Louis Stokes Alliances for Minority Participation (LSAMP)

PROGRAM SOLICITATION
NSF 20-590

REPLACES DOCUMENT(S):
NSF 17-579

National Science Foundation

Directorate for Education and Human Resources
    Division of Human Resource Development

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

November 20, 2020

Third Friday in November, Annually Thereafter

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

November 05, 2021

First Friday in November, Every Other Year Thereafter

   Bridge to the Doctorate (BD) Activity Proposals

Full Proposal Target Date(s):

June 01, 2021

   Regional Foundational and Forward-Thinking Educational Research Conferences (may be submitted by the target date or at any time during the year)

IMPORTANT INFORMATION AND REVISION NOTES

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

- Bridge to the Baccalaureate (B2B)
- STEM Pathways Implementation-Only (SPIO)
- STEM Pathways and Research Alliance (SPRA)
- Bridge to the Doctorate (BD) Activity
- Regional Foundational and Forward-Thinking Educational Research Conferences

The following project types/funding opportunities have been eliminated:

- Pre-Alliance Planning
- Louis Stokes Regional Centers of Excellence in Broadening Participation (LSRCEs)
- DoE Supplemental Support

REVISIONS TO EXISTING PROJECT TYPES

- Funding for SPIO and SPRA projects have been reduced. See "Funding Guidelines" section.
- Reference is made to "***Well-Established Alliances***". These are alliances that have received continuous funding for 10 years or more. These alliances are eligible to submit proposals for SPRA and BD support. In addition to the required broadening participation research component, well-established alliances are now required to address the status of institutionalization and sustainability progress in proposal submissions and include plans to assess continuing institutionalization and sustainability.
- Proposal submission for the BD Activity has changed. The next proposal submission deadline is November 5, 2021. The competition for BD support will be held every other year.

Conference support is limited to Regional Foundational and Forward-Thinking Educational Research Conferences.

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised *NSF Proposal & Award Policies & Procedures Guide*(PAPPG) ([NSF 20-1](#)), which is effective for proposals submitted, or due, on or after June 1, 2020.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Louis Stokes Alliances for Minority Participation

Synopsis of Program:

The Louis Stokes Alliances for Minority Participation (LSAMP) program is an alliance-based program. The program's theory is based on the Tinto model for student retention referenced in the 2005 LSAMP program evaluation[1]. The overall goal of the program is to assist universities and colleges in diversifying the nation's science, technology, engineering and mathematics (STEM) workforce by increasing the number of STEM baccalaureate and graduate degrees awarded to populations historically underrepresented in these disciplines: African Americans, Hispanic Americans, American Indians, Alaska Natives, Native Hawaiians, and Native Pacific Islanders. LSAMP's efforts to increase diversity in STEM are aligned with the goals of the Federal Government's five-year strategic plan for STEM education, *Charting a Course for Success: America's Strategy for STEM Education*.

The LSAMP program takes a comprehensive approach to student development and retention. Particular emphasis is placed on transforming undergraduate STEM education through innovative, evidence-based recruitment and retention strategies, and relevant educational experiences in support of racial and ethnic groups historically underrepresented in STEM disciplines.

The LSAMP program also supports knowledge generation, knowledge utilization, assessment of program impacts and dissemination activities. The program seeks new learning and immediate diffusion of scholarly research into the field. Under this program, funding for STEM educational and broadening participation research activities could include research to develop new models in STEM engagement, recruitment and retention practices for all critical pathways to STEM careers or research on interventions such as mentoring, successful learning practices and environments, STEM efficacy studies, and use of technology to improve learning or student engagement.

Overall, 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-qualified students from underrepresented minority groups who pursue graduate studies or careers in STEM.

Project types under this program include:

1. Alliances.

   Alliances are consortia of multiple degree-granting institutions. Organizations from other sectors, including informal science organizations, may be participants. Projects focus on pre-college and undergraduate recruitment and retention activities. Types of LSAMP alliances are described as follows:

   a. STEM Pathways Implementation-Only Alliance projects are mainly focused on a particular STEM pathway or transition, e.g., entry into college, first two years, or preparation for entry into graduate studies. Additionally, the project may focus on activities dedicated to diversifying a particular STEM discipline. These projects are targeted to newly-created alliances, reconstituted alliances or alliances that have received support by the program for 10 years or less. Initial institutionalization and sustainability planning for the alliance should be addressed in the project description. Projects are five years in duration.
   b. STEM Pathways and Research Alliances are projects that focus on the full STEM pathway and provide direct support for undergraduate students but also serve as a hub for the production of scholarly STEM research and evaluation to increase the knowledge-base and utilization in broadening participation. Projects are required to address the current state of its institutionalization and sustainability efforts and address these areas in evaluation planning. All required components must be addressed to be competitive for this project type. These are five-year projects.
   c. Bridge to the Baccalaureate (B2B) Alliances involve associate degree producing institutions for which the lead institution must be a community college. These projects focus on activities that provide effective educational preparation of community college students from underrepresented minority populations for successful transfer to four-year institutions in STEM degree programs. Initial institutionalization and sustainability planning for the alliance should be addressed in the project description. These are three-year projects.
2. Bridge to the Doctorate (BD) Activity: BD projects are projects that focus on providing post-baccalaureate fellowship support to a cohort of 12 LSAMP students for the first two years of their STEM graduate studies and provides the necessary academic and research skills that will enable them to successfully earn STEM doctoral degrees and transition into the STEM workforce. Only institutions in well-established alliances funded 10 or more consecutive years are eligible for this funding opportunity. These are two-year projects.

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[1]Clewell, B.C., Cosentino de Cohen, C. , Tsui, L. and Deterding, N. (2006). *Revitalizing the Nation's Talent Pool in STEM*. Urban Institute. Washington, D.C.

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.

- LSAMP Program Team, telephone: (703) 292-8640, fax: (703) 292-9018, email: LSAMP_national@nsf.gov
- A. James Hicks, Co-Lead/Program Director, telephone: (703) 292-4668, email: ahicks@nsf.gov
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Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):

- 47.076 --- Education and Human Resources

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 13

Up to 8 new awards in FY2021 and up to 13 new awards in FY2022. FY2022 estimate includes BD. Subject to number of proposal submissions and availability of funds.

