

NSF 22-622: NSF's Eddie Bernice Johnson Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (INCLUDES) Initiative

Program Solicitation

Document Information

Document History

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National Science Foundation

Directorate for Biological Sciences
Directorate for Computer and Information Science and Engineering
Directorate for STEM Education
Directorate for Engineering
Directorate for Geosciences
Directorate for Mathematical and Physical Sciences
Directorate for Social, Behavioral and Economic Sciences
Directorate for Technology, Innovation and Partnerships
Office of Integrative Activities
Office of International Science and Engineering

Full Proposal Deadline(s) (due by 5 p.m. submitting organization's):

October 25, 2022

Fourth Tuesday in October, Annually Thereafter

Network Connectors

October 25, 2022

Fourth Tuesday in October, Every Other Year Thereafter

Design and Development Launch Pilots and Collaborative Change Consortia

October 24, 2023

Fourth Tuesday in October, Every Other Year Thereafter

Alliances

Full Proposal Target Date(s):

May 14, 2024

Second Tuesday in May, Annually Thereafter

Conferences

Submission Window Date(s) (due by 5 p.m. submitting organization's local time):

October 31, 2022 - October 30, 2023

October 31 - October 30, Annually Thereafter

Conferences



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Important Information And Revision Notes

- The Directorate for Technology, Innovation, and Partnerships (TIP) is a new NSF Directorate that participates in NSF's Eddie Bernice Johnson INCLUDES Initiative. TIP engages the nation's diverse talent in strengthening and scaling use-inspired and translational research. The INCLUDES Initiative encourages the submission of proposals that focus on scaling up broadening participation innovations and entrepreneurship in STEM.
- Letters of Intent are no longer required for proposal submissions.
- Investigators planning to submit a proposal are strongly encouraged to submit a one-page description of their proposal idea to nsfincludes@nsf.gov at least two months prior to proposal submission so that an INCLUDES program director can provide feedback on alignment of the idea with the INCLUDES Initiative's goals.
- All proposals must be submitted using Research.gov or Grants.gov.
- Proposals may be submitted for multiple project types under this solicitation, including a new project type - Collaborative Change Consortia.
- The number of organizations that may submit a collaborative proposal has increased from two organizations to three.
- Planning grant proposals will not be considered in this solicitation. Ideas for projects formerly funded by the INCLUDES Initiative as planning grants should be submitted as Design and Development Launch Pilot proposals.

Any proposal submitted in response to this solicitation should be submitted in accordance with the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) that is in effect for the relevant due date to which the proposal is being submitted. The NSF PAPPG is regularly revised and it is the responsibility of the proposer to ensure that the proposal meets the requirements specified in this solicitation and the applicable version of the PAPPG. Submitting a proposal prior to a specified deadline does not negate this requirement.

Summary Of Program Requirements

General Information

Program Title:

NSF's Eddie Bernice Johnson Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (INCLUDES) Initiative

Synopsis of Program:

In 2016, the National Science Foundation (NSF) unveiled a set of "Big Ideas," 10 bold, long-term research and process ideas that identify areas for future investment at the frontiers of science and engineering (see https://www.nsf.gov/news/special_reports/big_ideas/index.jsp). The Big Ideas represent unique opportunities to position our Nation at the cutting edge of global science and engineering leadership by bringing together diverse disciplinary perspectives to support convergence research. As such, when responding to this solicitation, even though proposals must be submitted to the Directorate for STEM Education (EDU) / Division of Equity for Excellence in STEM (EES), once received, the proposals will be managed by a cross-disciplinary team of NSF Program Directors.

The INCLUDES Initiative is a comprehensive, national effort to enhance U.S. leadership in science, technology, engineering, and mathematics (STEM) discovery and innovation, focused on NSF's commitment to ensuring accessibility and inclusivity in STEM fields, as communicated in the [NSF Strategic Plan for Fiscal Years \(FY\) 2022 - 2026](#). The vision of the INCLUDES Initiative is to catalyze the STEM enterprise to work collaboratively for inclusive change, resulting in a STEM workforce that reflects the Nation's population. More specifically, the INCLUDES Initiative seeks to motivate and accelerate collaborative infrastructure building to sustain systemic change to broaden participation in STEM fields at scale. Significant advancement of the INCLUDES Initiative's goals will result in a new generation of STEM talent and leadership to secure the Nation's future and long-term economic competitiveness.

With this solicitation, NSF offers support for five types of projects that connect and contribute to the National Network: (1) Design and Development Launch Pilots, (2) Collaborative Change Consortia, (3) Alliances, (4) Network Connectors, and (5) Conferences. The INCLUDES National Network is a multifaceted collaboration of agencies, organizations, and individuals working collectively to broaden participation in STEM. The INCLUDES National Network serves as a testbed for designing, implementing, studying, refining, and scaling collaborative change models and is composed of:

- INCLUDES funded projects
- Other NSF funded projects
- Subcommittee on Federal Coordination in STEM Education (FC-STEM) agencies
- Scholars engaged in broadening participation research and evaluation, and
- Organizations that support the development of talent from all sectors of society to build an inclusive STEM workforce.

All INCLUDES funded projects must operationalize five design elements of collaborative infrastructure - (1) shared vision, (2) partnerships, (3) goals and metrics, (4) leadership and communication, and (5) expansion, sustainability, and scale - to create systemic change that broadens participation in STEM.

Broadening Participation in STEM:

NSF recognizes the unique lived experiences of individuals from communities that are underrepresented and/or underserved in science, technology, engineering, and mathematics (STEM) and the barriers to inclusion and access to STEM education and careers. NSF highly encourages the leadership, partnership, and contributions in all NSF opportunities of individuals who are members of such communities supported by NSF. This includes leading and designing STEM research and education proposals for funding; serving as peer reviewers, advisory committee members, and/or committee of visitor members; and serving as NSF leadership, program, and/or administrative staff. NSF also highly encourages demographically diverse institutions of higher education (IHEs) to lead, partner, and contribute to NSF opportunities on behalf of their research and education communities. NSF expects that all individuals, including those who are members of groups that are underrepresented and/or underserved in STEM, are treated equitably and inclusively in the Foundation's proposal and award process.

