NSF 24-563: Louis Stokes Alliances for Minority Participation

Program Solicitation

Document Information

Document History

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National Science Foundation
Directorate for STEM Education
Division of Equity for Excellence in STEM

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

June 24, 2024

BD-Master's and NETWORKS Proposals ONLY

November 15, 2024

Third Friday in November, Annually Thereafter

BD-Master's and BD-Doctoral Proposals and All Alliance Proposals: ADG, B2B, SPIO and SPRA

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Important Information And Revision Notes

The following project types are described fully in this solicitation under Section II and include:

- **Alliance Development Grants (ADG) - New**
- **Bridge-to-the-Baccalaureate Alliances (B2B)**
- **STEM Pathways Implementation-Only Alliances (SPIO)**
- **STEM Pathways Research Alliances (SPRA)**
- **Bridges to STEM Graduate Degrees in National Priorities: (BD Master's) - New**
- **Bridges to STEM Graduate Degrees in National Priorities: (BD-Doctoral)**
- **STEM Networking Incentives and Engagement (NETWORKS) - New**

Reference is made to LSAMP populations and individuals from groups underrepresented in STEM. These references refer to Blacks and African-Americans, Hispanic and Latino Americans, American Indians, Alaska Natives, Native Hawaiians, and Pacific Islanders.

Changes/Updates

- **Bridge-to-the-Baccalaureate Alliances (B2B)** support increases from a maximum of $1.5M over 3 years, to a maximum of $2.0M over 5 years.
- **STEM Pathways Implementation-Only (SPIO)** alliances are eligible for Bridge to STEM Graduate Degrees in National Priorities: (BD Master's) and Bridge to STEM Graduate Degrees in National Priorities (BD-Doctoral) funding opportunities following the first 5 years of LSAMP support.

Project description page limit designations for the research and institutionalization components are specified for **STEM Pathways Research Alliances (SPRA)** alliance proposals.

Bridge to the Baccalaureate, STEM Pathways Implementation-Only and STEM Pathways Research Alliance proposals may include support for partnerships with small businesses, particular Small Business Innovative Research (SBIR) projects to foster non-academic research experiences for matriculating LSAMP students and research mentors.

New Project Types:

- **Alliance Development Grants (ADG)** support the conceptualization and development for new B2B and new SPIO alliances.
- **Bridge to STEM Graduate Degrees in National Priorities (BD-Master's)** projects support cohorts of six students from Master's comprehensive institutions in STEM national priority areas.
- **STEM Networking Incentives and Engagement (NETWORKS)** projects incentivize the creation and participation of LSAMP populations in STEM networks.

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:

Louis Stokes Alliances for Minority Participation (LSAMP)

Synopsis of Program:

The Louis Stokes Alliances for Minority Participation (LSAMP) program invests in the Nation's colleges and universities to aid student success to create a new generation of STEM discoverers for the national STEM enterprise. The program takes a comprehensive approach to the STEM Learning Ecosystem to impact STEM student development and retention.

LSAMP is an alliance-based program, whereby a group of institutions of higher education (IHEs) work together to diversify the nation's science, technology, engineering, and mathematics (STEM) workforce by increasing the number of STEM baccalaureate and graduate degrees awarded to persons from LSAMP populations. LSAMP populations are defined as persons from groups underrepresented in the STEM enterprise: Blacks and African-Americans, Hispanic and Latino Americans, American Indians, Alaska Natives, Native Hawaiians, and Pacific Islanders. The LSAMP program provides funding to alliances that implement comprehensive, evidence-based, innovative, and sustained strategies that ultimately result in the graduation of well-prepared, highly competitive students from LSAMP populations who pursue graduate studies or careers in STEM, while also supporting knowledge generation, knowledge utilization, assessment of program impacts, dissemination activities and dissemination of scholarly research into the field.

Projects supported by the LSAMP program include:

- **Alliance Development Grants (ADG)** support the conceptualization and development of new B2B and new SPIO alliances. **(New)**
- **Bridge-to-the-Baccalaureate (B2B)** alliances facilitate the successful transfer of students from LSAMP populations to four-year institutions in pursuit of STEM baccalaureate degrees.
- **STEM Pathways Implementation-Only (SPIO)** alliances are designed for new and reconstituted alliances. These projects focus on building and strengthening strategies and approaches to assist Institutions of Higher Education (IHEs) increase STEM baccalaureate degrees to LSAMP populations and facilitate entry into STEM graduate degree programs.

- **STEM Pathways Research Alliances (SPRA)** are designed for well-established alliances. These projects serve as models of excellence in STEM broadening participation by (1) steadily increasing STEM baccalaureate degrees to LSAMP populations and facilitating entry into STEM graduate degree programs; (2) producing and disseminating new scholarly research on the broadening participation of LSAMP populations (or underrepresented and under-served populations in STEM disciplines and the nation's STEM workforce) and, (3) holistically assess the state of institutionalization and sustainability of the alliance.
- **Bridge to STEM Graduate Degrees in National Priorities (BD-Master's)** projects support cohorts of **six** graduate students pursuing a M. S. degree in STEM national priority areas, providing financial support (stipends and cost of education) and support to help develop and maintain academic and research skills that enable participants to successfully persist in STEM graduate degree programs at Master's comprehensive-degree producing institutions only. **(New)**
- **Bridge to STEM Graduate Degrees in National Priorities (BD-Doctoral)** projects support cohorts of **twelve** graduate students pursuing a Ph.D. degree in STEM national priority areas, providing financial support (stipends and cost of education) and support to help develop and maintain academic and research skills that enable participants to successfully persist in STEM doctoral degree programs.
- **STEM Networking Incentives and Engagement (NETWORKS)** projects provide support to incentivize the creation and participation of LSAMP populations in STEM networks. **(New)**

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.

- Martha James, Program Lead, telephone: (703) 292-7772, email: mjames@nsf.gov
- LeRoy Jones II, Program Director, telephone: (703) 292-4684, email: ljones@nsf.gov
- Sonja Montas-Hunter, Program Director, telephone: (703) 292-7404, email: smontash@nsf.gov
- Joyce Y. Belcher, Program Director, telephone: (703) 292-8221, email: jbelcher@nsf.gov

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

- 47.076 --- STEM Education

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 45 to 60

Anticipated Funding Amount: $38,000,000

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

Eligibility Information

Who May Submit Proposals:

Proposals may only be submitted by the following:

- **Alliance Development Grants (ADG)**
  - 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.

Alliances:

- **STEM Pathways Implementation-Only (SPIO):** 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.
- **STEM Pathways Research Alliance (SPRA):** 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.
- **Bridge to the Baccalaureate (B2B):** B2B Alliances are composed entirely of two-year IHEs. The lead institution must award associate-level degrees in a STEM or STEM-related field. Associate-level degree-granting institutions that award four-year degrees in workforce development areas may be eligible to serve as the lead institution of a B2B alliance. Four-year institutions that award STEM baccalaureate degrees are ineligible to serve as lead institutions for B2B alliances but may be included as partner institutions for articulation purposes as a transfer pathway to four-year STEM degree programs. Funds are not budgeted for four-year institutions in B2B projects. Proposers should contact the LSAMP program staff for any questions on eligibility for B2B alliance support.

Bridges to STEM Graduate Degrees in National Priorities (BD-Master's)

- Master's Comprehensive IHEs as defined by Carnegie Classification only. Carnegie Classification website: https://carnegieclassifications.acenet.edu/ .

Bridges to STEM Graduate Degrees in National Priorities (BD-Doctoral)

- Four-year IHEs accredited in and having a campus located in the US, acting on behalf of their faculty members.

STEM Networking Incentives and Engagement (NETWORKS)

- 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.
- Non-profit, non-academic organizations: Independent museums, observatories research laboratory 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.

NETWORKS projects are limited to four collaborating organizations per proposal.

Who May Serve as PI:

Alliance Development Grant (ADG) Proposals

The PI for ADG proposals must be an upper-level administrator/cabinet-level official from the executive leadership (i.e., Provost, Dean, VP of Academic Affairs, etc.) of the institution. A deviation from this requirement for PI designation requires a full justification. Faculty may be listed as Co-PIs.

Alliances: Bridge to the Baccalaureate (B2B), STEM Pathways Implementation-Only (SPIO) and STEM Pathways Research Alliance (SPRA)

The PI for alliances (B2B, SPIO, and SPRA) should be a cabinet-level official from the executive leadership (i.e., Provost, Dean, VP of Academic Affairs, etc.) of the institution and a member of the alliance governing

board. The alliance governing board is a body of upper-level administrators from each partner institution that oversees the alliance. A deviation from this requirement for PI designation requires a full justification. Individuals from partner institutions must be designated as co-PIs on the proposal.