Anticipated Funding Amount: $10,000,000

An estimated amount of $10M will be available for new awards from all LSAMP funding opportunities annually.

Eligibility Information

Who May Submit Proposals:

Proposals may only be submitted by the following:

- **The following may submit as lead and formal partner organization for Alliances (B2B, SPIO, SPRA) and BD project types:**
    - **Institutions of Higher Education (IHEs):** Two- and four-year IHEs (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Special Instructions for International Branch Campuses of US IHEs: If the proposal includes funding to be provided to an international branch campus of a US institution of higher education (including through use of subawards and consultant arrangements), the proposer must explain the benefit(s) to the project of performance at the international branch campus, and justify why the project activities cannot be performed at the US campus.

    The following may submit as lead or collaborating organization for the Regional Foundational and Forward-Thinking Educational Research Conferences project type:
    - **Institutions of Higher Education (IHEs)**: Two- and four-year IHEs (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Special Instructions for International Branch Campuses of US IHEs: If the proposal includes funding to be provided to an international branch campus of a US institution of higher education (including through use of subawards and consultant arrangements), the proposer must explain the benefit(s) to the project of performance at the international branch campus, and justify why the project activities cannot be performed at the US campus.
    - **Non-profit, non-academic organizations:** Independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities.
    - **For-profit Organizations:** U.S. commercial organizations, especially small businesses with strong capabilities in scientific or engineering research or education.

Who May Serve as PI:

The Principal Investigator (PI) for **Alliances (including Bridge to the Baccalaureate)** should be the President, Chancellor, or Provost of the lead institution and 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 full justification is needed for a PI designation at variance with this requirement. Co-principal investigators (Co-PIs) from partner institutions may be designated for the project.

For **STEM Pathways and Research Alliances** one or more of the Co-PIs must be a social or data scientist, disciplinary/interdisciplinary education researcher or evaluator.

The Principal Investigator for **Bridge to the Doctorate (BD)** proposals should be the President, Chancellor, or Provost of the BD site and 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 full justification is needed for a PI /Co-PI designation at variance with this requirement. One Co-PI must be the alliance director if the selected BD site is different from the lead institution.

Limit on Number of Proposals per Organization:

Alliances: Only one proposal may be submitted by an eligible (lead) institution. Alliances 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 and receive funding from the project. This eligibility applies to proposals for **STEM Pathways Implementation-Only Alliances**, **Bridge to the Baccalaureate Alliances**, and **Louis Stokes STEM Pathways and Research Alliances**.

Bridge to the Doctorate (BD) Activity Projects: One proposal for BD support may be submitted by an eligible alliance institution. An institution may have only one active BD award. New proposals for additional cohorts may be submitted once the current award has expired.

Regional Foundational and Forward-Thinking Educational Research Conferences: Only one proposal per year may be submitted by an eligible institution or organization.

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

Alliances: New and existing: 1

Bridges to the Doctorate (BD) Activity: 1

Regional Foundational and Forward-Thinking Educational Research Conferences: 1

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

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

B. Budgetary Information

- **Cost Sharing Requirements:**

    Inclusion of voluntary committed cost sharing is prohibited.

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

    Not Applicable

- **Other Budgetary Limitations:**

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

C. Due Dates

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

    November 20, 2020

    Third Friday in November, Annually Thereafter

    > STEM Pathways Implementation-Only (SPIO), STEM Pathways and Research (SPRA) and Bridge to the Baccalaureate (B2B) Proposals

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

    June 01, 2021

    > Regional Foundational and Forward-Thinking Educational Research Conferences (may be submitted by the target date or at any time during the year)

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:

Standard NSF reporting requirements apply.

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I. INTRODUCTION

Louis Stokes Alliances for Minority Participation (LSAMP) is a program in the Division of Human Resource Development (HRD), within the Directorate for Education and Human Resources (EHR) at the National Science Foundation (NSF). LSAMP was authorized by Congress and established in 1991 to help diversify the science, technology, engineering and mathematics (STEM) workforce. The program accomplishes this mission by funding institutions of higher education through a collective plan of action to implement evidence-based strategies for recruitment and retention to STEM degree for students historically underrepresented in these disciplines.

The LSAMP program priorities are to (a) increase individual student engagement, retention and progression to baccalaureate degrees for underrepresented racial and ethnic groups, (b) enable successful transfer of underrepresented minority students from two-year to four-year institutions in STEM programs (c) increase access to high quality STEM mentoring and undergraduate and graduate research experiences, (d) facilitate seamless transition of underrepresented minority students into STEM graduate programs and degree completion and (e) stimulate new research and learning on broadening participation in STEM disciplines.

LSAMP's efforts to increase diversity in STEM are aligned with the goals of the Federal Government's five-year strategic plan for STEM education, *Charting a Course for Success: America's Strategy for STEM Education*.

II. PROGRAM DESCRIPTION

The Louis Stokes Alliances for Minority Participation (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.

The overall goal of the LSAMP program is to help diversify the nation's STEM workforce by funding institutions of higher education to implement comprehensive, evidence-based, and sustained approaches to broadening the participation of students historically underrepresented in STEM (African Americans, Hispanic Americans, American Indians or Alaska Natives, Native Hawaiians or Other Pacific Islanders) primarily at the undergraduate (including community college) and post-baccalaureate levels. These approaches facilitate the successful production of highly capable and diverse STEM talent.

The program continues to support the production of scholarly research and dissemination activities on STEM broadening participation. For example, the program provides wide latitude for SPRA alliance projects to design educational research activities that provide new scholarly research, including evaluation research, for culturally-relevant approaches to student success at critical pathways.

Proposers are highly encouraged to collaborate with institutions with active awards from programs in NSF's Division of Undergraduate Education (DUE), specifically the Improving Undergraduate STEM Education (IUSE), NSF Scholarships in Science, Technology, Engineering and Mathematics (S-STEM), or Advanced Technological Education (ATE) programs, for example. These programs provide STEM scholarships and support to increase institutional capacity through faculty and curriculum development, which could complement proposed LSAMP activities. For details on DUE, visit https://www.nsf.gov. While the LSAMP program does not directly support K-12 activities, collaborations with organizations and projects at the K-12 level are highly encouraged for all alliance projects to leverage resources.