NSF encourages IHEs that enroll, educate, graduate, and employ individuals who are members of groups underrepresented and/or underserved in STEM education programs and careers to lead, partner, and contribute to NSF opportunities, including leading and designing STEM research and education proposals for funding. Such IHEs include, but may not be limited to, community colleges and two-year institutions, mission-based institutions such as Historically Black Colleges and Universities (HBCUs), Tribal Colleges and Universities (TCUs), women's colleges, and institutions that primarily serve persons with disabilities, as well as institutions defined by enrollment such as Predominantly Undergraduate Institutions (PUIs), Minority-Serving Institutions (MSIs), and Hispanic Serving Institutions (HSIs).

"Broadening participation in STEM" is the comprehensive phrase used by NSF to refer to the Foundation's goal of increasing the representation and diversity of individuals, organizations, and geographic regions that contribute to STEM teaching, research, and innovation. To broaden participation in STEM, it is necessary to address issues of equity, inclusion, and access in STEM education, training, and careers. Whereas all NSF programs might support broadening participation components, some programs primarily focus on supporting broadening participation research and projects. Examples can be found on the NSF Broadening Participation in STEM website.

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.

- General inquiries may be addressed to:, telephone: (703) 292-2315, email: nsfincludes@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 or Continuing Grant or Cooperative Agreement

Estimated Number of Awards: 10 to 15

In any one competition, the INCLUDES Initiative anticipates funding up to:

- Two (2) Design and Development Launch Pilots
- Two (2) Collaborative Change Consortia
- One (1) Alliance
- Five (5) Network Connectors
- Five (5) Conferences

Alliances will be awarded as Cooperative Agreements

Anticipated Funding Amount: \$5,500,000

for all project types in each competition year.

Anticipated funding amount, number of awards, and average award size and duration are contingent upon the availability of funds.

Eligibility Information

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Institutions of Higher Education (IHEs): Two- and four-year IHEs (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Special Instructions for International Branch Campuses of US IHEs: If the proposal includes funding to be provided to an international branch campus of a US institution of higher education (including through use of sub-awards and consultant arrangements), the proposer must explain the benefit(s) to the project of performance at the international branch campus, and justify why the project activities cannot be performed at the US campus.

- Non-profit, non-academic organizations: Independent museums, observatories, research laboratories, professional societies and similar organizations located in the U.S. that are directly associated with educational or research activities.
- For-profit organizations: U.S.-based commercial organizations, including small businesses, with strong capabilities in scientific or engineering research or education and a passion for innovation.
- State and Local Governments
- 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:

An organization may serve as a lead organization on only one proposal per project type, not including conferences. Proposals that exceed the organizational limit will be returned without review. **No exceptions will be made.**

For Network Connectors, Design and Development Launch Pilots, and Conferences, full proposals must be submitted as a single submission from a lead organization, with other collaborating organizations included as subawardees.

Collaborative Change Consortia and Alliances may submit proposals in one of two ways:

- a single submission from a lead organization, with other collaborating organizations included as subawardees, OR
- separate submissions from a lead organization and two collaborating organizations, with any additional collaborating organizations included as subawardees.

See PAPPG Chapter II.E.3 for additional information on collaborative proposals.

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

An individual may serve as a PI or Co-PI on only one INCLUDES proposal per annual due date, not including conferences. Proposals that exceed the PI or Co-PI limit will be returned without review. **No exceptions will be made.**

A PI or co-PI of an active INCLUDES Alliance may not be a PI or co-PI on a proposal under this solicitation, if the Alliance would still be active at the start of the new award. This limit does not include conference proposals.

Prior INCLUDES funding is not required to be eligible to submit a proposal for any project type. The inclusion of former or current INCLUDES investigators in proposals is encouraged, but not required.

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=papppg.
- 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:**

Not Applicable

C. Due Dates

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

October 25, 2022

Fourth Tuesday in October, Annually Thereafter

Network Connectors

October 25, 2022

Fourth Tuesday in October, Every Other Year Thereafter

Design and Development Launch Pilots and Collaborative Change Consortia

October 24, 2023

Fourth Tuesday in October, Every Other Year Thereafter

Alliances

- **Full Proposal Target Date(s):**

May 14, 2024

Second Tuesday in May, Annually Thereafter

Conferences

- **Submission Window Date(s)** (due by 5 p.m. submitting organization's local time):

October 31, 2022 - October 30, 2023

October 31 - October 30, Annually Thereafter

Conferences

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:**

Additional award conditions apply. Please see the full text of this solicitation for further information.

Reporting Requirements:

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

I. Introduction

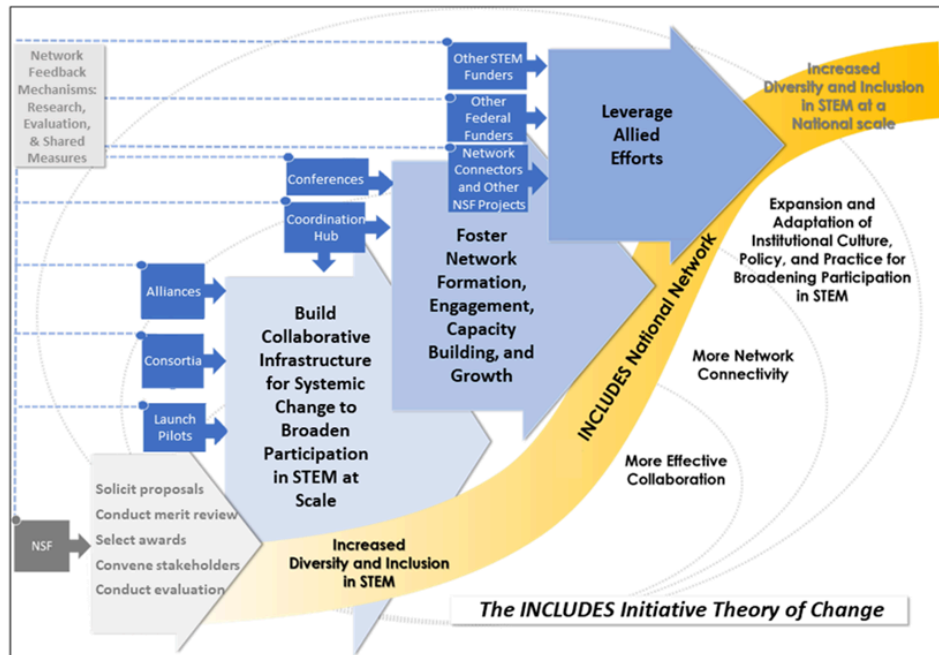
The vision of NSF's Eddie Bernice Johnson INCLUDES Initiative is to catalyze the STEM enterprise to work collaboratively for inclusive change, resulting in a STEM workforce that reflects the Nation's population. The INCLUDES Initiative seeks to broaden participation in STEM fields through a National Network. The National Network is composed of INCLUDES funded projects, other NSF-funded projects with broadening participation components, scholars engaged in broadening participation research and evaluation, Subcommittee on Federal Coordination in STEM Education (FC-STEM) agencies, and organizations that support the goals of the INCLUDES Initiative. INCLUDES is distinguished by its focus on collaborative infrastructure building to achieve systemic impacts and results at scale. The INCLUDES theory of change (see Exhibit 1) illustrates the projects, approaches, and outcomes that guide the program's work.

Inclusion of talent from all sectors of society in the STEM workforce is necessary for the health and vitality of science and engineering and its societal relevance. This solicitation seeks to support diverse perspectives, networks, and approaches. New and established partnerships may propose projects engaging with any educational level or context.

With this solicitation, NSF continues to offer opportunities to propose projects that: a) contribute rigorous research to the knowledge base about broadening participation in STEM and b) motivate and accelerate collaborative efforts to sustain systemic change and demonstrably broaden participation in STEM, especially in STEM fields that lack participation that reflects the talent throughout the Nation's population. Researchers and practitioners with experience and expertise in institutions committed to broadening participation are strongly encouraged to consider this opportunity.

Proposals must align with the four INCLUDES key principles, described below: (1) broadening participation in STEM, (2) enabling sustainable change in systems, (3) scaling up outcomes in ways that advance equity, and (4) building collaborative infrastructure. These key principles should be integrated throughout proposals and should align with the proposed activities.

Exhibit 1. The INCLUDES Initiative Theory of Change Illustrated



KEY PRINCIPLES

1. Broadening Participation in STEM

The INCLUDES Initiative seeks to improve collaborative efforts aimed at enhancing the preparation, participation, and contributions of the full spectrum of talents in STEM. Each project should address a specific broadening participation challenge. A broadening participation challenge is a clear, concise statement that describes the need being addressed by the project, the population of focus, and the intended unit of change (e.g., institutions, systems).

2. Enabling Sustainable Change in Systems

The INCLUDES Initiative aims to support projects that take actionable steps to transform policies, practices, relationships, approaches, and/or mindsets, with the goal of making STEM cultures more inclusive and broadening participation in STEM.

3. Scaling Up Outcomes in Ways That Advance Equity

The INCLUDES Initiative requires projects to scale up proven and promising strategies for broadening participation in STEM. Scaling up in equitable ways requires understanding who is most impacted by the broadening participation challenge being addressed and why and how they are affected. Projects that realize equitable scale must partner with the identified beneficiaries of the project's work in the development and implementation of plans to scale; scale up in ways that can be measured as equitable across the involved system(s); expand evidence-based practices and partnerships that address current and historical barriers to participation; and ensure that mechanisms for scale distribute power and resources across participating organizations.

4. Building Collaborative Infrastructure

All INCLUDES projects must operationalize five design elements of collaborative infrastructure in ways that catalyze and accelerate systemic change and lead to substantially broadened participation, relative to reported baseline measures. Collaborative infrastructure is a framework that guides organizations coming together to develop a shared goal or vision; mutually reinforcing activities; objectives and measures to map progress; plans for continuous communication; and potential for expansion, sustainability, and scale. INCLUDES projects must build collaborative infrastructure into their approach to broadening participation in STEM. The five design elements of collaborative infrastructure are:

1. Shared Vision: Networks and partnerships work collaboratively to develop a strategic plan centered on a shared vision to address an identified broadening participation challenge and achieve related outcomes.
2. Partnerships: Project teams consist of partnering organizations that engage in mutually reinforcing activities and act collaboratively to accomplish project goals.
3. Goals and Metrics: Progress toward well-defined, relevant goals and measurable objectives and outcomes is documented and communicated.
4. Leadership and Communication: Projects include internal and external communication plans and explain how they develop leadership capacity and distribute leadership within and among partnering organizations.
5. Expansion, Sustainability, and Scale: Projects describe their overall contribution to broadening participation in the nation's STEM workforce and carry out plans that will lead to the expansion, sustainability, and scale up of proven and promising approaches.

II. Program Description

With this solicitation, NSF invites proposals for five types of projects (described below) that connect and contribute to the National Network: (1) Design and Development Launch Pilots, (2) Collaborative Change Consortia, (3) Alliances, (4) Network Connectors, and (5) Conferences. Investigators planning to submit a proposal are strongly encouraged to submit a one-page description of their proposal idea to nsfincludes@nsf.gov at least three months prior to proposal submission. An INCLUDES program director with related expertise will review and provide feedback on the alignment of the idea with the solicitation.

Proposals that address broadening participation challenges not yet represented in the INCLUDES portfolio of projects are encouraged. Proposals that focus on broadening participation in STEM innovation and entrepreneurship are especially encouraged. For more information on funded INCLUDES projects, see: <https://www.nsf.gov/awardsearch/simpleSearchResult?queryText=nsf+includes>.