To ensure production of new STEM education research knowledge as a required element of the SPRA project, one or more of the Co-PIs on an SPRA proposal must be a social or data scientist, disciplinary/interdisciplinary education researcher, or evaluator.

Bridges to STEM Graduate Degrees in National Priorities (BD-Master's and BD-Doctoral) Proposals

The PI for the BD-Master's and/or BD-Doctoral proposal should be a cabinet-level official from the executive leadership of the institution and a member of the alliance governing board. The alliance governing board is a body of upper-level administrators from each partner institution that oversees the alliance. Co-PIs may be members of the institution's graduate leadership team or STEM faculty. A deviation from this requirement for PI designation requires a full justification. One Co-PI must be the alliance director if the selected BD-Master's or BD-Doctoral site is different from the lead institution. See section V for more information on the requirement to established a Governing Board.

STEM Networking Incentive and Engagement Proposals (NETWORKS)

The PI and Co-PIs for STEM Networking Incentive and Engagement proposals may be faculty members.

Limit on Number of Proposals per Organization:

Alliance Development Grant (ADG) and Alliance Proposals (Bridge to the Baccalaureate (B2B, STEM Pathways Implementation-Only (SPIO) and STEM Pathways Research Alliance (SPRA)

Only one ADG, B2B, SPIO, or SPRA proposal may be submitted by an eligible (lead) institution (IHE). Alliances (B2B, SPIO, SPRA) may hold only one active alliance award at a time. Institutions partnering in an alliance may not be a formal partner in more than one alliance at the same time. Formal partners are IHEs participating in an alliance that report enrollment and degree data to NSF. See Section VII on grantee reporting requirements.

Bridges to STEM Graduate Degrees in National Priorities (BD-Master's) Proposals

Up to two BD-Master's proposals may be submitted from an alliance. New proposals for additional cohorts from existing awardees may be submitted only after the current awards have expired. The final annual report must be submitted prior to the submission of a new proposal.

Bridges to STEM Graduate Degrees in National Priorities (BD-Doctoral) Proposals

Up to two BD-Doctoral proposals may be submitted from an alliance. New proposals for additional cohorts from existing awardees may be submitted once the current awards have expired. The final annual report must be submitted prior to the submission of a new proposal.

An ***"alliance"*** may submit proposals to Bridges to STEM Graduate Degrees in National Priorities annual competitions. The following conditions apply:

- one proposal from each category (one BD-Master's and one BD-Doctoral)
- two BD-Master's or two BD-Doctoral proposals in a competition.

Only one proposal from an ***"alliance institution"*** is eligible for consideration per competition within stipulations provided for BD-Master's and BD-Doctoral above.

STEM NETWORK INCENTIVE AND ENGAGEMENT PROPOSALS (NETWORKS)

No limit.

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

Alliance Development Grants (ADG): Only one ADG proposal per PI or co-PI.

Alliances: Bridge to the Baccalaureate (B2B), STEM Pathways Implementation-Only (SPIO) and STEM Pathways Research Alliance (SPRA) - One proposal per PI or co-PI.

Bridges to STEM Graduate Degree in National Priorities (BD-Master's): Maximum of two proposals per PI or co-PI.

Bridges to STEM Graduate Degree in National Priorities (BD-Doctoral): Maximum of two proposals per PI or co-PI.

STEM Networking Incentive and Engagement Proposals (NETWORKS): No limit.

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

B. Budgetary Information

- **Cost Sharing Requirements:**

  Inclusion of voluntary committed cost sharing is prohibited.

- **Indirect Cost (F&A) Limitations:**

  Not Applicable

- **Other Budgetary Limitations:**

  Other budgetary limitations apply. Please see the full text of this solicitation for further information.

C. Due Dates

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

  June 24, 2024

  BD-Master's and NETWORKS Proposals ONLY

  November 15, 2024

  Third Friday in November, Annually Thereafter

  BD-Master's and BD-Doctoral Proposals and All Alliance Proposals: ADG, B2B, SPIO and SPRA

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 Council on Competitiveness Commission, the National Science Board (NSB), and the Advisory Committee for the National Science Foundation's Directorate for STEM Education (EDU) have all issued policy reports on the state of the nation's needs to continue to strengthen its global competitiveness in an age of a changing economy. The 2020 *Competing in the Next Economy* report states that to prepare for the expansion of changing employment and impacts of innovation, automation and convergence of disciplines, America must take several steps to adapt, such as expanding the science, technology, engineering and mathematics (STEM)-educated workforce, establishing a greater opportunity for experiential learning, increasing access to lifelong education, and re-establishing hands-on skill training in K-12 education[1]. The National Science Board (NSB) report challenges the nation to find the "missing millions" of the population that are needed to diversify the nation's STEM workforce. Partnerships among public, private and non-profit sectors are necessary to accomplish this mission according to the NSB's Vision 2030 report.[2]

LSAMP was authorized by Congress and established in 1991 to assist the nation in diversifying its STEM workforce. LSAMP's efforts to increase diversity in STEM are aligned with the goals of NSF's Fiscal 2022-2026 strategic plan, *"Leading the World in Discovery and Innovation, STEM Talent Development and the Delivery of Benefits from Research".* The program accomplishes this mission by funding institutions of higher education (IHEs) through a collective (alliance) plan of action to enact a "STEM-based Learning Ecosystem" to implement evidence-based strategies for recruitment and retention to the STEM baccalaureate or STEM graduate degree for students from LSAMP populations. LSAMP populations are: Blacks and African-Americans, Hispanic and Latino Americans, American Indians, Alaska Natives, Native Hawaiians, and Native Pacific Islanders.

The LSAMP model consists of high impact practices and approaches focused on the integration of the academic and social environment as well as professionalization for participation in the STEM workforce. The National Academies 2016 report "Barriers and Opportunities in Completing 2-Year STEM Degrees" recommends utilization of evidence-based recruitment and retention strategies to support the varied student pathways for completing STEM degrees.[3]

[1] Making Impact 2019-2020 Report: https://www.compete.org/reports/all/3414

[2] National Science Board Vision 2030: https://www.nsf.gov/nsb/publications/2020/nsb202015.pdf

[3] https://doi.org/10.17226/21739

II. Program Description

A. Program Overview

The LSAMP program invests in the nation's colleges and universities to aid student success, directly or indirectly, at all STEM pathways, thereby creating a new generation of STEM discoverers for the STEM enterprise nationally and internationally. With a focus on the participation of underrepresented groups, particularly those from named LSAMP populations, in national priority areas, specifically emerging science and technologies, the program's priorities are to:

- increase individual student engagement, retention, and completion of baccalaureate degrees for LSAMP populations;
- enable the successful transfer of LSAMP populations from two-year to four-year institutions in STEM degree programs;
- increase access to evidence-based, high quality and highly impactful practices in STEM recruitment and retention;
- facilitate seamless transition of underrepresented groups into STEM graduate programs and subsequent graduate degree completion;
- stimulate new research and learning on broadening participation in STEM disciplines.

These priorities are intended to produce short and long-term outcomes resulting in the successful production of highly competitive and diverse talent for the STEM enterprise while concurrently contributing new knowledge to the field in broadening participation.

Areas of emphasis that respond to national priorities and preparation for emerging sciences, include quantum information science, advanced materials and manufacturing, artificial intelligence, data science and analytics, climate change, cybersecurity, robotics, plant genetics/agricultural technologies, clean energy, and semiconductors/microelectronics.

All proposals for LSAMP support must demonstrate creative and entrepreneurial thinking, innovative strategies, relevant pedagogies, and partnerships to maximize opportunities that prepare undergraduate and graduate students from LSAMP populations for 21st century STEM careers.

B. Alliances

LSAMP, at its core, is an alliance-based program that provides student and mentor support beginning at the undergraduate level. K-12 activities should be leveraged through other resources.

An alliance is defined as a group of organizations working together for mutual benefit and support of the goals and objectives of the national LSAMP program. B2B, SPIO and SPRA are alliance-type projects. **At a minimum, an alliance must consist of four IHEs.** These projects are funded to implement comprehensive evidence-based strategies that ultimately result in the graduation of highly competitive STEM students from LSAMP populations who pursue graduate degrees or careers in STEM fields, particularly in emerging or trending fields of national priority. Other non-academic organizations may also participate in an alliance. Forming an alliance should be intentional and allow for building relationships among institutions.

Alliances should be based on quality, not quantity, of partners and all participating institutions should be able to benefit from this collective arrangement. The number of institutions in an alliance should be commensurate with the scope of the project and the activities proposed should be realistic and beneficial to all alliance members.