Proposals must demonstrate creative thinking, innovative strategies, relevant pedagogies, and partnerships to maximize opportunities that prepare students from historically underrepresented minority populations for 21st century STEM careers. Proposals should (1) address present and persistent challenges in diversifying the STEM workforce; (2) demonstrate authentic and impactful partnerships among collaborators and alliance members that prepare students for success; (3) address student preparation for current and emerging scientific and technological challenges and opportunities that pertain to national priorities,

e.g., NSF's Ten Big Ideas or new scientific and technological needs. NSF INCLUDES, which addresses diversification of the nation's STEM talent, biological sciences, artificial intelligence, data science, and cybersdiecurity are a few current areas of national priority. An overall, well-conceived plan for supporting the students' successful matriculation through the institution's STEM program and a discussion of the plan's ability to accomplish meaningful and robust dissemination of findings from project activities, especially regarding methodology, that may be replicated at other institutions, collaboratives or alliances is expected. Ultimately, highly competitive proposals will be creative in their preparation of students served and will provide well-defined plans for preparing those students for meaningful 21st century STEM engagement.

Proposers should note the following when preparing proposals:

- The program allows grantees to provide performance-based stipend support to participants. The program is not a financial aid scholarship program. Funds should not be used for this purpose.
- Funds are provided to institutions and organizations only and not directly to students. Participants receiving direct stipend support must be U. S. citizens, U. S. nationals or permanent residents of the United States.
- Pre-college activities, other than summer bridge programs to community college or four-year institutions, are unallowable.
- Students designated as dual enrollees while matriculating at the high school level may not receive direct support from LSAMP projects. These students should not be targeted for recruitment.

A full description of LSAMP funding opportunities and proposal requirements follows:

1. ALLIANCES: General Requirements

Alliances may consist of different institutional types and are funded to implement comprehensive evidence-based strategies that ultimately result in the graduation of well-prepared, highly-qualified students from historically underrepresented minority groups in STEM disciplines who pursue graduate studies or careers in these fields.

Alliance Structure: Alliances may have partner institutions drawn from among four-year institutions, community colleges, school systems, Federal/state/local government agencies, major national laboratories and centers, industry, private foundations, and professional STEM organizations. Institutions partnering in an alliance may not be a formal partner in more than one alliance. See definition of formal partner under the "Eligibility" section.

All alliance proposals must provide a rationale for the inclusion of the different institutional partners and describe a cohesive structure. 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.

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 (linked) proposals are ineligible for consideration.

Proposer/Proposal Expectations: All proposers must commit to a significant increase in baccalaureate production in STEM fields within a five-year award period and justify the level of increase they define as significant. Data must be expressed and shown in numbers and percentages. A clear plan of action to significantly increase baccalaureate STEM degrees awarded to racial/ethnic students historically underrepresented in STEM at individual four-year institutions is essential for a competitive proposal.

Allowable Activities: The NSF LSAMP program provides wide latitude to proposers in designing their alliance activities. Proposed activities should be grounded in evidence-based practices and sound programmatic approaches that are clear and well-defined with measurable goals and objectives. Proposed alliance activities must form a feasible, logical, and comprehensive effort focused on improving undergraduate STEM educational experiences for historically underrepresented minority students. While the 2006 evaluation report by the Urban Institute references the research and theoretical basis of the LSAMP program and describes the elements of the "LSAMP model", proposers are not limited to this program theory as the basis for proposed implementation activities. Proposers are encouraged to submit proposals that are innovative which may require risk and experimentation to enable new discovery.

Alliance projects must place emphasis on developing strategies for: a) individual student retention and progression to baccalaureate degrees, b) successful transfer of underrepresented minority students from two-year to four-year institutions in STEM programs c); high quality undergraduate research experiences for alliance students, and d) seamless transition of students into STEM graduate programs.

Alliance proposals are required to describe in detail the comprehensive plan that will be implemented both alliance-wide and in the individual institutions. The plan could focus on innovative strategies for recruitment and retention of freshman and sophomore students in STEM disciplines, interventions for retention of upper level STEM majors, academic enrichment activities, professional development or graduate school preparation activities, and/or undergraduate research experiences both domestic and abroad. Preparing a diverse, globally-engaged scientific and technological workforce necessitates strengthening international research opportunities for students underrepresented in STEM fields. Alliances are encouraged to develop a plan to engage STEM students in international research opportunities. These international opportunities must reach beyond conference attendance and cultural experiences to be considered a strong aspect of an alliance proposal.

Proposals may include a one-page mentoring plan in the supplementary documentation section of the proposal for participants. The mentoring plan should address how students will be paired with research mentors and describe any training that would be provided to the research mentors and students.

Proposals must include a description of faculty involvement and list the names of faculty who will serve as research mentors, clearly demonstrate linkages with NSF-funded or other federally-funded student support programs, and provide evidence of strong articulation agreements with community colleges both within the alliance and outside of the alliance. Evidence of linkages must be provided through letters of collaboration. All proposals must include institutional baseline data for each STEM discipline: enrollment, transfer, graduation rates, matriculation into and completion of graduate programs for the targeted groups of students underrepresented in STEM.

Rigorous evaluation of projects is a high priority for the LSAMP program. Therefore, all LSAMP proposals must include an evaluation plan that is based on benchmarks, indicators, or expected outcomes related to project goals and activities. Evaluation plans should be appropriate to the scope of the project and include a logic model or other tool that connects the project goals to the specific activities, outputs, and outcomes. Well-established alliances must address assessment of current and continuing institutionalization and sustainability in the project's evaluation plan.

Project evaluations for LSAMP alliance proposals should provide clear benchmarks and indicators of progress that will inform reviewers of the proposers' understanding of essential recruitment and retention factors for judging accountability, both quantitative (enrollment and baccalaureate degree production of underrepresented minority groups) and qualitative (the process of change in organizational culture, impact and progress in developing highly competitive, well-prepared diverse STEM students). Formative and summative evaluations should include holistic assessments of the collaboration/partnership in addition to evaluation of the individual interventions and status of institutionalization efforts.