1. Design & Development Launch Pilots (DDLPs) explore new strategies and models for collaborative approaches to broadening participation in STEM. Successful proposals will identify a specific broadening participation challenge to address, measurable objectives, and collaborative partners, with explanation of the role of each partnering individual or organization. Successful pilot projects will test and deliver models that enable new collaborative efforts or new approaches to broaden participation in STEM.

DDLDP activities should engage appropriate communities in testing the feasibility of a process for change, building infrastructure for collaborative change, and identifying potential mechanisms for sustaining the efforts. Teams of organizations might come together locally, regionally, nationally, by disciplinary focus, or by other multisector categories. Early in the first year, partners are expected to refine their collective commitment to a common set of objectives and plans to achieve them. No later than the second year, successful teams are expected to carry out and report on results and share findings with the National Network and other stakeholders.

DDLDPs should facilitate innovative partnerships, networks, and theories of action for broadening participation in STEM, with the goal of establishing future alliances, centers, or other large-scale networks. DDLDPs can explore and build capacity for the development of collaborative infrastructure. Submissions from a broad range of diverse institutional partnerships, principal investigators, and contexts are encouraged.

The INCLUDES Initiative will not consider "planning grant" proposals in this solicitation. Ideas for projects formerly funded by the INCLUDES Initiative as planning grants should be submitted as DDLDP proposals.

Design and Development Launch Pilot proposals may request up to \$300,000 per year for up to two years. Prior INCLUDES support is not required to be eligible for a DDLDP award. A DDLDP award is not a required prerequisite to a proposal for other INCLUDES project types.

2. Collaborative Change Consortia are networks that implement, study, and scale up systemic strategies that address a critical broadening participation challenge in STEM. Collaborative Change Consortia build the infrastructure necessary to: 1) foster collaboration, 2) broaden participation in STEM **at city, state, or regional levels of impact** by operationalizing the five design elements of collaborative infrastructure, and 3) contribute rigorous and innovative research to the knowledge base about broadening participation in STEM. These projects should result in research findings and sustainable, replicable models for city, state, and/or regional implementation and impact.

Consortium partners work to achieve common goals through well-defined, common objectives and use lessons learned, promising practices, evidence-based mechanisms, the science of broadening participation, and research and evaluations from past and present efforts to transform systems in order to broaden participation in STEM at scale and provide new research.

Consortium proposals must include:

- a shared vision and strategy for broadening the participation of an identified population(s) in STEM, along with relevant metrics of progress and key milestones/goals to be achieved during the funding period and beyond;
- multi-sector partnerships and plans to build infrastructure to achieve progress on the project's goals;
- a framework for continuous communication, data management, capacity building, networking, expansion, sustainability, and visibility of the project network;
- a plan for contributing rigorous and innovative research to the knowledge base on broadening participation in STEM;
- a plan for contributing project evaluations, data, new scientific findings/discoveries, and promising practices to the INCLUDES National Network;
- planned connections and contributions to the National Network online community and the INCLUDES Coordination Hub;
- a logic model or other heuristic that identifies outcomes reflecting the implementation of systemic change at scale and progress toward developing an inclusive STEM enterprise.

Collaborative Change Consortia may, but are not required to, build on the work of current or previously-funded INCLUDES projects. A Consortium award is not a required prerequisite to a proposal for other INCLUDES project types.

Collaborative Change Consortium proposals may request up to \$1,000,000 per year for up to five years.

3. Alliances are large-scale networks that implement, study, and scale up systemic strategies that address a critical broadening participation challenge in STEM. Like Collaborative Change Consortia, Alliances build the infrastructure necessary to foster collaboration and broaden participation in STEM, but for Alliances, **the level of impact should be national** and supported by a backbone organization. Alliances engage partners to operationalize the five design elements of collaborative infrastructure; work to achieve common goals through well-defined, common objectives; contribute rigorous and innovative research to the knowledge base about broadening participation in STEM; leverage NSF's broadening participation investments; and use lessons learned, promising practices, evidence-based mechanisms, the science of broadening participation, and research and evaluations from past and present efforts to transform systems and broaden participation in STEM at scale. Alliances are required to:

- Develop a shared vision and strategy for broadening the participation of an identified population(s) in STEM, along with relevant metrics of progress and key milestones/goals to be achieved at a national level, during the funding period and beyond;
- Establish multi-sector partnerships and build infrastructure to achieve progress on the project's goals;
- Contribute rigorous and innovative research to the knowledge base on broadening participation in STEM;

- Establish a "backbone" (i.e., support) organization that provides a framework for continuous communication, data management, capacity building, networking, expansion, sustainability, and visibility of the project network beyond a single city, state, or region;
- Advance a logic model or other heuristic that identifies Alliance outcomes, reflecting the implementation of change at a national scale and progress toward developing an inclusive STEM enterprise;
- Collaborate with the INCLUDES Coordination Hub to share project evaluations, data, new scientific findings/discoveries, and promising practices with the INCLUDES National Network and build critical knowledge that enables measurable progress toward INCLUDES goals;
- Participate in a network of peer alliances and the INCLUDES National Network to achieve INCLUDES goals; and
- Work to build connections to other organizations and broadening participation stakeholders to join in and expand the INCLUDES National Network.

Alliance proposals may request up to \$2,000,000 per year for up to five years.