LSAMP alliances should directly address recruitment, preparation and retention of LSAMP populations. Alliances are expected to significantly increase the numbers of STEM degrees to students under-represented in STEM fields. These students may include those who transfer from two-year institutions to four-year STEM programs to complete the STEM baccalaureate degree. Students may also enter directly into undergraduate STEM programs from secondary school to fulfill the STEM baccalaureate degree.

Well-established alliances must also produce and disseminate new scholarly research on broadening participation of LSAMP populations (or underrepresented and under-served populations in STEM disciplines and the nation's STEM

workforce) and holistically assess the state of institutionalization and sustainability of the alliance.

Alliances are highly encouraged to collaborate with institutions with active research awards in NSF's research directorates, the Office of Integrative Activities (OIA) which includes the Established Programs to Stimulate Competitive Research (EPSCoR) and the Office of International Science and Engineering (OISE). Additionally, alliances should leverage active projects in the Directorate for STEM Education (EDU), including projects in the Division of Equity for Excellence in STEM Education (EES). EES is the home for programs such as the Eddie Bernice Johnson INCLUDES initiative, Hispanic-serving Institutions, Tribal Colleges and Universities Program, Historically Black Colleges and Universities-Undergraduate Program and others. For more information on the EES program, please visit the division's website.

C. Rationale and Expectations for Each LSAMP Funding Opportunity

1. Alliance Development Grants (ADG)

The purpose of an ADG project is to support the conceptualization and development of new B2B and new SPIO alliances and to ultimately increase the number of alliances around the country, specifically in regions where LSAMP activities are non-existent. Institutions that have considered forming an alliance, identified partner institutions, begun compiling STEM enrollment and degree data to assess the feasibility of forming an alliance, and garnered support from administrators and STEM faculty, are highly encouraged to seek ADG funding.

ADG funding may be used to conduct needs assessments, conduct organizational planning meetings, attend STEM broadening participation professional development conferences or meetings. NSF expects that a full B2B or SPIO proposal (described below) will be submitted to the LSAMP program at the end of the planning period. ADG proposals should not include activities to fund direct student support or to begin STEM recruitment and retention intervention activities.

2. Bridge to the Baccalaureate (B2B) Alliances

Community colleges are valuable contributors to the diversity of the STEM workforce. The B2B alliances are partnerships of community colleges collaborating to implement strategies that facilitate the successful transfer of students from LSAMP populations to four-year institutions in pursuit of STEM baccalaureate degrees. B2B alliances should focus on innovative, evidence-based recruitment and retention strategies at the community college level, with particular emphasis on strengthening skills for successful transfer to baccalaureate STEM degree programs. For recruitment and outreach purposes, evidence of linkages to the K-12 community must be demonstrated. A cohort model for stipend support during the matriculation period at the community college may be proposed.

Community college strategies, components, and interventions aimed at strengthening the transfer to four-year STEM degree programs are supported through these alliances. Proposers of B2B support must present evidence of strong articulation and transfer agreements with four-year institutions in the project description. All proposers must commit to a significant increase in student transfer into STEM fields at four-year institutions and justify the level of increase they define as significant. A clear plan of action to meaningfully increase the transfer of students to four-year degree programs in STEM from LSAMP populations that is supported by data and student outcomes tracking is essential for a highly competitive proposal.

All B2B proposals must describe plans for tracking student progress over the course of funding and post-award as well as tracking of established cohorts. Because the LSAMP program is focused on baccalaureate degree attainment, B2B projects must track the number of community college students who successfully transfer into STEM programs at four-year institutions. Evidence of non-funded formal partnerships with four-year institutions are strongly encouraged. Letters of collaboration with partner IHEs or other entities must be included as supplementary documents.

Community college partners must be budgeted as subawardees if not the lead institution for the B2B alliance. Dual enrolled high school students are ineligible for direct support from the project.

Existing B2B alliances should leverage their experience and knowledge in implementing an LSAMP program designed to support community college STEM students and should serve as **national models of excellence** for preparing a diverse STEM workforce by increasing the transfer rate of LSAMP populations into STEM baccalaureate degree programs.

3. STEM Pathways Implementation-Only Alliances (SPIO)

SPIO alliances are the first implementation projects for new alliances or alliances that have reconstituted its alliance membership and have been funded by the LSAMP program for 10 years or less. See guidance for reconstituted alliances below.

SPIO alliances focus on building and strengthening strategies and collaborative approaches to assist IHEs in diversifying the nation's science, technology, engineering and mathematics (STEM) workforce by increasing the number of STEM baccalaureate and graduate degrees awarded to LSAMP populations.

These projects are expected to (a) address the production of highly competitive STEM students at the undergraduate level leading to increases in STEM baccalaureate degrees from LSAMP populations and entry into graduate school, (b) include plans for building upon established strategies and collaborative approaches that have been effective in the recruitment, retention and graduation of LSAMP populations and relative to the evolving state of STEM workforce development, and (c) indicate past institutional successes, (e.g., efforts at transforming the academic and/or research environment), in producing highly competitive students from LSAMP populations in STEM disciplines. Activities must include implementation of evidence-based strategies to support successful recruitment, retention and graduation of LSAMP populations in STEM, or adaptation of previously successful approaches for a new institutional context and/or STEM discipline. Although direct support for K-12 activities are not allowable, evidence of linkages to the K-12 community is expected.

Reconstituted alliances: Reconstituted alliances are projects that have added or replaced partner institutions from the original project. A reconstituted alliance with 50% or more change in institutions is considered a new alliance and eligible for SPIO funding only. Reconstituted alliances must demonstrate a change of scope for the newly reconstituted alliance and appoint a different lead institution. In addition, discussion of the rationale for the new alliance partners must be addressed in the project description. **NOTE:** Changes in alliance membership must occur at the beginning of a new project. Membership changes during the project duration is discouraged as it impacts enrollment and degree annual data reporting.

Existing SPIO alliances should leverage their experience and knowledge in implementing an LSAMP project that continually serves as **national models of excellence** in increasing STEM B. S. degree production and preparation of highly competitive students from LSAMP populations for entry into STEM graduate programs or STEM careers nationwide.

4. STEM Pathways Research Alliances(SPRA)

SPRA alliances are successful partnership models of excellence in recruitment and retention practices that have resulted in significant increases in STEM degrees to underrepresented populations in STEM. While continuing to significantly increase STEM degrees to LSAMP populations and preparing students for a 21stcentury workforce or in emerging STEM disciplines and technologies, SPRA alliances are required to address: (1) the continuing production of highly competitive STEM students at the undergraduate level leading to increases in STEM baccalaureate degrees from LSAMP populations and entry into graduate school, (2) the national need for production and dissemination of new scholarly research on broadening participation of racial/ethnic minorities in STEM disciplines and the nation's STEM workforce and, (3) holistically assess the state of institutionalization and sustainability progress for the alliance.

SPRA alliance proposals are required to include a robust broadening participation research component in the form of an innovative knowledge-generating research plan that rigorously investigates effective practices or innovations in STEM education grounded in existing theories of student success. The primary purpose of the research component is to produce new knowledge and to disseminate new learning to the nation.

The project description must describe the full methodology of the study(ies), potential types of articles, other products/report types produced from the research and timeline for production and dissemination of BPR activities. The research may be related to the proposed alliance strategies for recruiting, retaining, and graduating LSAMP populations in STEM, analysis and studies of practical approaches and practices that the alliance or partners have implemented that led to successful outcomes for underrepresented or under-served populations in STEM or any topic of broadening participation in STEM.

Suggested research topics for SPRA projects may include, but is not limited to, research on STEM mentoring in different organization types and contexts, including informal science organizations, organizational studies in the context of STEM success, comparative analyses, disciplinary studies, including institutional transformation, regional approaches, science of broadening participation, persistence in STEM, and others. Results and recommendations from these activities must be disseminated broadly. A highly qualified team of experts in social science research, STEM education research and/or evaluation, suitable for implementing the annual research plan, must be articulated in the proposal.

Creativity in developing and implementing the dissemination plan is expected. Dissemination plans should include a wide range of activities including, peer-reviewed publications, informal reports, substantial conference presentations at various venues, including at professional organizations and other dissemination activities that would reach the broader STEM community. At a minimum, peer-reviewed publication(s) in project years 3 and 5 are required and must be reported in the annual progress report and the final annual report.

SPRA Page Component Requirements: SPRA proposals must devote 10 pages of the project description to the required research component and three pages to a discussion of institutionalization status. See additional guidance on the preparation of the institutionalization component below.