The evaluator should be external to the project and named in the Project Description section of the proposal. Proposals should: (1) describe the expertise of the

evaluator(s); (2) explain how that expertise relates to the goals and objectives of the proposal; and (3) specify how the PI will report and use results of the project's external review process. The biosketch(es) of the external evaluator or team should be uploaded as a supplementary document. Evaluators are expected to adhere to the American Evaluation Association's Guiding Principles for Evaluators (http://www.eval.org/p/cm/ld/fid=51), and project evaluations are expected to be consistent with standards established by the Joint Committee on Standards for Educational Evaluation (http://www.jcsee.org/program-evaluation-standards-statements).

Proposers are encouraged to collaborate with institutions with active awards from programs in NSF's Division of Undergraduate Education (DUE); specifically, IUSE (Improving Undergraduate STEM Education), S-STEM (NSF Scholarships in Science, Technology, Engineering, and Mathematics), or ATE (Advanced Technological Education). These programs provide STEM scholarships and support to increase institutional capacity through faculty and curriculum development, which could complement proposed LSAMP activities. For details on DUE, visit https://www.nsf.gov/div/index.jsp?org=DUE.

Proposals that address preparation in STEM disciplines, particularly scientific and technical areas of national priority, are highly encouraged and will be most competitive for funding considerations. Additionally, highly competitive proposals must demonstrate creative thinking, strategies, pedagogies and partnerships to maximize opportunities in preparing racial/ethnic minority students for 21st Century STEM careers and addressing present challenges in diversifying the STEM workforce.

a. STEM Pathways Implementation-Only Alliances (SPIO)

(For new and reconstituted alliances and alliances in existence for 10 consecutive years or less)

New alliances: Proposals for new alliances should also refer to the section on general alliance requirements. Expectations are placed on institutionalizing, disseminating, and promoting the replication of strategies and collaborative approaches that have been effective in the recruitment and retention of racial/ethnic students historically underrepresented in STEM as well as the successful transition of undergraduate STEM students into graduate STEM programs. Proposals must indicate past institutional successes e.g., efforts at transforming the academic and/or research environment, in producing highly competitive underrepresented minority students in STEM disciplines.

Existing Alliances: Proposals for existing or reconstituted alliances should also refer to the section on general alliance requirements. Alliances that have received an initial LSAMP award must adhere to the guidance provided above and address the institutionalization and sustainability of LSAMP-supported activities during the previous project period. Proposals should include a description of the progress that has been made towards sustainability, detailing the components that have been institutionalized, and describing any systemic changes in STEM departments or alliance institutions that have resulted from the NSF LSAMP investment within the project description.

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.

New or reconstituted alliances submitting proposals for this project type should begin the title of the proposal with the following: **Louis Stokes New STEM Pathways Implementation-Only Alliance:**

Existing alliances submitting proposals for this project type should begin the title of the proposal with the following: **Louis Stokes STEM Pathways Implementation-Only Alliance:**

b. STEM Pathways and Research Alliances

(For Well-Established Alliances Funded 10 Consecutive Years or More)

Proposers should also refer to the section on general alliance requirements. The STEM Pathways and Research Alliance (SPRA) projects are three-pronged in approach. Proposals 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 underrepresented minority 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.

Broadening Participation Research Component: Proposers for these projects are required to include an innovative knowledge-generating research component that rigorously investigates effective practices or innovations in STEM education. The research may be related to the proposed alliance strategies for recruiting, retaining, and graduating minority students historically underrepresented in STEM or can be research on any topic of broadening participation, including institutional transformation, regional approaches, science of broadening participation, and persistence in STEM. Results and recommendations from these activities must be disseminated broadly; therefore, creativity in developing and implementing the dissemination plan is expected. The primary purpose of the research component is to produce new knowledge and to disseminate new learning to the nation.

Suggested research topics for SPRA projects may include 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, etc. Guiding questions for the research component could include the following:

- What are the underlying issues affecting the differential participation and graduation rates in STEM undergraduate education of students historically underrepresented in STEM?
- What replicable models of successful alliance strategies can be developed, described and adopted by other non-alliance institutions that serve students from historically underrepresented populations?
- Why are certain components of the models more effective in different institutional or regional contexts?
- What are the different methods and why are certain ones more effective for increasing the capacity of alliance institutions to produce more well-qualified STEM graduates who matriculate into STEM graduate programs or enter the workforce?
- How does the engagement in discipline-specific undergraduate research affect retention of students from underrepresented populations in STEM?
- To what extent, if any, do students' demographic/background characteristics (e.g., gender, ethnicity, socio-economic status and high school GPA) and students' contextual and environmental characteristics (e.g., academic integration, and institutional selectivity) affect their STEM persistence and degree completion status?
- Controlling for demographic and background characteristics and students' contextual and environmental characteristics, to what extent do individuals' non-cognitive attributes (i.e., self-efficacy, outcome expectations, and STEM interest and identity) contribute to STEM persistence and degree completion status?

A highly qualified team of experts in social science research, STEM education research and/or evaluation, suitable for implementing the research plan, must be articulated in the proposal. It is expected that over the five-year duration of the project, a number of reports will be produced and disseminated broadly in

conjunction with larger, more rigorous studies. Highly competitive proposals will address new and innovative topics and will provide evidence of collaborations with other intramural or extramural STEM funded programs/personnel within the alliance. Such programs could include NSF INCLUDES, Historically Black Colleges and Universities-Undergraduate Program (HBCU-UP), projects within NSF's Divisions of Undergraduate and Graduate Education programs, Science and Technology Centers or other STEM center-funded programs.

New Requirement for Well-Established Alliance Proposals

Assessment of Institutionalization and Sustainability Component: Well-established alliances that have received continuous support from the NSF LSAMP program for 10 or more consecutive years are required to include a holistic overview of up to three pages describing 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 for 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. It should **NOT** be included in the supplementary documentation section of the proposal.

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

Useful Resources for Educational Research

The National Science Foundation and the Institute of Education Sciences 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 empirical and/or theoretical justifications, types of project outcomes, and quality of evidence.

