

# NSF 24-540: Established Program to Stimulate Competitive Research (EPSCoR): Workshop Opportunities

## Program Solicitation

### Document Information

#### Document History

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[View the program page](#)



**National Science Foundation**  
Office of Integrative Activities

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

Proposals Accepted Anytime

Submission of a Concept Outline, followed by an invitation from an NSF EPSCoR Program Officer to submit a full proposal, is required before the submission of a full workshop proposal. Concept Outlines may be submitted to EPSCoR via email at any time.



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## Important Information And Revision Notes

- Submission of a Concept Outline, followed by an invitation from an NSF EPSCoR Program Officer to submit a full proposal, is **required** before the submission of a full workshop proposal.
- In this solicitation, conferences and conference proposals<sup>1</sup> will be referred to as workshops and workshop proposals.
- Maximum budget for workshops has been increased to \$200,000.
- Virtual workshop proposals are allowed.
- Institutional eligibility has been clarified.
- Allowable workshop topics have been expanded to include activities for the creation of center-level partnerships.

<sup>1</sup>See the NSF Proposal and Award Policies and Procedures Guide (PAPPG) Chapter II.F.9.

Any proposal submitted in response to this solicitation should be submitted in accordance with the [NSF Proposal & Award Policies & Procedures Guide](#) (PAPPG).

## Summary Of Program Requirements

### General Information

#### Program Title:

Established Program to Stimulate Competitive Research (EPSCoR): Workshop Opportunities (EPS-WO)

#### Synopsis of Program:

The Established Program to Stimulate Competitive Research (EPSCoR) is designed to fulfill the mandate of the National Science Foundation (NSF) to promote scientific progress nationwide. NSF EPSCoR facilitates the establishment of partnerships among academic institutions, government, industry, and non-profit sectors that are designed to promote sustainable improvements in an EPSCoR-eligible jurisdiction's research infrastructure, Research and Development (R&D) capacity, and R&D competitiveness. Eligibility to participate in NSF EPSCoR funding opportunities, including the EPSCoR Workshop Opportunities program, is described on the EPSCoR website (see [criteria for eligibility link](#)).

EPSCoR welcomes proposals for workshops only from institutions within [EPSCoR-eligible jurisdictions](#) (i.e. states, territories, commonwealths). These workshops must focus on innovative ways to address multi-jurisdictional efforts on themes of regional or national importance with relevance to the goals and mission of [NSF](#) and [EPSCoR](#).

**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.*

- Pinhas Ben-Tzvi, telephone: (703) 292-8246, email: [pbentzvi@nsf.gov](mailto:pbentzvi@nsf.gov)
- Benjamin J. McCall, telephone: (703) 292-7916, email: [bjmccall@nsf.gov](mailto:bjmccall@nsf.gov)

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

- 47.041 --- Engineering
- 47.049 --- Mathematical and Physical Sciences
- 47.050 --- Geosciences
- 47.070 --- Computer and Information Science and Engineering
- 47.074 --- Biological Sciences
- 47.075 --- Social Behavioral and Economic Sciences
- 47.076 --- STEM Education
- 47.079 --- Office of International Science and Engineering
- 47.083 --- Office of Integrative Activities (OIA)
- 47.084 --- NSF Technology, Innovation and Partnerships

**Award Information**

**Anticipated Type of Award:** Standard Grant

**Estimated Number of Awards:** 1 to 20

Up to 20 awards for in-person, virtual, or hybrid workshops annually (pending the quality of proposals and availability of funds). Awards will be funded for up to one year.

**Anticipated Funding Amount:** \$1,500,000

The anticipated funding amount applies to the current fiscal year, with similar amounts in subsequent years, pending quality of proposals and availability of funds. Proposal budgets for workshops may request up to \$200,000 for a project period, but proposals requesting lower amounts are also welcome. Workshop proposals that exceed the maximum budget allowable for this solicitation may be submitted as a workshop proposal using the NSF PAPPG conference proposal submission guidance, rather than through this solicitation, with prior approval of a cognizant NSF EPSCoR Program Officer.

**Eligibility Information**

**Who May Submit Proposals:**

Proposals may only be submitted by the following:

- Proposals may be submitted only from institutions or organizations within EPSCoR-eligible jurisdictions. Eligibility to participate in the EPSCoR Workshop Opportunities program is described on [EPSCoR's website](#).

Within EPSCoR-eligible jurisdictions, proposals may be submitted only by the following:

- Institutions of higher education (PhD-granting and non-PhD-granting), acting on behalf of their faculty members, that are accredited in and have a campus in the United States, its territories, or possessions.
- Non-profit, non-degree-granting domestic U.S. organizations, acting on behalf of their employees, that include (but are not limited to) independent museums and science centers, observatories, research laboratories, professional societies, and similar organizations that are directly associated with the Nation's research or educational activities. These organizations must have an independent, permanent administrative organization (e.g., an office of sponsored research) located in the United States, its territories, or possessions, and have 501(c)(3) tax status.
- Tribal Nations: An American Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges as a federally recognized tribe pursuant to the Federally Recognized Indian Tribe List Act of 1994, 25 U.S.C. §§ 5130-5131.