Assessment of Institutionalization and Sustainability Component: Well-established (SPRA) alliances that have received continuous support from the NSF LSAMP program for 10 or more consecutive years are required to include a three-page (minimum) holistic overview describing progress towards institutionalization since the inception of the alliance. A list of institutionalized or sustained efforts without analysis or assessment is not acceptable. Gap or other analysis on remaining areas of institutionalization and/or sustainability is required during the project period and may be addressed in the proposed evaluation plan. If undertaking a gap analysis or focused assessment, funding for this activity must be included in the proposed budget. This section must be included at the end of the project description only. It should **NOT** be included in the supplementary documentation section of the proposal.

Up to 20 pages may be used to develop the SPRA project description. Up to 50 percent of the cumulative budget may be allocated to the broadening participation research and project evaluation components. The budget justification should include a summary cost allocation for these two components.

Existing SPRA alliances should leverage their experience and knowledge in implementing an LSAMP project that continually serves as **national models of excellence** in the production and dissemination of broadening participation research to increase the knowledge-base in diversifying the nation's STEM workforce.

USEFUL RESOURCES FOR EDUCATIONAL RESEARCH

The National Science Foundation and the Institute of Education Statistics in the U.S. Department of Education developed Common Guidelines for Education Research and Development. The Guidelines describe six types of research studies that can generate evidence about how to increase student learning. For each research type, there is a description of the purpose and the expected and/or theoretical justifications, types of project outcomes, and quality of evidence. The Guidelines and Frequently-Asked Questions (FAQs) can be found on the NSF website with the numbers NSF 13-126 and NSF 13-127.

5. Bridges to STEM Graduate Degrees in National Priorities: (BD-Master's and BD-Doctoral) Activity

BD-Master's and BD-Doctoral projects provide financial support (stipends and cost of education) to a critical mass of six or twelve STEM baccalaureate-degree recipients, respectively, who were active, certified participants in LSAMP programs as undergraduates. BD participants are funded for the first two years of their graduate studies in STEM.

The goal of the BD-Master's and BD-Doctoral Activity is to prepare students from LSAMP populations for completion of STEM graduate degree programs, particularly the STEM doctoral degree, at Master's comprehensive and doctoral-degree granting institutions. At the post-baccalaureate level, BD-Master's and BD-Doctoral sites provide necessary academic, research and professional development skills that enable participants to successfully persist in STEM graduate degree programs.

BD host sites are required to recruit a cohort of six (BD-Master's) or twelve (BD-Doctoral) LSAMP alumni from LSAMP institutions. Recruitment of participants is expected from all STEM disciplines. The recruitment plan must demonstrate national efforts to obtain eligible participants. Host sites are encouraged to focus on recruitment in project year one of the three-year project.

BD-Master's and BD-Doctoral proposals must describe the evidence-based recruitment and retention strategies in STEM graduate education that will be implemented. These strategies must be based on current research for attracting, retaining, educating, and graduating students from LSAMP populations. In the proposal, the recruitment plans and selection process of BD-Master's and/or BD-Doctoral participants must be clearly stated as well as the requirements for STEM degree completion.

While proposals for this support may be submitted by the selected institution or separately from the alliance lead institution, the submitted proposal must indicate the decision-making process for selection of the host site and include evidence of alliance supported activities in the project description. **For BD-Doctoral proposals only:** The status of all cohorts that previously received BD support within the alliance must be included in the supplementary documentation section of BD proposals.

Proposals must include a section on lessons learned and/or results from formative assessments or evaluations undertaken that inform new interventions and demonstrate transformation in the institution's recruitment and retention practices for graduate students from LSAMP populations. Evidence-based practices must be demonstrated in the activities proposed.

Competitive proposals will include a one-page mentoring plan in the supplementary documentation section of the proposal for participants that indicates how graduate students will be paired with research mentors and describes any training that would be provided to the research mentors and BD-Master's and/or BD-Doctoral participants. Highly competitive proposals will provide evidence of linkages to innovative and cutting-edge national and international research priorities and prepare participants for interdisciplinary research.

Where applicable, proposers are required to provide documentation of past performance of retaining and placing significant numbers of LSAMP graduates into STEM M. S. and/or STEM Ph.D. programs at the designated graduate institutional host site. A plan for formally connecting a significant number of newly matriculated LSAMP students to STEM graduate degree programs, particularly doctoral degree programs, is expected. Both BD-Master's and BD-Doctoral projects are expected to place emphasis on designing structured student support strategies that enable participants to develop competitive applications for Graduate Research Fellowships, including the NSF Graduate Research Fellowship Program (GRFP), and admission into STEM doctoral programs nationwide.

BD proposals should include within the project description an action plan that describes the level and type of institutional commitment that will be available for supporting BD-Doctoral participants after two years of NSF funding. The plan should include sources and dollar amounts of support towards doctorate degrees for continuing students in years three and beyond. LSAMP BD Activity projects are encouraged to partner with other NSF-funded programs, such as Centers of Research Excellence in Science and Technology (CREST) or other NSF research centers, the Alliances for Graduate Education and the Professoriate (AGEP) program or other intra- or extramural funding project which could provide support for STEM graduate students. The process for tracking BD project participants that enter STEM graduate programs must be described in the proposal.

First time host sites must describe, within the rationale for funding, the institution's performance or current efforts in diversifying the STEM graduate culture at the institution. The project description must include a **summary** of graduate STEM enrollment and STEM degree production data over a five-year period and analysis.

Proposals must include a rigorous project or program evaluation plan and robust dissemination of project results and findings.

Successful proposers in a BD competition may not submit consecutive proposals to a competition. Subsequent proposals for BD support may be submitted once the current award has expired. The final annual report for the current project must be submitted prior to submission of a new proposal.

Criteria for BD-Master's Host Sites (Terminal M. S. Degree-Seekers Only)

- Proposals for BD-Master's host sites must be submitted from Master's-Comprehensive institutions as defined by Carnegie Classification https://carnegieclassifications.acenet.edu/ .
- Participants must be enrolled in a research-focused master's degree program with a thesis requirement.
- Professional Master's Degree Programs are excluded from this funding opportunity.

Budget Guidelines (6 Students): The maximum request per eligible alliance for BD-Master's support is $597,000 for 36 months. Funds for stipends to support BD-Master's participants and Cost of Education Allowances must be listed as "Participant Support," in the NSF proposal budget.

- Graduate student stipends are required to be shown in the amount of $34,000 per year for up to three years for each of the six students.
- For each of the six students, NSF will provide a cost-of-education allowance of up to $14,000 per year for up to three years to the institution for tuition, health insurance, and other normal fees paid on behalf of the BD participants, in accordance with established policies and procedures.
- Additional funds, up to $21,000 total, may be requested in other cost categories (e.g., evaluation, travel, materials and supplies, and applicable indirect costs) that contribute to the effectiveness of the BD Activity; any such costs must be listed under the appropriate NSF budget categories and must be explained in the Budget Justification.
- Salary support for personnel is not allowable under this project type.

Budget Guidelines (12 Students): The maximum request per eligible alliance for BD-Doctoral support is $1,173,000 for 36 months. Funds for stipends to support BD-Doctoral participants and Cost of Education Allowances must be listed as "Participant Support," in the proposal budget.

- Graduate student stipends are required to be shown in the amount of $34,000 per year for up to three years for each of the twelve students.
- For each of the twelve students, NSF will provide a cost-of-education allowance of up to $14,000 per year for up to three years to the institution for tuition, health insurance, and other normal fees paid on behalf of the BD participants, in accordance with established policies and procedures.
- Additional funds, up to $21,000 total, may be requested in other cost categories (e.g., evaluation, travel, materials and supplies, and applicable indirect costs) that contribute to the effectiveness of the BD Activity; any such costs must be listed under the appropriate NSF budget categories and must be explained in the Budget Justification.
- Salary support for personnel is not allowable under this project type.

6. STEM Networking Incentive and Engagement Projects (NETWORKS):

LSAMP network projects aim to strengthen STEM research and education activities in disciplines of national priority and emerging technologies to broaden participation in these fields. The goal is to increase the participation and professional identity and development of STEM students and faculty from LSAMP populations in new industries and emerging fields of science and technology. **This opportunity is not designed to sustain existing networks or research activities.**

This support offers opportunities to catalyze participation from LSAMP populations in research networks by supporting the creation of new networks and/or increasing participation in existing disciplinary networks regionally, nationally and internationally. Networks are collaborative and are limited to a maximum of four organizations. Non-LSAMP institutions may submit proposals but must partner with at least one LSAMP alliance institution. Non-LSAMP institutions serving as lead of network projects must provide evidence of meaningful linkages to LSAMP alliances and/or LSAMP institutions. Proposals from social scientists that address broadening participation topics and minority-serving institutions (MSIs) are encouraged to submit proposals for this funding opportunity.

Projects may include undergraduate (including community college) and post-baccalaureate activities for students. Opportunities for entrepreneurship training for future leaders in innovative and discipline specific training in emerging

sciences are highly encouraged.