The *Guidelines* publication can be found on the NSF website with the number NSF 13-126 (https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf13126). A set of FAQs regarding the *Guidelines* are available with the number NSF 13-127 (https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf13127). Grant proposal writers and PIs are encouraged to familiarize themselves with both documents and use the information therein in the preparation of educational research activities.

Alliances submitting proposals for this project type should begin the title of the proposal with the following: **Louis Stokes New (or Renewal) STEM Pathways and Research Alliance: (Name of Alliance)**

c. Bridge to the Baccalaureate (B2B)
(For Community Colleges Only)

Community colleges are a valuable resource that contributes to the diversity of the STEM workforce. The Bridge to the Baccalaureate (B2B) alliances are partnerships of community colleges funded up to three years to develop comprehensive programs that facilitate the successful transfer of students historically underrepresented in STEM to four-year institutions in pursuit of STEM baccalaureate degrees.

B2B Alliance Structure: B2B Alliances are composed entirely of two-year colleges. The lead institution must award associate-level degrees in a STEM or STEM-related field. Associate-level degree-granting colleges that award four-year degrees in workforce development areas may be eligible to serve as the lead institution of a B2B alliance. Four-year colleges that award STEM baccalaureate degrees are ineligible to serve as lead institutions for B2B alliances but may be included as partner institutions of the alliances for articulation purposes. Funds are not budgeted for four-year institutions in B2B projects. Proposers should contact program staff to discuss eligibility for B2B alliance support if in question.

B2B alliances should focus on innovative, evidence-based recruitment and retention strategies at the community college level with particular emphasis on strengthening STEM skills at the pre-college, freshman and sophomore levels in STEM disciplines.

Expectations of B2B Alliances: The NSF LSAMP program provides wide latitude to proposers in designing their projects. Community college strategies, components, and interventions aimed at strengthening the transfer to four-year STEM degree programs are supported through these alliances. Proposers for B2B support must present evidence of strong articulation and transfer agreements with four-year institutions. All new 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 significantly increase the transfer of students historically underrepresented in STEM that is supported by data and tracking student outcomes 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.

All B2B proposal requests for funding must describe plans for tracking student progress over the course of funding and post-award. 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 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.

Institutions submitting new proposals for this project type should begin the title of the proposal with the following: **Louis Stokes B2B Alliance: (Name of Alliance)**

2. Bridge to the Doctorate (BD) Activity
(For Participating LSAMP Institutions Funded 10 Consecutive Years or More)

This project type provides financial support (stipends and cost of education) to a critical mass of twelve STEM baccalaureate-degree recipients 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. All students receiving LSAMP-BD fellowships must be U.S. citizens, U.S. nationals, or permanent residents of the United States.

Expectations of BD Programs: The ultimate goal of the LSAMP-BD program is to prepare historically underrepresented minority students for completion of STEM doctoral degree programs. At the post-baccalaureate level, BD sites provide necessary academic and research skills that enable participants to successfully persist in STEM graduate degree programs.

LSAMP-BD sites are required to recruit a cohort of twelve LSAMP students from LSAMP institutions. Recruitment of participants is expected from all STEM disciplines. The recruitment plan must demonstrate national efforts to obtain BD-eligible participants.

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

BD 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 underrepresented minority graduate students. In the proposal, the recruitment plans and selection process of BD participants must be clearly stated as well as the requirements for STEM degree completion.

Proposals may 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 participants. Highly competitive proposals will provide evidence of linkages to innovative and cutting edge national and international research priorities during the period of support.

Where applicable, proposers are required to provide documentation of past performance at the designated graduate institutional host site of retaining and placing significant numbers of LSAMP graduates into STEM Ph.D. programs. A plan for formally connecting a significant number of newly matriculated LSAMP students to STEM doctoral degree programs is expected. BD programs are expected to place emphasis on designing structured student support strategies that enable students 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 an action plan that describes the level and type of institutional commitment that will be available for supporting BD participants after two years of NSF funding within the project description. The plan should include sources and dollar amounts of support for continuing students in years three and beyond towards doctorate degrees. BD programs are encouraged to partner with other NSF-funded programs, such as Centers of Research Excellence in Science and Technology (CREST), NSF research centers or Alliances for Graduate Education and the Professoriate (AGEP) or other intra- or extramural funding which could provide support for graduate students. The process for tracking project participants that enter STEM graduate programs must be described in the proposal.

First time BD sites must describe, within the rationale for funding, the institution's performance or current efforts in diversifying the STEM graduate culture at the institution. Graduate STEM enrollment and STEM degree production data and analysis must be included in the project description for a five-year period.

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 historically underrepresented minority populations. Evidence-based practices must be demonstrated in the activities proposed.

BD proposals must include a rigorous project or program evaluation plan and robust dissemination.

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.

Budget Guidelines: The maximum request per eligible alliance for BD support is $1,075,000 for 24 months. All support costs for BD students should be listed on Line F, "Participant Support," of budget.

- Graduate student stipends should be shown in the amount of $32,000 per year for two years for each of the twelve students.
- NSF will provide a cost-of-education allowance to the institution for tuition, health insurance, and other normal fees up to $12,000 per year for up to two years for each of the twelve students.
- Additional funds, up to $19,000 total, may be requested. Ideally, these funds may be used for support of required PI meeting attendance, evaluation activities and/or related indirect costs.
- Salary support for administrative personnel is not allowable under this project type.

Institutions submitting proposals for this project type should begin the title of the proposal with the following: **<u>LSAMP BD: (Site Name Followed By Name of Alliance)</u>**

3. Regional Conferences - Regional Foundational and Forward-Thinking Educational Research Conferences

Proposals for "Developing Future-Oriented STEM Education Research and/or Priority Areas for Foundational STEM Education Research" conferences **may be submitted by the target date or at any time during the year, but the proposers should plan on at least 10 months lead time to allow for review and processing of the proposal**. The proposal should include a rationale for organizing the conference, a draft agenda, a list of invitees, the outcomes or products that will result from the conference, and how these outcomes serve the goals of the broadening participation community. Budgets are expected to be commensurate with the duration of the event and the number of participants, but the cost should not exceed a total of $100,000 per event. STEM-related professional societies, non-profit organizations, Louis Stokes Regional Centers of Excellence (LSRCEs) or institutions in well-established alliances, particularly minority-serving institutions, are encouraged to apply.