**Who May Serve as PI:**

There are no restrictions or limits.

**Limit on Number of Proposals per Organization:**

There are no restrictions or limits.

**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 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](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](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):

Proposals Accepted Anytime

Submission of a Concept Outline, followed by an invitation from an NSF EPSCoR Program Officer to submit a full proposal, is required before the submission of a full workshop proposal. Concept Outlines may be submitted to EPSCoR via email at any time.

### **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:**

Standard NSF reporting requirements apply.

## **I. Introduction**

### **A. EPSCoR Mission and Goals**

The mission of EPSCoR is to advance excellence in science and engineering research and education to achieve sustainable increases in research, education, and training capacity and competitiveness that will enable EPSCoR jurisdictions to have increased engagement in areas supported by NSF.

NSF EPSCoR goals are to:

- catalyze the development of research capabilities and the creation of new knowledge that expand jurisdictions' contributions to scientific discovery, innovation, learning, and knowledge-based prosperity;
- establish sustainable Science, Technology, Engineering, and Mathematics (STEM) education, training, and professional development pathways that advance jurisdiction-identified research areas and workforce development;
- broaden direct participation of diverse individuals, institutions, and organizations in science and engineering research and education initiatives;
- effect sustainable engagement of participants and partners, the jurisdiction, the national research community, and the general public through data-sharing, communication, outreach, and dissemination; and,
- impact research, education, and economic development at academic, government, and private sector levels.

## **II. Program Description**

### **EPSCoR Workshop Opportunities Program Description**

NSF EPSCoR welcomes proposals for workshops in areas of science and engineering that advance the program's goals and engage a broad community of investigators or practitioners, while including the intentional involvement of the EPSCoR community. NSF EPSCoR workshops aim to bring communities of thought together to discuss recent research or

education findings, explore topics in emerging areas of science and engineering, foster innovative collaborations, expose researchers or trainees to new research and education tools or techniques, or respond to NSF EPSCoR calls for workshops on specific topics.

### **Expectations of EPSCoR Workshop Proposals**

Proposals may address any topic, including the exploration of topic areas that have been described as NSF priorities. For EPSCoR workshop proposals, applicants should demonstrate how the topic is of importance to relevant STEM field(s) and include evidence that the topic will engage and be of particular interest to the greater EPSCoR community. EPSCoR workshop proposal topics may also include proposed activities for the creation of center-level partnerships. Topics related to center-level investments may include but are not limited to [Engineering Research Centers](#), [Science and Technology Centers](#), [Regional Innovation Engines](#), and other current or future federal opportunities. In addition to offering a compelling topic, the goals and desired outcomes, anticipated products, and benefits that the workshop will have for its participants should be explicitly described. Successful proposals will also demonstrate that the team has worked to include the participation of the full spectrum of diverse talent in STEM at every level—from the advisory committee and leadership to the speakers and participants. A tentative agenda that includes suggested speakers, and letters of support that lend evidence of participation from key participants or collaborators, are also qualities of a strong EPS-WO proposal. EPS-WO proposals should include a plan for communicating workshop outcomes and disseminating workshop products. EPS-WO proposals should also include an evaluation plan that assesses whether the goals of the workshop have been achieved.

Successful workshop proposals will:

- include a compelling rationale, with clear goals and desired outcomes; a committed leadership team; institutional support; and leveraged resources.
- address multi-jurisdictional efforts, priorities, or interests that require collaboration for optimal success.
- address major regional or national themes of relevance to EPSCoR's goals and NSF's mission.
- describe the inclusion of individuals from groups underrepresented in STEM. Efforts to do so must be evident at all levels from the planning committee and speakers to the workshop participants.
- include institutions of higher education that serve populations that are traditionally underrepresented in STEM (defined as minority-serving institutions, women's colleges, or institutions where the majority of students are students with disabilities).

### **Additional Guidance**

- Workshops are **not** intended for *single-institution* activities.
- Speakers from non-EPSCoR institutions may be involved in the workshop, but funding for their travel expenses must be included in the Participant Support Cost budget category. No funds may be budgeted for non-EPSCoR institutions.
- Each funded workshop should result in a publicly-disseminated workshop report that should be posted on the relevant jurisdictions' web sites and must include:
  - The metrics and measures of workshop programmatic success.
  - The extent of the inclusion of individuals from groups underrepresented in STEM through evaluation and feedback.
  - The extent of the inclusion of institutions of higher education that serve populations that are traditionally underrepresented in STEM (defined as minority-serving institutions, women's colleges, or institutions where the majority of students are students with disabilities).
  - A plan for widespread dissemination of results.
  - A list of workshop participants.