Funding will be provided for IHEs and non-academic STEM organizations to **create** or **link** to national research networks, such as Research Coordination Networks (RCNs) in the biosciences, or to form new networks in emerging STEM fields. STEM education and social science networks may be thematic to include recruitment networks, STEM education or broadening participation research networks. These networks are intended to create new directions in research and education by supporting groups of researchers and investigators to communicate and coordinate research, training and educational activities across disciplinary, organizational, geographical and international boundaries.

Partnerships: STEM Networking Incentive and Engagement projects should leverage opportunities in other agencies or STEM organizations as well as NSF funding opportunities such as Partnership for Innovation https://new.nsf.gov/funding/opportunities/partnerships-innovation-pfi-0.

Required Network Convenings: Inclusion of a convening or conference during the project period is a requirement of STEM Networking Incentive and Engagement projects. Please refer to the PAPPG, for guidance in developing this component of the project. Convenings and conferences must be disciplinary but may include broadening participation topics such as idea-generation to attract LSAMP populations to emerging technologies, developing new directions in STEM educational research and evaluation, convergence and use-inspired research, research on successful practices in team science or other STEM networking topics.

III. Award Information

ANTICIPATED AWARDS AND FUNDING LEVELS by PROJECT TYPE

Project Type: Alliance Development Grant (ADG) Projects
Maximum Budget: $125,000
Duration: 18 months
Number of Awards Anticipated per Fiscal Year: Up to 10 Awards
Award Instrument: Standard Grant

Project Type: Bridge-to-the-Baccalaureate (B2B) Projects
Maximum Budget: Up to $2,000,000
Duration: 60 months
Number of Awards Anticipated per Fiscal Year: Up to 5 Awards
Award Instrument: Continuing Grant

Project Type: STEM Pathways Implementation-Only Projects
Maximum Budget: up to $5,000,000
Duration: 60 months
Number of Awards Anticipated per Fiscal Year: Up to 10 Awards
Award Instrument: Continuing Grant

Project Type: STEM Pathways Research Alliance Projects
Maximum Budget: $4,000,000
Duration: 60 months
Number of Awards Anticipated per Fiscal Year: Up to 6 Awards
Award Instrument: Continuing Grant

Project Type: Bridge to STEM Graduate Degrees in National Priorities (BD-Master's) Projects

Maximum Budget: $597,000
Duration: Up to 36 months
Number of Awards Anticipated per Fiscal Year: Up to 8 Awards
Award Instrument: Standard Grant

Project Type: Bridge to STEM Graduate Degrees in National Priorities (BD-Doctoral) Projects
Maximum Budget: $1,173,000
Duration: Up to 36 months
Number of Awards Anticipated per Fiscal Year: Up to 8 Awards
Award Instrument: Standard Grant

Project Type: STEM Networking Incentive and Engagement (NETWORKS) Projects
Maximum Budget: Up to $600,000
Duration: 36 months
Number of Awards Anticipated: Up to 10 Awards
Award Instrument: Standard Grant

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

IV. Eligibility Information

Who May Submit Proposals:

Proposals may only be submitted by the following:

- **Alliance Development Grants (ADG)**
  - 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.

  Alliances:

  - **STEM Pathways Implementation-Only (SPIO):** 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.
  - **STEM Pathways Research Alliance (SPRA):** 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.
  - **Bridge to the Baccalaureate (B2B):** B2B Alliances are composed entirely of two-year IHEs. The lead institution must award associate-level degrees in a STEM or STEM-related field. Associate-level degree-granting institutions that award four-year degrees in workforce development areas may be eligible to serve as the lead institution of a B2B alliance. Four-year institutions that award STEM baccalaureate degrees are ineligible to serve as lead institutions for B2B alliances but may be included as partner institutions for articulation purposes as a transfer pathway to four-year STEM degree programs. Funds are not budgeted for four-year institutions in B2B projects. Proposers should contact the LSAMP program staff for any questions on eligibility for B2B alliance support.

  Bridges to STEM Graduate Degrees in National Priorities (BD-Master's)

  - Master's Comprehensive IHEs as defined by Carnegie Classification only. Carnegie Classification website: https://carnegieclassifications.acenet.edu/ .

  Bridges to STEM Graduate Degrees in National Priorities (BD-Doctoral)

  - Four-year IHEs accredited in and having a campus located in the US, acting on behalf of their faculty members.

  STEM Networking Incentives and Engagement (NETWORKS)

- 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.
- Non-profit, non-academic organizations: Independent museums, observatories research laboratory 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.

NETWORKS projects are limited to four collaborating organizations per proposal.

Who May Serve as PI:

Alliance Development Grant (ADG) Proposals

The PI for ADG proposals must be an upper-level administrator/cabinet-level official from the executive leadership (i.e., Provost, Dean, VP of Academic Affairs, etc.) of the institution. A deviation from this requirement for PI designation requires a full justification. Faculty may be listed as Co-PIs.

Alliances: Bridge to the Baccalaureate (B2B), STEM Pathways Implementation-Only (SPIO) and STEM Pathways Research Alliance (SPRA)

The PI for alliances (B2B, SPIO, and SPRA) should be a cabinet-level official from the executive leadership (i.e., Provost, Dean, VP of Academic Affairs, etc.) of the institution and a member of the alliance governing board. The alliance governing board is a body of upper-level administrators from each partner institution that oversees the alliance. A deviation from this requirement for PI designation requires a full justification. Individuals from partner institutions must be designated as co-PIs on the proposal.

To ensure production of new STEM education research knowledge as a required element of the SPRA project, one or more of the Co-PIs on an SPRA proposal must be a social or data scientist, disciplinary/interdisciplinary education researcher, or evaluator.

Bridges to STEM Graduate Degrees in National Priorities (BD-Master's and BD-Doctoral) Proposals

The PI for the BD-Master's and/or BD-Doctoral proposal should be a cabinet-level official from the executive leadership of the institution and a member of the alliance governing board. The alliance governing board is a body of upper-level administrators from each partner institution that oversees the alliance. Co-PIs may be members of the institution's graduate leadership team or STEM faculty. A deviation from this requirement for PI designation requires a full justification. One Co-PI must be the alliance director if the selected BD-Master's or BD-Doctoral site is different from the lead institution. See section V for more information on the requirement to established a Governing Board.

STEM Networking Incentive and Engagement Proposals (NETWORKS)

The PI and Co-PIs for STEM Networking Incentive and Engagement proposals may be faculty members.

Limit on Number of Proposals per Organization:

Alliance Development Grant (ADG) and Alliance Proposals (Bridge to the Baccalaureate (B2B, STEM Pathways Implementation-Only (SPIO) and STEM Pathways Research Alliance (SPRA)

Only one ADG, B2B, SPIO, or SPRA proposal may be submitted by an eligible (lead) institution (IHE). Alliances (B2B, SPIO, SPRA) may hold only one active alliance award at a time. Institutions partnering in an alliance may not be a formal partner in more than one alliance at the same time. Formal partners are IHEs

participating in an alliance that report enrollment and degree data to NSF. See Section VII on grantee reporting requirements.

Bridges to STEM Graduate Degrees in National Priorities (BD-Master's) Proposals

Up to two BD-Master's proposals may be submitted from an alliance. New proposals for additional cohorts from existing awardees may be submitted only after the current awards have expired. The final annual report must be submitted prior to the submission of a new proposal.

Bridges to STEM Graduate Degrees in National Priorities (BD-Doctoral) Proposals

Up to two BD-Doctoral proposals may be submitted from an alliance. New proposals for additional cohorts from existing awardees may be submitted once the current awards have expired. The final annual report must be submitted prior to the submission of a new proposal.

An ***"alliance"*** may submit proposals to Bridges to STEM Graduate Degrees in National Priorities annual competitions. The following conditions apply:

- one proposal from each category (one BD-Master's and one BD-Doctoral)
- two BD-Master's or two BD-Doctoral proposals in a competition.

Only one proposal from an ***"alliance institution"*** is eligible for consideration per competition within stipulations provided for BD-Master's and BD-Doctoral above.

STEM NETWORK INCENTIVE AND ENGAGEMENT PROPOSALS (NETWORKS)

No limit.

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

Alliance Development Grants (ADG): Only one ADG proposal per PI or co-PI.

Alliances: Bridge to the Baccalaureate (B2B), STEM Pathways Implementation-Only (SPIO) and STEM Pathways Research Alliance (SPRA) - One proposal per PI or co-PI.

Bridges to STEM Graduate Degree in National Priorities (BD-Master's): Maximum of two proposals per PI or co-PI.

Bridges to STEM Graduate Degree in National Priorities (BD-Doctoral): Maximum of two proposals per PI or co-PI.