Prospective PIs are advised to contact a LSAMP program officer to discuss ideas for the event prior to submission. Guidance on the preparation of Conference proposals is contained in Chapter II.E.7 of the NSF PAPPG. **Conference proposals must be submitted via FastLane or Grants.gov.** The "Conference" type of proposal should be selected in the proposal preparation module in FastLane or Grants.gov and the title of the proposal should begin with the following: **Forward-Thinking Educational Research Conference: (Conference Title and Planned Date)**

III. AWARD INFORMATION

"The number and size of awards will vary depending upon the scope of projects and availability of funds. Approximately $45.6 million is expected to be available annually for <u>new and existing</u> awards.

ESTIMATED PROGRAM BUDGET AND NUMBER OF AWARDS IS SUBJECT TO THE AVAILABILITY OF FUNDS.

Proposed budgets for all projects described under this solicitation, except BD projects, should include budget support for rigorous evaluation.

All alliance and BD proposals must include travel for the PI or Co-PI to participate in required annual NSF grantee meetings in the Washington, DC metropolitan

area (or other designated locality) over the duration of the project.

CUMULATIVE BUDGET LEVEL GUIDELINES FOR EACH LSAMP PROJECT TYPE

Bridge to the Baccalaureate (B2B) Alliance Proposals (New and Renewal)

- Up to $500,000 per year, three-year maximum budget total is $1.5M

STEM Pathways Implementation-Only (SPIO) Alliance Proposals (New and Renewal)

- Up to $700,000 per year, five-year maximum budget total is $3.5M

New **STEM Pathways and Research (SPRA) Alliance Proposals**

- Up to $600,000 per year, five-year maximum budget total is $3.0 million

Renewal STEM Pathways and Research (SPRA) Alliance Proposals

- Up to $500,000 per year, five-year budget total is $2.5 million

The total award size for Regional Foundational and Forward-Thinking Educational Research Conferences is $100,000.

SUMMARY OF LSAMP FUNDING OPPORTUNITIES, AWARD AMOUNTS, DURATIONS AND AWARD TYPES (Excludes Conferences)

STEM Pathways Implementation-Only Alliance Projects (For new and existing alliances in existence for 10 years or less)

Number of awards: Up to 2 annually

- Project Length: 5 Years
- *Award size: Up to $3.5M
- Grant Administration: New awards will be managed by NSF as continuing grants

New and existing STEM Pathways and Research Alliances Projects (For alliances in existence for 10 years or more)

Number of awards: Up to 2 annually

- Project Length: 5 Years
- *Award size: Up to $3.0M (New); $2.5 M (Existing)
- Grant Administration: New awards will be managed by NSF as continuing grants

Bridge to the Baccalaureate (B2B) Projects

Number of awards: Up to 2 annually

- Project Length: 3 Years
- Award size: Up to $1.5M
- Grant Administration: New awards will be managed by NSF as continuing grants

Bridge to the Doctorate Activity (BD) Projects

Number of awards: Up to 5 per competition

- Project Length: 2 Years
- Award size: Up to $1,075,000 (Per student: $64,000 stipend, $24,000 cost of education); $19,000 (in lieu of indirect costs)
- Grant Administration: New awards will be managed by NSF as standard grants

IV. ELIGIBILITY INFORMATION

Who May Submit Proposals:

Proposals may only be submitted by the following:

- **The following may submit as lead and formal partner organization for Alliances (B2B, SPIO, SPRA) and BD project types:**
  - **Institutions of Higher Education (IHEs):** Two- and four-year IHEs (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Special Instructions for International Branch Campuses of US IHEs: If the proposal includes funding to be provided to an international branch campus of a US institution of higher education (including through use of subawards and consultant arrangements), the proposer must explain the benefit(s) to the project of performance at the international branch campus, and justify why the project activities cannot be performed at the US campus.

  The following may submit as lead or collaborating organization for the Regional Foundational and Forward-Thinking Educational Research Conferences project type:
  - **Institutions of Higher Education (IHEs)**: Two- and four-year IHEs (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Special Instructions for International Branch Campuses of US IHEs: If the proposal includes funding to be provided to an international branch campus of a US institution

of higher education (including through use of subawards and consultant arrangements), the proposer must explain the benefit(s) to the project of performance at the international branch campus, and justify why the project activities cannot be performed at the US campus.

- **Non-profit, non-academic organizations:** Independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities.
- **For-profit Organizations:** U.S. commercial organizations, especially small businesses with strong capabilities in scientific or engineering research or education.

Who May Serve as PI:

The Principal Investigator (PI) for **Alliances (including Bridge to the Baccalaureate)** should be the President, Chancellor, or Provost of the lead institution and 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 full justification is needed for a PI designation at variance with this requirement. Co-principal investigators (Co-PIs) from partner institutions may be designated for the project.

For **STEM Pathways and Research Alliances** one or more of the Co-PIs must be a social or data scientist, disciplinary/interdisciplinary education researcher or evaluator.

The Principal Investigator for **Bridge to the Doctorate (BD)** proposals should be the President, Chancellor, or Provost of the BD site and 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 full justification is needed for a PI /Co-PI designation at variance with this requirement. One Co-PI must be the alliance director if the selected BD site is different from the lead institution.

Limit on Number of Proposals per Organization:

Alliances: Only one proposal may be submitted by an eligible (lead) institution. Alliances 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 and receive funding from the project. This eligibility applies to proposals for **STEM Pathways Implementation-Only Alliances**, **Bridge to the Baccalaureate Alliances**, and **Louis Stokes STEM Pathways and Research Alliances**.

Bridge to the Doctorate (BD) Activity Projects: One proposal for BD support may be submitted by an eligible alliance institution. An institution may have only one active BD award. New proposals for additional cohorts may be submitted once the current award has expired.

Regional Foundational and Forward-Thinking Educational Research Conferences: Only one proposal per year may be submitted by an eligible institution or organization.

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

Alliances: New and existing: 1

Bridges to the Doctorate (BD) Activity: 1

Regional Foundational and Forward-Thinking Educational Research Conferences: 1

Additional Eligibility Info:

Alliance proposals: 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 (linked) proposals are ineligible for consideration.