4. Network Connectors initiate or maintain linkages to the INCLUDES National Network for projects or partnerships that are not currently funded by the INCLUDES Initiative. Network connector proposals may be submitted by existing NSF-funded and non-NSF funded projects seeking funding to provide or participate in:

- new collaborations that expand the impact of active or previously-funded INCLUDES projects;
- new opportunities for collaboration across the INCLUDES National Network;
- novel ideas to bring a community of NSF-funded projects into the INCLUDES National Network;
- efforts to equitably scale up innovative and evidence-based approaches to broadening participation in STEM;
- NSF-funded research activities with the goal of broadening participation in STEM;
- development of shared goals, measures, and mutually reinforcing activities to build collaborative infrastructure for broadening participation in STEM;
- communicating knowledge and results from the NSF broadening participation portfolio of programs and projects, NSF Center-scale activities, or other major Foundation investments; or
- communicating findings from the science of broadening participation research community to the INCLUDES National Network, especially pertaining to new efforts to translate basic research into practice.

Network Connectors implement connections to NSF-funded or other existing projects and evidence-based approaches. A letter of collaboration from a leader of the existing project is needed. Institutions and organizations that are new to the National Network who are looking to adopt or adapt evidence-based practices that emerged from current or previously-funded INCLUDES projects are encouraged to apply.

Network connector proposals may request up to \$250,000 per year for up to two years. Requests that exceed \$250,000 may be considered, depending on the description of need in the proposal and the proposed activities.

5. Conferences provide platforms for new collaborations or exchange of ideas that strengthen the INCLUDES National Network. Conference proposals may be submitted by current or former INCLUDES award recipients or organizations that are not currently part of the INCLUDES portfolio.

The INCLUDES Initiative will consider conference proposals on an ongoing basis. Please note that although Conference proposals may be accepted at any time, proposals received after the second Tuesday in May target date each year may not be reviewed until the next fiscal year.

Conference proposals may request up to \$100,000 for one year. Please refer to the instructions in Section V.A. and in PAPPG Chapter II.F.8 for additional guidance on preparing conference proposals.

III. Award Information

Anticipated Type of Award: Standard Grant, Continuing Grant and Cooperative Agreement (Alliances will be awarded as Cooperative Agreements)

Estimated Number of Awards:10-15

In any one competition, the INCLUDES Initiative anticipates funding up to:

Two (2) Design and Development Launch Pilots

Two (2) Collaborative Change Consortia

One (1) Alliance

Five (5) Network Connectors

Five (5) Conferences

Anticipated Funding Amount: \$5,500,000 for all project types in each competition year.

Anticipated funding amount, number of awards, and average award size and duration are contingent upon the availability of funds.

IV. Eligibility Information

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Institutions of Higher Education (IHEs): Two- and four-year IHEs (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Special Instructions for International Branch Campuses of US IHEs: If the proposal includes funding to be provided to an international branch campus of a US institution of higher education (including through use of sub-awards and consultant arrangements), the proposer must explain the benefit(s) to the project of performance at the international branch campus, and justify why the project activities cannot be performed at the US campus.
- Non-profit, non-academic organizations: Independent museums, observatories, research laboratories, professional societies and similar organizations located in the U.S. that are directly associated with educational or research activities.
- For-profit organizations: U.S.-based commercial organizations, including small businesses, with strong capabilities in scientific or engineering research or education and a passion for innovation.
- State and Local Governments
- 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:

An organization may serve as a lead organization on only one proposal per project type, not including conferences. Proposals that exceed the organizational limit will be returned without review. **No exceptions will be made.**

For Network Connectors, Design and Development Launch Pilots, and Conferences, full proposals must be submitted as a single submission from a lead organization, with other collaborating organizations included as subawardees.

Collaborative Change Consortia and Alliances may submit proposals in one of two ways:

- a single submission from a lead organization, with other collaborating organizations included as subawardees, OR
- separate submissions from a lead organization and two collaborating organizations, with any additional collaborating organizations included as subawardees.

See PAPPG Chapter II.E.3 for additional information on collaborative proposals.

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

An individual may serve as a PI or Co-PI on only one INCLUDES proposal per annual due date, not including conferences. Proposals that exceed the PI or Co-PI limit will be returned without review. **No exceptions will be made.**

A PI or co-PI of an active INCLUDES Alliance may not be a PI or co-PI on a proposal under this solicitation, if the Alliance would still be active at the start of the new award. This limit does not include conference proposals.

Prior INCLUDES funding is not required to be eligible to submit a proposal for any project type. The inclusion of former or current INCLUDES investigators in proposals is encouraged, but not required.

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. 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. 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). 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.

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

Collaborative Proposals. All collaborative proposals submitted as separate submissions from multiple organizations must be submitted via Research.gov. PAPPG Chapter II.E.3 provides additional information on collaborative proposals.

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.

Proposal Summaries: Investigators planning to submit a proposal are strongly encouraged to submit a one-page description of their proposal idea to nsfincludes@nsf.gov at least two months prior to proposal submission. The one-page description is not part of the merit review process, but allows an INCLUDES program director to provide feedback on alignment of the idea with the INCLUDES Initiative's goals.

Proposal Set-Up: Select "Prepare New Full Proposal" in Research.gov. Search for and select this solicitation title in Step One of the Full Proposal wizard. As stated previously, even though proposals must be submitted to the Directorate for STEM Education (EDU) / Division of Equity for Excellence in STEM (EES), once received the proposals will be managed by a cross-disciplinary team of NSF Program Directors. Select "Research" as the proposal type for the following project types: 1) Design & Development Launch Pilots, 2) Collaborative Change Consortia, 3) Alliances, and 4) Network Connectors. If preparing a conference proposal, the "Conference" proposal type should be selected.

Grants.gov Users: The program solicitation number will be pre-populated by Grants.gov on the NSF Grant Application Cover Page, however you will need to locate the Division Code, Program Code, Division Name, and Program Name for the specific solicitation you are applying to by visiting <https://www.fastlane.nsf.gov/pgmannounce.jsp>. As stated previously, even though proposals must be submitted to the Directorate for STEM Education (EDU) / Division of Equity for Excellence in STEM (EES), once received the proposals will be managed by a cross-disciplinary team of NSF Program Directors.

Title of Proposed Project: The title of the proposed project should begin with the term: "INCLUDES [add project type]: [add project title]". Please note that if submitting a Conference Proposal via Research.gov, the system will automatically prepend the title with "Conference". (Note: If awarded, the project name must continue to include "INCLUDES" explicitly.)