STEM Networking Incentive and Engagement Proposals (NETWORKS): No limit.

Additional Eligibility Info:

Definition of Formal Partner:

Formal partners in an alliance are defined as IHEs that report STEM enrollment and STEM degree data for the project.

Collaborative Proposals:

Separately submitted collaborative proposals are **not permitted** for the following project types: **ADG, B2B, SPIO, SPRA, BD-Master's and BD-Doctoral**. These project type proposals must be submitted by a lead organization with collaborating organizations supported by subawards.

Collaborative STEM Networking and Engagement (NETWORKS) proposals **are permitted** and may be submitted as a single proposal with subawards or as separately submitted collaborative proposals from multiple organizations.

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

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.

Separately submitted collaborative proposals are **not permitted** for the following project types: **ADG, B2B, SPIO, SPRA, BD-Master's and BD-Doctoral.** These project type proposals must be submitted by a lead organization with collaborating organizations supported by subawards.

Collaborative STEM Networking and Engagement (NETWORKS) proposals **are permitted** and may be submitted as a single proposal with subawards or as separately submitted collaborative proposals from multiple organizations.

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

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

- Proposal title instructions for all LSAMP proposal types
- Page length of Project Description
- Guidance on documents and overarching content for all proposal types (ADG, B2B, SPIO, SPRA, BD-Master's, BD-Doctoral, NETWORKS)
- Guidance on content for all LSAMP **alliance** proposal types (B2B, SPIO, SPRA)
- Additional guidance pertinent to each specific LSAMP project type
    - For Alliance Development Grants (ADG) proposals

- For Bridge-to-the-Baccalaureate (B2B) Alliance proposals
- For STEM Pathways Implementation-Only (SPIO) Alliance proposals
- For STEM Pathways Research Alliance (SPRA) proposals
- For Bridges to STEM Graduate Degrees in National Priorities (BD-Master's and BD-Doctoral) proposals
- For STEM Networking Incentive and Engagement (NETWORKS) proposals

Proposal title instructions for all LSAMP project types:

- **For Alliance Development Grant (ADG) proposals**
  - Begin the project title with "LSAMP ADG: Name of Proposed Alliance"
- **For Bridge-to-the-Baccalaureate (B2B) proposals**
  - Begin the project title with "LSAMP B2B: Name of new or existing alliance"
- **For STEM Pathways Implementation-Only (SPIO) proposals**
  - Begin the project with "LSAMP SPIO: Name of new or existing alliance"
- **For STEM Pathways Research Alliances (SPRA) proposals**
  - Begin the project with "LSAMP SPRA: Name of new or existing alliance"
- **For Bridges to STEM Graduate Degrees in National Priorities (BD-Master's) proposals**
  - Begin the project title with "BD-Master's: Name of Alliance followed by host institution"
- **For Bridges to STEM Graduate Degrees in National Priorities (BD-Doctoral) proposals**
  - Begin the project title with "BD-Doctoral: Name of Alliance followed by host institution"
- **For STEM Networking Incentive and Engagement (NETWORKS) proposals**
  - Begin the project title with "LSAMP NETWORK: Name of network (include discipline, research or STEM education/Social Science topic)"

Project Description page length: SPRA alliance proposals are permitted up to 20 pages for the Project Description section. The Project Description for all other project types is limited to 15 pages.

GUIDANCE ON DOCUMENTS AND GENERAL CONTENT FOR ALL LSAMP PROJECT TYPES (ADG, B2B, SPIO, SPRA, BD-Master's, BD Doctoral, NETWORKS)

Follow all PAPPG guidelines as well as the additional guidelines given below for the budget and budget justification, supplementary documentation (data management and sharing plan, mentoring plan, project personnel, letters of collaboration and data tables.

Budget and Budget Justification

All LSAMP project budgets should be in NSF format and include up to five pages of budget justification. The budget justification should be in narrative format and include detailed explanations for each line item with budget resources listed. Information about what may or may not be included in the budget or budget justification is outlined in the PAPPG or NSF Grants.gov Application Guide. For proposals with subawards, each subaward must include a separate budget and budget justification of no more than five pages.

Where feasible, subawards should be included for all partner institutions and organizations.

Budgets must include travel allowances for PI and PD travel to the annual LSAMP PI/PD meetings in Washington, DC metropolitan area or other location. Funds may be budgeted for partner campus coordinators' attendance and participation in these meetings.

Supplementary Documentation

- Data Management and Sharing Plan: All data collected for LSAMP projects must be in accordance with the revised EDU Data Management Guidance, which may be found here: https://www.nsf.gov/bfa/dias/policy/dmpdocs/ehr.pdf. Proposals must include a Supplementary Document of no more than two pages labeled "Data Management and Sharing Plan." This supplementary document should describe how the proposal will conform to NSF policy on the dissemination and sharing of project results. See Chapter II.D.2 of the PAPPG for full policy implementation. For additional information on the Dissemination and Sharing of Results, see https://www.nsf.gov/bfa/dias/policy/dmp.jsp. Data Management and Sharing Plans will be reviewed by panelists and program directors and should be written with sufficient clarity and detail to support proposal processing and the merit review process. Generic Data Management and Sharing Plans should be avoided. Each Data Management and Sharing Plan should describe the data, metadata, samples, software, curricula, documentation, publications, and other materials generated during the proposal project. Data Management and Sharing Plans should reflect the best practices and standards for the proposed research and types of data being generated, whether experimental, computational, text-based, media or physical materials. LSAMP expects its awardees to describe how data and related materials are generated to allow others to reproduce the research study. Further the Data Management and Sharing Plan should support the sharing of data, products, and methods in such a way that others can understand validate, and replicate findings.
- *Project Personnel*: In addition to guidance provided in the PAPPG on required Special Information and Supplementary Documents, please provide a list of all project personnel in the Supplementary Document section of the proposal. Provide current, accurate information for all personnel and organizations involved in the project. NSF staff will use this information in the merit review process to manage reviewer selection. The list must include all PIs, co-PIs, Senior Personnel, funded/unfunded Consultants or Collaborators, subawardees, postdocs, project-level advisory committee members, and writers of letters of support and collaboration. This list should be numbered and include (in this order) full name, organization (s), and role in the project, with each item separated by a semi-colon. Each person listed should start a new numbered line. For example:
    1. John Smith; XYZ University; PI
    2. Jane Garcia; Welldone Research Organization; Subawardee
    3. Monica Brown; ABC, Incorporated; Funded Consultant (Evaluator)
    4. Asa Youngblood; DEF National Laboratory; External Advisory Committee and Funded Consultant
- *Letters of Collaboration*: Letters of collaboration from the leadership of all partner institutions for alliance and BD-type proposals indicating high level support and commitment to the projects must be included in the supplementary documentation section of the proposal.
- *Letters of Support and collaboration*: For all LSAMP projects, the proposal should provide evidence of commitment which may include letters of support and collaboration from upper-level organizational administrators. Letters from institutional administrators (Presidents, Provosts, Deans, etc.) should outline concrete mechanisms for institutionalization and sustainability of the project activities at the STEM undergraduate or STEM graduate levels. Up to a maximum of five Letters of Support and Collaboration of two pages or less from non-academic collaborators may be included to document the commitment of resources that will be relied upon during the partnership. These documents should be uploaded in the supplementary documentation section of the proposal.
- *Data Tables*: Required data tables as described in Section II of the solicitation for alliance and BD-type proposals must be included in the supplementary documentation section of the proposal. Extraneous data tables resulting in supplementary documentation pages submitted in excess of 100 pages will be returned without review. Data should be summarized in clear and understandable format to support STEM productivity addressed in the project description.

Appendix: Appendices or references to appendices are not permitted.

GUIDANCE ON CONTENT FOR ALL LSAMP ALLIANCE PROPOSALS (B2B, SPIO, SPRA)

- Alliance proposals must discuss the rationale for the proposed alliance, and how, collectively, it will form a cohesive structure to meet goals and objectives of the project. Specifically, the proposal should describe how the

alliance will leverage the strengths of each institutional partner and the unique contributions of each partner to the project.