Regional Foundational and Forward-Thinking Educational Research Conference proposals: Collaborative proposals may be submitted to NSF using either method described in Chapter II.D.3 or the PAPPG: as a single proposal, in which a single award is being requested (with subawards administered by the lead organization); or by simultaneous submission of proposals from different organizations, with each organization requesting a separate award.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

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

- Full proposals submitted via FastLane: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG). The complete text of the PAPPG is available electronically on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg. Paper copies of the PAPPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-8134 or by e-mail from nsfpubs@nsf.gov. Proposers are reminded to identify this program solicitation number in the program solicitation block on the NSF Cover Sheet For Proposal to the National Science Foundation. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.
- Full Proposals submitted via 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.

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

The following information provides instructions that supplement the PAPPG and the NSF Grants.gov Application Guide. Refer also to Section II, Program Description, for additional proposal preparation information and instructions.

For the COVER SHEET: After selecting the LSAMP program solicitation number, under the "NSF Unit Consideration" please select the following:

- "HRD-Division of Human Resource Development" as the NSF division
- "Alliances for Minority Participation (AMP)" for the NSF program (LSAMP was previously known as AMP)

Proposals failing to clearly identify the appropriate program/activity may be returned without review at the discretion of NSF program staff. Grants.gov users should refer to Chapter VI of the NSF Grants.gov Application Guide for guidance about entering NSF Unit Consideration information. The program solicitation number will be pre-populated by Grants.gov on the NSF Grant Application Cover Page.

Review the regulations regarding Human Subjects (45 CFR 690.101-124 https://www.nsf.gov/bfa/dias/policy/human.jsp). This is particularly important for EAGER proposals and proposals from alliances in existence more than 10 years that are required to incorporate an educational research study. Please note that Human Subjects regulations also govern activities that have to do with safeguarding individually identifiable information such as student and faculty surveys and data. Therefore many Projects may need to be reviewed by the Human Subjects Internal Review Board (IRB) for the institution. If the project will be IRB reviewed, please indicate on the cover sheet that the review is pending. If the proposal has already been IRB reviewed and found to be exempt, please indicate so on the cover sheet. If the IRB has already given approval of the activities, include a letter from the IRB and indicate the expiration date of the IRB approval on the cover sheet. Please note that an award cannot be made unless the IRB process has been completed and documentation has been received by the program director prior to recommending the award.

ADDITIONAL GUIDANCE FOR REQUIRED COMPONENTS OF LSAMP PROPOSALS (Supplementary Documentation Section Only)

SUPPLEMENTARY DOCUMENTS: The PAPPG or NSF Grants.gov Application Guide requires the following supplementary documents: Data Management Plan and Postdoctoral Researcher Mentoring Plan, if applicable. In addition to these required documents, the only other permitted Supplementary Documents for LSAMP proposals are: Letters of Collaboration (described below); Curriculum vitae(s) for external evaluator(s) and education or social science researcher(s); Logic Model or other programmatic roadmap for the Evaluation Plan (see section on Project Evaluation); and Data Tables (described below) and mentoring plans (for Alliance and BD proposals - see Section II, Program Description). *Note: Biosketches for all senior personnel are required to be uploaded in a different section.*

- ***Letters of Collaboration*** are required from **each** partner organization for all proposals under this solicitation. BD proposals must provide some evidence of collaboration with institutions within the alliance. Signed letters should indicate collaborative arrangements and planned contributions of significance to the project.

Additionally, signed letters from key senior administrators should clearly and specifically state how the institutions will support the PI, Co-PIs, members of the alliance leadership team, and the project. Letters that merely endorse the proposal or offer nonspecific general support for project activities or are sent via mail or email are not acceptable.

- **Required Data Tables** must include institutional baseline data for each STEM discipline: enrollment, transfer, graduation, matriculation into and completion of undergraduate and graduate STEM programs for the targeted groups of students underrepresented in STEM.

SINGLE COPY DOCUMENTS: Collaborators & Other Affiliations (COA) information specified in the PAPPG should be submitted using the instructions and spreadsheet template found at https://www.nsf.gov/bfa/dias/policy/coa.jsp.

Note: A proposal will be returned without review if unallowable documents are included. Please do not include uploads of alliance Impact Reports.

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. submitter's local time):

    November 20, 2020

    Third Friday in November, Annually Thereafter

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

November 05, 2021

First Friday in November, Every Other Year Thereafter

Bridge to the Doctorate (BD) Activity Proposals

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

June 01, 2021

Regional Foundational and Forward-Thinking Educational Research Conferences (may be submitted by the target date or at any time during the year)

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

For Proposals Submitted Via FastLane or Research.gov:

To prepare and submit a proposal via FastLane, see detailed technical instructions available at: https://www.fastlane.nsf.gov/a1/newstan.htm. To prepare and submit a proposal via Research.gov, see detailed technical instructions available at: https://www.research.gov/research-portal/appmanager/base/desktop?
_nfpb=true&_pageLabel=research_node_display&_nodePath=/researchGov/Service/Desktop/ProposalPreparationandSubmission.html. For FastLane or Research.gov user support, call the FastLane and Research.gov Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov or rgov@nsf.gov. The FastLane and Research.gov Help Desk answers general technical questions related to the use of the FastLane and Research.gov systems. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this funding opportunity.

For Proposals Submitted Via Grants.gov:

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

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

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

VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

Proposals received by NSF are assigned to the appropriate NSF program for acknowledgement and, if they meet NSF requirements, for review. All proposals are carefully reviewed by a scientist, engineer, or educator serving as an NSF Program Officer, and usually by three to ten other persons outside NSF either as *ad hoc* reviewers, panelists, or both, who are experts in the particular fields represented by the proposal. These reviewers are selected by Program Officers charged with oversight of the review process. Proposers are invited to suggest names of persons they believe are especially well qualified to review the proposal and/or persons they would prefer not review the proposal. These suggestions may serve as one source in the reviewer selection process at the Program Officer's discretion. Submission of such names, however, is optional. Care is taken to ensure that reviewers have no conflicts of interest with the proposal. In addition, Program Officers may obtain comments from site visits before recommending final action on proposals. Senior NSF staff further review recommendations for awards. A flowchart that depicts the entire NSF proposal and award process (and associated timeline) is included in PAPPG Exhibit III-1.