Cover Sheet: For planning purposes, May 1 should be shown as the start date for all project types, except Conferences. Conference proposals should indicate a start date six months after submission.

Project Summary: In addition to the requirements in the PAPPG, the broadening participation challenge(s) being addressed must be explicitly stated in the Project Summary. The project summary should also include a clear and concise description of the project's plans for shared vision; partnerships; shared goals and metrics; leadership and communication; and expansion, sustainability, and scale.

Project Description: The project description must provide a clear statement of the work to be undertaken and must include the objectives for the period of the proposed work and expected significance. The broadening participation challenge(s) being addressed must be explicitly stated in the Project Description Introduction.

Each proposal must explain how it will build collaborative infrastructure and achieve impact by operationalizing the five design elements of collaborative infrastructure. Each design element should be addressed in a section of the proposal with the subheadings: (1) Shared Vision, (2) Partnerships, (3) Goals and Metrics, (4) Leadership and Communication, and (5) Expansion, Sustainability, and Scale.

Within the context of the INCLUDES principles, proposals must discuss (a) the objectives and significance of the proposed activity; (b) the suitability of the methods to be used; (c) the qualifications of the investigators and the participating organizations; and (d) the effect of the effort on collaborative infrastructure building for broadening the participation of the identified group(s) in STEM. Proposals must provide plans for effecting systemic change and contributing to the knowledge base on broadening participation in STEM, in alignment with the INCLUDES key principles.

Projects must include plans to connect and contribute to the INCLUDES National Network (www.includesnetwork.org ) and the INCLUDES Coordination Hub, which provides a framework for network engagement, capacity building, research,

communications, shared measures and evaluation, and visibility and expansion for the INCLUDES National Network.

Project descriptions are a maximum of 15 pages for all project types, except Alliances. Because of the large award size and complexity of the requirements, proposers may include up to 20 pages for Alliance project descriptions.

All project descriptions must contain a separate section within the narrative labeled "Broader Impacts".

Results of prior NSF support must be discussed, if applicable (see PAPPG for guidelines).

In preparing the project description, submitters are encouraged to consider the additional solicitation-specific review criteria outlined in Section VI below. The most competitive proposals will address the following questions and considerations regarding the five design elements of collaborative infrastructure.

For Design and Development Launch Pilots, Collaborative Change Consortia, and Alliances, the questions to be considered include:

1. Shared Vision:

- What broadening participation challenge(s) will be addressed and what is the broader vision for effecting systemic change?
- What innovative approaches will be used to address the identified broadening participation challenge(s)?
- How will the vision be informed by an assessment of the needs of the identified community(ies) in the broadening participation challenge, including why and how they are affected by barriers to participation?
- How will the strategies build upon existing knowledge, broadening participation research findings, evidence-based practices, and the expertise and efforts of project partners?
- How will the project add to the knowledge base for broadening participation in STEM through research and evaluation?

2. Partnerships:

- What organizations are the proposed partners and why are they important to address the identified broadening participation challenge(s)?
- What will be each partner's role and what is the justification for that role, based on expertise?
- Why is this set of partners the right set to undertake the collaborative activities and effect the identified shared vision?
- How are individuals most impacted by the identified challenges involved in leadership or authentic partnership with the project?
- What mechanism(s) will be used to structure partnerships and clearly communicate the role of each partnering organization?
- How will partners handle disagreements and necessary contingencies?
- What is the collaborative change framework (e.g., collective impact; networked improvement communities) that the partners will use to achieve the project's broadening participation goals?

3. Goals and Metrics:

- What are the measurable objectives, outcomes, and progress indicators that will demonstrate the accomplishment of the project's goals?
- What types of data will be collected? How will data be used? How will the data be managed and shared?

- How will the measures selected lead to outcomes demonstrating systemic change?
- How will progress be documented for the activities and partners in the project?
- Who will be the external evaluator and what is the evaluation plan?

4. Leadership and Communication:

- What organizations and individuals will lead the project and how have they demonstrated the capacity and vision to develop, manage, and lead?
- How will the project provide for collective and distributed leadership among the partnering organizations?
- How will the project build capacity for leadership and conflict resolution within and among all partnering organizations?
- How will project activities, progress, and achievements be broadly shared in new and creative ways with those most impacted by the challenge and with other communities of interest, including the INCLUDES National Network, the INCLUDES Coordination Hub, and other stakeholders?

5. Expansion, Sustainability, and Scale:

- How will the project's activities progress to next steps for equitable expansion, sustainment, and scale?
- What strategies will be used to expand, sustain, and scale key project activities by connecting expertise from multiple sectors and other private and public funders?
- How will project activities build and manage an ecosystem for sustainable change, including communicating the discoveries of and generating enthusiasm for the strategies that address the broadening participation challenge(s)?
- What will be the overall contribution to broadening participation in the nation's scientific workforce?

For Alliances:

In addition to addressing the questions listed above, Alliance proposals must also identify and describe the role of the "backbone" (i.e., support) organization that provides a framework for (a) continuous communication, networking, capacity building, expansion, sustainability, and visibility of the project network and (b) collaboration with the INCLUDES Coordination Hub.

A backbone organization is the supporting infrastructure that provides staff to support Alliance activities, facilitating communication and shared measures/data management between partners, providing logistical support and information for meetings, providing accountability and structure, and connecting and aligning people and organizations to strengthen and sustain the Alliance. There are many acceptable models for how a backbone organization can be incorporated into the structure of an Alliance, but emerging evidence suggests that more successful models have dedicated backbone staff who are not also assigned to other core areas of Alliance activity.