- All alliance proposals must commit to a significant increase in baccalaureate production in STEM fields within the award period of the project and justify the level of increase defined as significant from baseline. Data must be expressed and shown in numbers (actual count) and percentages within the project description with analyses and supported by summary data tables in the supplementary documentation section of the proposal.
- Alliance proposals must include summary baseline data at the alliance level and for each partner institution for each STEM discipline. Baseline data includes STEM enrollment, transfer, graduation rates, matriculation into and completion of STEM graduate degrees for each STEM discipline by LSAMP population. Inclusion of additional demographics, other than personally identifiable information (PII), may be included in baseline data.
- Evidence of articulation with four-year institutions within the alliance or external to the alliance for community college transfer must be included in the proposal as supplementary documentation. Proposals need not include copies of articulation agreements.
- Project funds are provided to institutions and organizations only and not directly to students. Participants receiving direct student stipend support must be U.S. citizens, U.S nationals or permanent residents of the United States.
- The LSAMP program is not a financial aid scholarship program. Funds should not be used for this purpose. The program allows grantees to provide performance-based stipend support to participants only.
- Direct support for pre-college activities is unallowable. Summer bridge programs for accepted/enrolled students at community colleges or four-year STEM degree programs are allowable activities.
- Students designated as dual enrollees while matriculating at the high school level may not receive direct financial support from LSAMP projects. Dual enrollees may, however, participate in LSAMP activities at IHEs.
- Alliance funds may not be used for faculty development activities. Faculty release time is unallowable.
- Institutions partnering in an alliance may not be a formal partner in more than one alliance. **A formal partner is an IHE participating in an alliance that reports STEM enrollment and STEM degree data.**
- Institutional partners (including community colleges and B2B alliance partners) must be budgeted as subawardees if not the lead institution of an alliance. Separately submitted collaborative proposals are ineligible for consideration and will be returned without review.
- All alliance proposals must include a project evaluation plan that describes how the project will assess progress, document outcomes, and evaluate success in achieving the project's stated goals. The project evaluation plan should be designed to serve as a valuable source of information on how the project is being implemented, specifically, what works and what should be modified. The evaluation plan should be based on benchmarks, indicators, or expected outcomes related to the project goals and activities. Evaluation plans should include a logic model or other tool that connects the project goals to the specific activities, and outputs, as well as the outcomes. Evaluation plans should be appropriate based on the evaluation questions of interest along with a proposed timeline for the activities, including reporting and dissemination activities.
- Letters of collaboration from the leadership of all partner institutions for alliance proposals indicating high level support and commitment to the projects must be included in the supplementary documentation section of the proposal.

ADDITIONAL GUIDANCE PERTINENT TO SPECIFIC LSAMP PROJECT TYPES

Alliance Development Grants

- ADG funding may be used to conduct needs assessments, including STEM degree and demographic data analyses, conduct organizational planning meetings, attend broadening participation professional development activities (meetings and conferences). Significant progress should have been made prior to submitting an ADG proposal. This includes identification of alliance partners, leadership commitments and initial project personnel. The

development proposal must demonstrate, at a minimum, the above efforts. NSF expects that a full alliance proposal will be submitted to the LSAMP program at the end of the planning period.

- Funds for recruitment and retention implementation activities are unallowable.
- Institutions considering forming an alliance and are interested in ADG support should contact the LSAMP team of program officers to discuss ADG proposal submission.

Bridge to the Baccalaureate (B2B) Projects

- Proposers for B2B support must present evidence of strong articulation and transfer agreements with four-year institutions in the project description.
- All proposers must commit to a significant increase in student transfer into STEM fields at four-year institutions and justify the level of increase defined as significant.
- A clear plan of action to meaningfully increase the transfer of students in STEM from LSAMP populations that is supported by data and student outcomes tracking is essential for a highly competitive proposal.
- Subsequent support will be contingent on evidence of success in areas of individual student recruitment, retention, and progression to four-year STEM degree programs.
- A cohort model for stipend support during the matriculation period at the community college may be proposed.
- All B2B proposal requests for funding must describe plans for tracking student progress over the course of funding and post-award as well as tracking of established cohorts.
- Because the LSAMP program is focused on baccalaureate degree attainment, B2B projects must track the number of community college students who successfully transfer into STEM programs at four-year institutions.
- Non-funded formal partnerships with four-year institutions are strongly encouraged.
- Letters of collaboration with partner IHEs or other entities must be included in the supplementary documentation section of the proposal.
- Community college partners must be budgeted as subawardees if not the lead institution for the B2B alliance.
- Dual enrolled high school students are ineligible for direct financial support.

STEM PATHWAYS IMPLEMENTATION-ONLY ALLIANCES (SPIO) PROPOSALS

SPIO projects are expected to:

- address the production of highly competitive STEM students at the undergraduate level leading to increases in STEM baccalaureate degrees from LSAMP populations and entry into graduate STEM programs,
- include plans for building upon established strategies and collaborative approaches that have been effective in the recruitment, retention and graduation of LSAMP populations and relative to the evolving state of STEM workforce development, and
- indicate past institutional successes (e.g., efforts at transforming the academic and/or research environment), in producing highly competitive students from LSAMP populations in STEM disciplines.

A highly competitive proposal will address successes in preparing students for a 21st century workforce or in emerging STEM disciplines and technologies.

STEM PATHWAYS RESEARCH ALLIANCES

SPRA proposals are expected to include:

- a description of (1) the continuing production of highly competitive STEM students at the undergraduate level leading to increases in STEM baccalaureate degrees from LSAMP populations and entry into graduate school, (2) the national need for production and dissemination of new scholarly research on broadening participation of

underrepresented and under-served populations in STEM disciplines and the nation's STEM workforce, and (3) holistically assess the state of institutionalization and sustainability progress for the alliance.

- description of an innovative, knowledge-generating broadening participation research component that rigorously investigates effective practices or innovations in STEM education grounded in existing theories of student success. The research may be related to the proposed alliance strategies for recruiting, retaining, and graduating LSAMP populations in STEM, analysis and studies of practical approaches and practices that the alliance or partners have implemented that have led to or potentially will lead to successful outcomes for underrepresented or under-served populations in STEM. There is wide latitude for the research study to address any aspect of STEM broadening participation for underrepresented or under-served populations, including organizational studies and intersectionality. The project description must describe the full methodology, article, product/report types and timeline for production and dissemination of BPR components. At a minimum, peer-reviewed publications must be produced and disseminated in project years three and five.
- a description of the state of alliance institutionalization. SPRAs are required to provide a holistic overview of institutionalization progress since the inception of the alliance. A list of institutionalized or sustained efforts without analysis or assessment is not acceptable. Gap or other analysis on remaining areas of institutionalization and/or sustainability may be addressed.
- Three pages of the project description must address this required component. The institutionalization component must be placed at the end of the project description (pages 18-20) and should not be included in the supplementary documents section of the proposal. SPRA alliances, particularly new SPRA alliances, may opt to incorporate a gap analysis to assess institutionalization. The evaluation plan and budget must accommodate plans for conducting the gap analysis during the project period.
- Up to 20 pages may be used to develop the project description. Of the 20 pages, 10 pages must describe the broadening participation research component and three pages must address the required institutionalization component of the project.
- Up to 50% of the cumulative budget may be allocated to the broadening participation research and project evaluation components.

A highly competitive proposal will address successes in preparing students for a 21st century workforce or in emerging STEM disciplines and technologies.

BRIDGE TO STEM GRADUATE DEGREES IN NATIONAL PRIORITIES: (BD-MASTER'S) AND BRIDGE TO STEM GRADUATE DEGREES IN NATIONAL PRIORITIES: (BD-DOCTORAL) PROPOSALS

This project type is open to alliances that have completed one LSAMP project (SPIO). It provides financial support (stipends and cost of education) to a critical mass of six (BD-Master's) or twelve (BD-Doctoral) to certified LSAMP baccalaureate-degree recipients pursuing STEM graduate degrees.

- BD participants are funded for the first two years of STEM graduate study. Participants must be U.S. citizens, U.S. nationals or permanent residents.
- Only Master's Comprehensive institutions, as defined by Carnegie Classification, may submit proposals to BD-Master's competitions. Participants must be enrolled in a research-focused master's degree program with a thesis requirement. Students enrolled in Professional Master's Degree Programs are ineligible for support.
- Recruitment is encouraged in Year one of the project. The recruitment plan must demonstrate national efforts to obtain eligible participants from all STEM disciplines.
- First-time host sites must describe, within the rationale for support, the institution's performance or current efforts in diversifying the STEM graduate culture at the institution.
- Proposals must describe the evidence-based recruitment and retention strategies in STEM graduate education that will be implemented. These strategies must be based on current research for attracting, retaining, educating, and graduating students from LSAMP populations. Both recruitment and selection processes must be clearly stated as well as the requirements for STEM degree completion.

- Proposals should provide an action plan that describes the level and type of institutional commitment that will be available for supporting BD-Doctoral participants after BD support. Projects are encouraged to partner with other NSF-funded projects such as the Centers of Research Excellence in Science and Technology (CREST), NSF research centers, Alliances for Graduate Education and the Professoriate (AGEP) or other intra- or extramural projects or activities which could support for graduate students.
- **For alliances with previous BD projects:** Proposals must address lessons learned from previous implementations and evaluations and how these adjustments are incorporated into the proposed project.
- Proposals must include both rigorous evaluation and dissemination plans.
- Residual funds from standard grants may **NOT** be reallocated to other cohorts. No participant support funding will be approved for reallocation to support administration of the BD-Master's or BD-Doctoral Activities.