- A comprehensive discussion of the workshop's products and specific implementation plans for the next steps.

### **III. Award Information**

**Anticipated Type of Award:** Standard Grant

**Estimated Number of Awards:** up to 20

**Anticipated Funding Amount:** \$1,500,000

The anticipated funding amount applies to the current fiscal year, with similar amounts in subsequent years, pending quality of proposals and availability of funds. Proposal budgets for workshops may request up to \$200,000 for a project period, but proposals requesting lower amounts are also welcome. Workshop proposals that exceed the maximum budget allowable for this solicitation may be submitted as a workshop proposal using the NSF PAPPG conference proposal submission guidance, rather than through this solicitation, with prior approval of a cognizant NSF EPSCoR Program Officer.

### **IV. Eligibility Information**

#### **Who May Submit Proposals:**

Proposals may only be submitted by the following:

- Proposals may be submitted only from institutions or organizations within EPSCoR-eligible jurisdictions. Eligibility to participate in the EPSCoR Workshop Opportunities program is described on [EPSCoR's website](#).

Within EPSCoR-eligible jurisdictions, proposals may be submitted only by the following:

- Institutions of higher education (PhD-granting and non-PhD-granting), acting on behalf of their faculty members, that are accredited in and have a campus in the United States, its territories, or possessions.
- Non-profit, non-degree-granting domestic U.S. organizations, acting on behalf of their employees, that include (but are not limited to) independent museums and science centers, observatories, research laboratories, professional societies, and similar organizations that are directly associated with the Nation's research or educational activities. These organizations must have an independent, permanent administrative organization (e.g., an office of sponsored research) located in the United States, its territories, or possessions, and have 501(c)(3) tax status.
- Tribal Nations: An American Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges as a federally recognized tribe pursuant to the Federally Recognized Indian Tribe List Act of 1994, 25 U.S.C. §§ 5130-5131.

#### **Who May Serve as PI:**

There are no restrictions or limits.

#### **Limit on Number of Proposals per Organization:**

There are no restrictions or limits.

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

There are no restrictions or limits.

## 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 Research.gov or Grants.gov.

- Full Proposals submitted via Research.gov: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the *NSF Proposal and Award Policies and 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](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](mailto:nsfpubs@nsf.gov). The Prepare New Proposal setup will prompt you for the program solicitation number.
- 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](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](mailto:nsfpubs@nsf.gov).

See PAPPG Chapter II.D.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.

Submission of a Concept Outline, followed by an invitation from an NSF EPSCoR Program Officer to submit a full proposal, is **required** before the submission of a full workshop proposal. Concept Outlines may be submitted via email to [nsfepscor@nsf.gov](mailto:nsfepscor@nsf.gov) at any time or directly to any cognizant Program Officer listed in the solicitation.

The workshop proposal development process is outlined below.

- Identify and develop the workshop theme.
  - Identify the rationale and theme or topic of the workshop.
  - Convey EPSCoR community interest in the topic, which should be substantial and gauged by appropriate means (for example use of a survey or focused conversations).
  - Form an advisory committee to verify and develop the concept within the greater body of knowledge in the field, ensuring that it is not duplicative of other efforts, and to obtain data supporting the theme or concept.
- Draft a Concept Outline.
  - Detailed planning of the workshop, the interest of the EPSCoR community, and the workshop preparation timeline should be outlined in a Concept Outline, which must not exceed 5 pages. During the Concept Outline preparation process, proposers are encouraged to:
    - Develop a compelling rationale with clear goals and desired outcomes.
    - Determine the availability and interest of prospective speakers and participants.
    - Address the recruitment and inclusion of groups underrepresented in STEM areas that include the leadership team, speakers, participants.
    - Develop an estimated budget and budget justification, schedule of activities, and a proposed target date for the workshop.



- Discuss methods of dissemination, evaluation and assessment, and desired outcomes/deliverables.
- Submit a Concept Outline via email to [nsfepscor@nsf.gov](mailto:nsfepscor@nsf.gov) or directly to any cognizant Program Officer listed in the solicitation.

### **EPS-WO Full Proposal Preparation Instructions**

- Full proposals should:
  - Incorporate feedback obtained from NSF EPSCoR from the Concept Outline.
  - Include all five categories of information described above for Concept Outlines.
  - Explicitly address one or more of the EPSCoR goals listed in section I.A above.
  - Follow the guidelines for Conference proposals contained in the [NSF PAPPG](#), Chapter II.F.9.
  - Select the “conference” proposal type in [Research.gov](#) or [Grants.gov](#).
  - Include the email from a Program Officer inviting the PI to submit a full proposal as a Supplementary Document entitled "Program Officer Concurrence Email."

