host institution and the non co-PI senior personnel. Travel to this PI meeting should be accounted for in the travel budget.

C. Due Dates

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

January 21, 2022

D. FastLane/Grants.gov Requirements

For Proposals Submitted Via FastLane:

To prepare and submit a proposal via FastLane, see detailed technical instructions available at: <https://www.fastlane.nsf.gov/a1/newstan.htm>. For FastLane user support, call the NSF Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov. The NSF 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 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 other underrepresented groups 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.

Additional Solicitation Specific Review Criteria

The PREC proposals will also be evaluated on the following:

- Intellectual merit of the research and the potential impacts of the research and education partnership for both the Lead Institution and the CHE-supported center, institute or facility.
- Goals of the proposed partnership that enable the PREC pathway through increasing recruitment, retention, and degree attainment by underrepresented minorities in chemistry.
- Roles of the MSI and the CHE-supported center, institute, or facility in the partnership.
- Student/faculty exchange plan between partners as well as student mentoring.
- Adequacy of budget to the proposed activities.
- For Track 2: Assessment and evaluation plans of the partnership.

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.

Grantees may be asked to participate in program-wide assessment and evaluation activities which may include submitting additional information throughout the award period.

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:

- Rebecca Peebles, telephone: (703) 292-8809, email: rpeebles@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 (FASSED) 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) 292-8134
- **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
Policy Office, Division of Institution and Award Support

Office of Budget, Finance, and Award Management
National Science Foundation
Alexandria, VA 22314

Policies and Important Links	Privacy	FOIA	Help	Contact NSF	Contact Web Master	SiteMap
	National Science Foundation, 2415 Eisenhower Avenue, Alexandria, Virginia 22314, USA Tel: (703) 292-5111, FIRS: (800) 877-8339 TDD: (703) 292-5090 or (800) 281-8749					Text Only