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

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

One of the strategic objectives in support of NSF's mission is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions must recruit, train, and prepare a diverse STEM workforce to advance the frontiers of science and participate in the U.S. technology-based economy. NSF's contribution to the national innovation ecosystem is to provide cutting-edge research under the guidance of the Nation's most creative scientists and engineers. NSF also supports development of a strong science, technology, engineering, and mathematics (STEM) workforce by investing in building the knowledge that informs improvements in STEM teaching and learning.

NSF's mission calls for the broadening of opportunities and expanding participation of groups, institutions, and geographic regions that are underrepresented in STEM disciplines, which is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

A. Merit Review Principles and Criteria

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

1. Merit Review Principles

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

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

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

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

2. Merit Review Criteria

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

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

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

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

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

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

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

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

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: Rationale for and coherence of alliance structure; 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 support; potential to transform undergraduate STEM education; evidence of robust dissemination; potential for adding to the body of knowledge on recruitment and retention of students historically underrepresented in STEM disciplines. **STEM Pathways and Research Alliance 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 Activity Proposals: 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 degree; evidence of institutional support of graduate participants after the two years of NSF funding; evidence of formal connections and meaningful partnerships between STEM graduate programs; rigor of evaluation plan.

B. Review and Selection Process

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

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

After scientific, technical and programmatic review and consideration of appropriate factors, the NSF Program Officer recommends to the cognizant Division Director whether the proposal should be declined or recommended for award. NSF strives to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. Large or particularly complex proposals or proposals from new awardees may require additional review and processing time. The time interval begins on the deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director acts upon the Program Officer's recommendation.

After programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications. After an administrative review has occurred, Grants and Agreements Officers perform the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at their own risk.

Once an award or declination decision has been made, Principal Investigators are provided feedback about their proposals. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers or any reviewer-identifying information, are sent to the Principal Investigator/Project Director by the Program Officer. In addition, the proposer will receive an explanation of the decision to award or decline funding.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See Section VI.B. for additional information on the review process.)

B. Award Conditions

An NSF award consists of: (1) the award notice, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award notice; (4) the applicable award conditions, such as Grant General Conditions (GC-1)*; or Research Terms and Conditions* and (5) any announcement or other NSF issuance that may be incorporated by reference in the award notice. Cooperative agreements also are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC) and the applicable Programmatic Terms and Conditions. NSF awards are electronically signed by an NSF Grants and Agreements Officer and transmitted electronically to the organization via e-mail.

*These documents may be accessed electronically on NSF's Website at https://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-8134 or by e-mail from nsfpubs@nsf.gov.

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

Special Award Conditions:

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

Grantees may be required to submit contingency plans for alternative activities should the current pandemic prevent implementation of proposed on campus activities or travel.

Awardees are required to address the progress of evaluation efforts in annual reporting. A copy of the evaluator's report must be submitted with 3rd year reporting for 5 year projects. Evaluation reports for all funded projects must include progress articulated by proposed goal, objective, or activity. Evaluation reports for all funded projects should also include highlights that capture interesting accomplishments or features of the projects.

For LSAMP Alliance and BD Projects Only: Alliances are required to report enrollment, degree data, and other data annually via the WebAMP reporting systems.

For alliance proposals only: Activities of the Governing Board and other advisory bodies must be addressed in annual and final reporting.

For **BD** awards, 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 activity.

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 projects. These 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 grantee.

Future increments may be deferred or reduced by the level of residual funding remaining during the previous project year.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the Principal Investigator must submit an annual project report to the cognizant Program Officer no later than 90 days prior to the end of the current budget period. (Some programs or awards require submission of more frequent project reports). No later than 120 days following expiration of a grant, the PI also is required to submit a final project report, and a project outcomes report for the general public.

Failure to provide the required annual or final project reports, or the project outcomes report, will delay NSF review and processing of any future funding increments as well as any pending proposals for all identified PIs and co-PIs on a given award. PIs should examine the formats of the required reports in advance to assure availability of required data.

PIs are required to use NSF's electronic project-reporting system, available through Research.gov, for preparation and submission of annual and final project reports. Such reports provide information on accomplishments, project participants (individual and organizational), publications, and other specific products and impacts of the project. Submission of the report via Research.gov constitutes certification by the PI that the contents of the report are accurate and complete. The project outcomes report also must be prepared and submitted using Research.gov. This report serves as a brief summary, prepared specifically for the public, of the nature and outcomes of the project. This report will be posted on the NSF website exactly as it is submitted by the PI.

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

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:

- LSAMP Program Team, telephone: (703) 292-8640, fax: (703) 292-9018, email: LSAMP_national@nsf.gov
- A. James Hicks, Co-Lead/Program Director, telephone: (703) 292-4668, email: ahicks@nsf.gov
- Martha James, Co-Lead/Program Officer, telephone: (703) 292-7772, email: mjames@nsf.gov
- Michelle O. Claville, Program Director, telephone: (703) 292-7751, email: mclavill@nsf.gov
- Sandra Romano, Program Director, telephone:(703) 292-5064, email: sromano@nsf.gov

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

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

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

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

- 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.

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

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The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090 and (800) 281-8749, FIRS at (800) 877-8339.

The National Science Foundation Information Center may be reached at (703) 292-5111.

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- **Location:**   2415 Eisenhower Avenue, Alexandria, VA 22314

- **For General Information**   (703) 292-5111
  (NSF Information Center)**:**

- **TDD (for the hearing-impaired):**   (703) 292-5090

- **To Order Publications or Forms:**

        Send an e-mail to: nsfpubs@nsf.gov

        or telephone: (703) 292-8569

- **To Locate NSF Employees:**   (703) 292-5111

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; and project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to proposer institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies or other entities needing information regarding applicants or nominees as part of a joint application review process, or in order to coordinate programs or policy; and to another Federal agency, court, or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See System of Record Notices, NSF-50, "Principal Investigator/Proposal File and Associated Records," and NSF-51, "Reviewer/Proposal File and Associated Records." Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

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