Alliances project descriptions should describe:

- How the backbone organization will provide support for the broadening participation challenge(s) that will be addressed by the Alliance.
- How the backbone organization will integrate into the Alliance's management plan.
- The role the backbone organization will play in collecting, coordinating, analyzing, and sharing data from multiple sites and multiple projects, as part of the plan for data collection, data management, and data sharing necessary to build and expand the INCLUDES Alliance and ensure contributions to the INCLUDES National Network through the INCLUDES Coordination Hub.

- How the backbone organization will leverage technology to facilitate connectivity among Alliance partners.
- How the backbone organization will facilitate sustainability and long-term engagement of the Alliance partners.
- How the backbone organization will help the Alliance respond to changes over time as the project evolves and new partners join with different levels of experience in collaborative change strategies and broadening participation in STEM.

For Network Connectors and Conferences, the questions to be considered include:

1. Shared Vision:

- What broadening participation challenge(s) will be addressed and what is the broader vision for effecting systemic change?
- How will the work of the existing project inform the establishment of the shared vision?
- What innovative strategies will be used to address the identified broadening participation challenge(s)?
- How will the vision be informed by an assessment of the needs of the identified community(ies) in the broadening participation challenge, including why and how they are affected by barriers to participation?

2. Partnerships:

- What organizations are the proposed partners and why are they important to address the identified broadening participation challenge(s)?
- Why is this set of partners the right set to undertake the proposed activities?
- How are individuals most impacted by the identified challenges involved in leadership or authentic partnership with the project?

3. Goals and Metrics:

- What are the measurable objectives, outcomes, and progress indicators that will demonstrate accomplishment of the project's goals?
- Who will be the external evaluator and what is the evaluation plan?
- What types of data will be collected? How will data be used? How will the data be managed and shared?

4. Leadership and Communication:

- What organizations and individuals will lead the project and how have they demonstrated capacity and vision to develop, manage, and lead?
- How will the project provide for collective and distributed leadership and build capacity for leadership among the partnering organizations?
- How will project activities, progress, and achievements be broadly shared in new and creative ways with those most impacted by the challenge and with other communities of interest, including the INCLUDES National Network, the INCLUDES Coordination Hub, and other interested stakeholders?

5. Expansion, Sustainability, and Scale:

- How will the project's activities contribute to next steps for equitable expansion, sustainment, or scale?
- What will be the overall contribution to broadening participation in the nation's scientific workforce?

For all project types:

INCLUDES National Network: In addition to addressing the five design elements of collaborative infrastructure, proposals should present a reasonable and appropriate plan to connect and contribute to the INCLUDES National Network through the INCLUDES Coordination Hub in the project description. The INCLUDES Coordination Hub works to promote success and elevate expertise through shared models, measurement practices, engagement tools, and resources that support learning, action, and sustainability. It communicates research discoveries of INCLUDES-funded projects and other National Network members, builds capacity, and advances expansion and scale by connecting expertise from multiple sectors. The proposal should address how the project will engage with the Coordination Hub using these and other mechanisms to advance the National Network. Potential benefits to the project of participating in the National Network should also be described.

Other Supplementary Documents: In addition to the requirements in the PAPPG, proposals must include the following in the Other Supplementary Documents section:

- A list of all personnel who have a role in the project, including their first and last names, organizational affiliations, and a one-sentence description of their expected role. This list must also include the project evaluator and any advisory board members.
- A separate list of all organizations that will participate in the project. Outline the roles and functions each organization will perform. Organizations whose role does not differ from the role described in the personnel list do not need to be included in the list of organizations.
- Alliance and Collaborative Change Consortium proposals must include letters of support from the appropriate senior/executive leader of each organization that will be involved in implementing systemic change strategies. Letters of support must express awareness of, support for, and specific commitments to the type of change proposed. Letters of support must be provided by the organization(s) submitting the proposal and major partnering organizations. "Major" is defined by receiving budgetary resources from the award or contributing to the impacts of the proposed work. This is a deviation from the PAPPG in that letters of collaboration are not allowed for Alliance and Collaborative Change Consortium proposals. Network Connector and Design and Development Launch Pilot proposals must include a letter of collaboration from a leader of major partnering projects or organizations. Conference proposals may, but are not required to, include letters of collaboration.

Proposals submitted without these documents may be returned without review.

B. Budgetary Information

Cost Sharing:

Inclusion of voluntary committed cost sharing is prohibited.

C. Due Dates

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

October 25, 2022

Fourth Tuesday in October, Annually Thereafter

Network Connectors

October 25, 2022

Fourth Tuesday in October, Every Other Year Thereafter

Design and Development Launch Pilots and Collaborative Change Consortia

October 24, 2023

Fourth Tuesday in October, Every Other Year Thereafter

Alliances

- **Full Proposal Target Date(s):**

May 14, 2024

Second Tuesday in May, Annually Thereafter

Conferences

- **Submission Window Date(s)** (due by 5 p.m. submitting organization's local time):

October 31, 2022 - October 30, 2023

October 31 - October 30, Annually Thereafter

Conferences

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/ProposalPreparationand

For Research.gov user support, call the Research.gov Help Desk at 1-800-381-1532 or e-mail 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. 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/.

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 and Sharing Plan and the Mentoring Plan, as appropriate.

Additional Solicitation Specific Review Criteria

In addition to the NSF Merit Review Criteria, reviewers will be asked to consider the ability of the proposed INCLUDES projects to provide the collaborative infrastructure necessary to support the project's partners and activities within the context of the five design elements of collaborative infrastructure and to establish and maintain linkages to the INCLUDES National Network. The following questions will be considered for each additional review criterion.

- **Collaborative Infrastructure:** Does the proposal have a sufficiently compelling and comprehensive plan for operationalizing the five design elements of collaborative infrastructure?

Additional Collaborative Infrastructure Questions to Consider for Alliances and Collaborative Change Consortia: Does the proposal incorporate rigorous and innovative research that will contribute to the knowledge base about broadening participation in STEM?

Additional Collaborative Infrastructure Questions to Consider for Alliances: Are there sufficient plans to effectively incorporate a "backbone" or support organization into the Alliance and sustain its activities over time?