### **Typical Timeline:**

- One month for NSF EPSCoR to review the Concept Outline.
- Six months from full proposal submission to funding decision.

It is recommended to begin the Concept Outline development process at least 12 months before the envisioned workshop, when possible, to allow ample time for proposal development and review.

### **B. Budgetary Information**

#### **Cost Sharing:**

Inclusion of voluntary committed cost sharing is prohibited.

#### **Other Budgetary Limitations:**

The anticipated funding amount applies to the current fiscal year, with similar amounts in subsequent years, pending quality of proposals and availability of funds. Proposal budgets for workshops may request up to \$200,000 for a project period.

### **C. Due Dates**

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

Proposals Accepted Anytime

Submission of a Concept Outline, followed by an invitation from an NSF EPSCoR Program Officer to submit a full proposal, is required before the submission of a full workshop proposal. Concept Outlines may be submitted to EPSCoR via email at any time.

Submission of a Concept Outline, followed by an invitation from an NSF EPSCoR Program Officer to submit a full proposal, is **required** before the submission of a full workshop proposal. Concept Outlines may be submitted to EPSCoR via email at any time.

### **D. Research.gov/Grants.gov Requirements**

#### **For Proposals Submitted Via Research.gov:**

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/ProposalPreparation](https://www.research.gov/research-portal/appmanager/base/desktop?_nfpb=true&_pageLabel=research_node_display&_nodePath=/researchGov/Service/Desktop/ProposalPreparation) For Research.gov user support, call the Research.gov Help Desk at 1-800-381-1532 or e-mail [rgov@nsf.gov](mailto:rgov@nsf.gov). The Research.gov Help Desk answers general technical questions related to the use of the Research.gov system. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this funding opportunity.

#### **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](mailto: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 Research.gov for further processing.

The NSF [Grants.gov Proposal Processing in Research.gov informational page](#) provides submission guidance to applicants and links to helpful resources including the NSF [Grants.gov Application Guide](#), [Grants.gov Proposal Processing in Research.gov how-to guide](#), and [Grants.gov Submitted Proposals Frequently Asked Questions](#). Grants.gov proposals must pass all NSF pre-check and post-check validations in order to be accepted by Research.gov at NSF.

When submitting via Grants.gov, NSF strongly recommends applicants initiate proposal submission at least five business days in advance of a deadline to allow adequate time to address NSF compliance errors and resubmissions by 5:00 p.m. submitting organization's local time on the deadline. Please note that some errors cannot be corrected in Grants.gov. Once a proposal passes pre-checks but fails any post-check, an applicant can only correct and submit the in-progress proposal in Research.gov.

Proposers that submitted via 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/](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 *Leading the World in Discovery and Innovation, STEM Talent Development and the Delivery of Benefits from Research - NSF Strategic Plan for Fiscal Years (FY) 2022 - 2026*. 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.D.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.D.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.

## **B. Review and Selection Process**

Proposals submitted in response to this program solicitation will be reviewed by Ad hoc Review and/or Internal NSF Review.

Proposals will be reviewed by external (ad hoc) and/or internal (NSF) reviewers, depending on the budget and scope of each proposal.

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 proposers whether their proposals have been declined or recommended for funding within six months. Large or particularly complex proposals or proposals from new recipients 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 or the Division of Acquisition and Cooperative Support 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 an NSF Grants and Agreements Officer. 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](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](mailto: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](https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg).

## **Administrative and National Policy Requirements**

### **Build America, Buy America**

As expressed in Executive Order 14005, [Ensuring the Future is Made in All of America by All of America's Workers](#) (86 FR 7475), it is the policy of the executive branch to use terms and conditions of Federal financial assistance awards to maximize, consistent with law, the use of goods, products, and materials produced in, and services offered in, the United States.

Consistent with the requirements of the Build America, Buy America Act (Pub. L. 117-58, Division G, Title IX, Subtitle A, November 15, 2021), no funding made available through this funding opportunity may be obligated for an award unless all iron, steel, manufactured products, and construction materials used in the project are produced in the United States. For additional information, visit NSF's [Build America, Buy America](#) webpage.

### **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](https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg).

## **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:

- Pinhas Ben-Tzvi, telephone: (703) 292-8246, email: [pbentzvi@nsf.gov](mailto:pbentzvi@nsf.gov)

- Benjamin J. McCall, telephone: (703) 292-7916, email: [bjmccall@nsf.gov](mailto:bjmccall@nsf.gov)

For questions related to the use of NSF systems contact:

- NSF Help Desk: 1-800-381-1532
- Research.gov Help Desk e-mail: [rgov@nsf.gov](mailto: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](mailto: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.F.7 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](mailto: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 proposers 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 proposers 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:

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Reports Clearance Officer  
Policy Office, Division of Institution and Award Support  
Office of Budget, Finance, and Award Management  
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