Supplementary Documentation

- Letters of collaboration from the leadership of all partner institutions indicating high level support and commitment to the projects.
- One-page required mentoring plan that describes how undergraduates and graduate students will be paired with research mentors, faculty mentor training or other mentoring activities. This solicitation specific required plan is separate and distinct from the mentoring plan required by the PAPPG for proposals that request funding to support postdoctoral scholars or graduate students.
- **For alliances with previous BD projects:** The status, including STEM degree program and undergraduate origin, of **all** NSF-funded participants from all cohorts. Personally-identifiable information must not be included.

STEM Networking Incentive and Engagement Projects (NETWORKS)

- The goal of NETWORKS is to create or link to national research networks, such as Research Coordination Networks (RCNs) in the biosciences, or to form new networks in emerging STEM fields or industries of the future. STEM education networks may be thematic to include recruitment networks, STEM education or broadening participation research networks. These networks are intended to create new directions in research and education by supporting groups of researchers and investigators to communicate and coordinate research, training and educational activities across disciplinary, organizational, geographical and international boundaries.
- Projects are limited to four collaborating organizations per proposal.
- Non-LSAMP IHEs and non-academic organizations are eligible to submit proposals. Consortium/partnership must consist of LSAMP institutions when led by a non-LSAMP institution.
- Inclusion of a conference or convening is required during the project period. Conferences and convenings must be disciplinary but may include broadening participation topics such as idea-generation to attract LSAMP populations to emerging technologies, developing new directions in STEM educational research and evaluation, convergence and use-inspired research, research on successful practices in team science or other STEM networking topic. Please refer to the PAPPG, for guidance in developing this component of the proposal.
- Funding opportunity is not designed to sustain existing networks or research activities.

B. Budgetary Information

Cost Sharing:

Inclusion of voluntary committed cost sharing is prohibited.

Other Budgetary Limitations:

Please see the full text of this solicitation for further information.

C. Due Dates

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

  June 24, 2024

  BD-Master's and NETWORKS Proposals ONLY

  November 15, 2024

  Third Friday in November, Annually Thereafter

  BD-Master's and BD-Doctoral Proposals and All Alliance Proposals: ADG, B2B, SPIO and SPRA

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/ProposalPreparationa For Research.gov user support, call the Research.gov Help Desk at 1-800-381-1532 or email 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 two NSF review criteria of demonstrating intellectual merit and broader impacts of the project, reviewers will be asked to evaluate with careful attention the criteria stated below:

All Alliance Proposals (B2B, SPIO, SPRA): *Rationale for and coherence of alliance structure, including level of support available for institutional participants*; description of evidence-based project activities; inclusion of plan to prepare students for current and emerging S&T priorities; quality of the management plan; evidence of support from institutional leadership and STEM faculty; rigor of the project evaluation plan; evidence of institutionalization and sustainability; results of prior NSF LSAMP or other STEM education support; potential to transform undergraduate STEM education; evidence of robust dissemination; potential for adding to the body of knowledge on recruitment and retention of LSAMP populations in STEM disciplines.

STEM Pathways and Research Alliance (SPRA) Proposals: Uniqueness and innovativeness of the research topic; fidelity and qualifications of the research team; relevance and usefulness of the research study; rigor of the research design and methodology; robust dissemination plan that includes potential for the findings and/or recommendations to provide educators with practical and effective strategies for broader integration within educational systems (departments, institutions, alliances) as well as educating the public and other stakeholders on contemporary topics in STEM broadening participation. Proposals will be evaluated on progress to date in institutionalization and sustainability efforts as described in the required three-page section of the proposal and assessed on this component of the evaluation plan.

BD-Master's and BD-Doctoral Activity Proposals: Evidence of an alliance-supported activity and evidence of success in producing degrees at the graduate-level in STEM disciplines; Evidence-based support of proposed interventions; coherent strategy and description of program activities; quality of recruitment plan and selection process; success and progress of previous cohorts through the STEM doctoral completion; evidence of formal connections and meaningful partnerships between STEM intramural and/or extramural graduate programs; rigor of evaluation plan. **For BD-Doctoral Proposals Only:** evidence of institutional support for STEM doctoral degree participants after NSF support.

STEM Networking Incentive and Engagement Proposals (NETWORKS): Evidence of connections to national and/or international public, private and/or non-profit organizations and participants in emerging fields of science and technology.

B. Review and Selection Process

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

The program employs a range of merit review methods in addition to external peer review.

Reviewers will be asked to evaluate proposals using two National Science Board approved merit review criteria and, if applicable, additional program specific criteria. A summary rating and accompanying narrative will generally be completed and submitted by each reviewer and/or panel. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

After scientific, technical and programmatic review and consideration of appropriate factors, the NSF Program Officer recommends to the cognizant Division Director whether the proposal should be declined or recommended for award. NSF strives to be able to tell 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. 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:

In addition to general terms and conditions, special award conditions may be included in the award notice(s) as follows:

The recipient shall establish a Governing Board comprised of Presidents and/or Provosts/Vice Presidents of Academic Affairs, Chief Diversity Officers from all partner institutions to oversee general project operations and to ensure that the alliance's goals and objectives are achieved. The purpose of the Board is to provide global perspectives, direction, and assistance in broadening the base of support for the implementation and sustainability of LSAMP activities. The project director should report directly to the Governing Board on alliance issues and concerns. Also, see requirements for annual and final annual reporting.

All LSAMP-funded projects are required to cooperate with NSF evaluation and assessment activities. NSF, an NSF contractor, or a grantee on behalf of NSF, may from time-to-time conduct program evaluations of LSAMP outcomes and impact. These evaluations may occur at any time during the grant period and sometimes after the grant period has ended. Reasonable cooperation with these efforts is required by the granteee.

In the event NSF phases-out or terminates support of the Alliance, procedures for reorganization and/or establishing a new alliance must be followed in consultation with the NSF LSAMP Office. The NSF LSAMP Office must also be consulted to determine eligibility to submit proposals to any NSF-announced LSAMP competition during a phase-out process.

All alliance institutions must participate in NSF's Education and Training Application System (ETAP) for its activities.

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.

In addition to general reporting requirements, special reporting requirements for LSAMP awards are as follows:

- Annual and final annual reports for all LSAMP projects must address progress toward institutionalization and sustainability of successful recruitment and retention programs as a result of NSF investment. Leveraging from other private, public, non-profit and professional society sources to increase the quality of research experiences for STEM students must be addressed in the annual and final annual reports.
- Annual and final annual reports must include a description of the progress/results of the knowledge-generating research study. In particular, changes that may have been made to the research questions/hypotheses or methods of analysis must be addressed. Annual and final annual reports must address progress and activities, including timelines, for publishing of scholarly research from the STEM Pathways Research Alliance (SPRA) research component of the project.
- The recipient will submit all certifications, ad hoc and regular progress reports with content, format and submission timelines designated by NSF and the cognizant NSF Program Officer. The recipient will submit all NSF reports and certifications via Research.gov using the appropriate reporting category. In addition to annual and final NSF reporting, the recipient is required to report enrollment, degree data, and other data annually via the Annual LSAMP Survey (WebAMP) and LSAMP-BD reporting systems. Correspondence about WebAMP and LSAMP-BD will be sent by the designated NSF contractor.
- Annual reporting, WebAMP, LSAMP-BD data, and site visit reports will be used to determine the level of continuing support for the recipient. These reports shall serve as the primary source of information used to determine whether NSF will continue to support the Alliance or will phase-out NSF support.
- The recipient is required to conduct a rigorous evaluation of the project and submit a copy of the evaluation report of their project and alliance responses to recommendations with annual report submissions and/or with project year three annual reporting. Final evaluation reports must be submitted. Evaluation reports must include progress articulated by proposed goal, objective, or activity. In addition, evaluation reports should include any highlights that capture interesting accomplishments or features of the projects.

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:

- Martha James, Program Lead, telephone: (703) 292-7772, email: mjames@nsf.gov
- LeRoy Jones II, Program Director, telephone: (703) 292-4684, email: ljones@nsf.gov
- Sonja Montas-Hunter, Program Director, telephone: (703) 292-7404, email: smontash@nsf.gov
- Joyce Y. Belcher, Program Director, telephone: (703) 292-8221, email: jbelcher@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
- Cynthia R. Douglas, Program Specialist, telephone: (703) 292-5175, email: cdouglas@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.

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