- **INCLUDES National Network:** Does the proposal have a reasonable and appropriate plan to connect and contribute to the INCLUDES National Network through capacity building, resource sharing, and/or other mechanisms? Does the project have a plan for integrating data with the INCLUDES National Network through the INCLUDES Coordination Hub? Is there a credible communication strategy to share knowledge and promising practices with the INCLUDES National Network, the Coordination Hub, and the broader community?

B. Review and Selection Process

Proposals submitted in response to this program solicitation will be reviewed by Ad hoc Review and/or Panel Review, or Reverse Site Review.

The INCLUDES Initiative is a National Science Foundation-wide effort. Proposals submitted in response to this program solicitation will be reviewed by Ad hoc Review and/or Panel Review, or Reverse Site Review.

Full Proposals

Full proposals may be reviewed in two phases including: (1) review of proposals by ad hoc review or panel and (2) potentially a reverse site visit with an expert review panel comprised of internal or external reviewers.

The Program Director and the INCLUDES Initiative Team will consider the pool of recommendations and using several factors will either make a funding decision or invite proposers for proposals under consideration to NSF to participate in a reverse site visit before a final funding decision is made. Proposing teams invited for a reverse site visit may be asked to further articulate the project's vision and plans, provide additional clarity, address concerns, and or respond to specific inquiries posed by NSF and or an internal or external expert panel. Feedback from the panel, the strength of the proposal, and the potential for success will be considered.

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 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. 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.

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.

Special Award Conditions:

INCLUDES awards will be made in the form of standard grants, continuing grants and cooperative agreements (Alliances will be awarded as cooperative agreements)

Cooperative Agreements will include an extensive section of Special Conditions relating to the period of performance, detailed work description, recipient responsibilities, NSF responsibilities, joint NSF recipient responsibilities, funding and funding schedule, reporting and evaluation requirements, key personnel, and other conditions. Within the first 90 days of the award, the lead organization of the Alliance should submit to NSF an integrated and coordinated strategic and implementation plan for addressing the identified broadening participation challenge(s), including a management plan and plans for a virtual infrastructure to facilitate collaborative activities and the accomplishment and implementation of a set of specified activities and targeted outcomes.

NSF will provide general oversight and monitoring of INCLUDES projects to ensure effective performance and administration, as well as to facilitate any coordination necessary to further the goals of the INCLUDES Initiative.

Award recipients will be required to include appropriate acknowledgment of NSF support under the INCLUDES initiative in any publication (including World Wide Web pages) of any material based on or developed under the project, in the following terms: "This material is based upon work supported by the National Science Foundation's Eddie Bernice Johnson INCLUDES Initiative under Grant No. (Recipient enters NSF grant number.)"

Recipients will also be required to orally acknowledge NSF support using the language specified above during all news media interviews, including popular media such as radio, television and news magazines. Project titles should begin with "INCLUDES" and projects with logos will be required to incorporate "INCLUDES" into the logo and other branding.

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 annual project report, and a project outcomes report for the general public.

Failure to provide the required annual or final annual 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 annual 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.

INCLUDES projects are required to submit annual reports on progress and plans, which will be used as a basis for performance review and determining the obligation of continuing grant increments. All projects must also contribute to INCLUDES evaluations and the National Network shared measures platform. This reporting will include sharing data with the INCLUDES Coordination Hub and with evaluation contractors for the purpose of performance monitoring and/or evaluation. These data capture the information required to demonstrate progress towards achieving the goals of the INCLUDES National Network.

Alliances are also required to submit annual evaluation reports and participate in biennial reviews of progress in the form of site visit(s), reverse site visit(s), or virtual site visit(s). In reviewing an INCLUDES Alliance's progress and assessing future plans, NSF will emphasize the Alliance's performance in the following areas: (1) establishing an Alliance-wide shared broadening participation agenda and coordinating the Alliance's research and collaborative change activities and infrastructure, including the establishment of a "backbone" or support organization; (2) facilitating the Alliance's ability to work collectively (3) effectively managing the Alliance's shared goals and metrics, including providing evidence that the activities of the Alliance have increased participation in STEM for the identified population(s); (4) distributing leadership across all Alliance partners and collaborating with the INCLUDES Coordination Hub to engage with the broader INCLUDES National Network; and (5) enhancing the potential for the Alliance to expand and sustain activities over time, and have an impact on a broad scale. Oversight for INCLUDES Alliances is the responsibility of all NSF Directorates and Offices supporting the INCLUDES Initiative.

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:

- General inquiries may be addressed to:, telephone: (703) 292-2315, email: nsfincludes@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

For questions relating to Grants.gov contact:

- Grants.gov Contact Center: If the Authorized Organizational Representatives (AOR) has not received a confirmation message from Grants.gov within 48 hours of submission of application, please contact via telephone: 1-800-518-4726; e-mail: support@grants.gov.

IX. Other Information

The NSF website provides the most comprehensive source of information on NSF Directorates (including contact information), programs and funding opportunities. Use of this website by potential proposers is strongly encouraged. In addition, "NSF Update" is an information-delivery system designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF [Grants Conferences](#). Subscribers are informed through e-mail or the user's Web browser each time new publications are issued that match their identified interests. "NSF Update" also is available on [NSF's website](#).

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

About The National Science Foundation

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

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

NSF receives approximately 55,000 proposals each year for research, education and training projects, of which approximately 11,000 are funded. In addition, the Foundation receives several thousand applications for graduate and postdoctoral fellowships. The agency operates no laboratories itself but does support National Research Centers, user facilities, certain oceanographic vessels and Arctic and Antarctic research stations. The Foundation also supports cooperative research between universities and industry, US participation in international scientific and engineering efforts, and educational activities at every academic level.

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See the *NSF Proposal & Award Policies & Procedures Guide* Chapter II.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
 - 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
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 Policy Office, Division of Institution and Award Support
 Office of Budget, Finance, and Award Management
 National Science Foundation
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