Louis Stokes Alliances for Minority Participation (LSAMP)

PROGRAM SOLICITATION
NSF 15-594

REPLACES DOCUMENT(S):
NSF 12-564

National Science Foundation

Directorate for Education & Human Resources
Division of Human Resource Development

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

November 04, 2015

Bridge to the Doctorate; Pre-Alliance Planning Grants

November 20, 2015

LSAMP Alliance Proposals (including Bridge to the Baccalaureate)

October 14, 2016

Bridge to the Doctorate; Pre-Alliance Planning Grants

November 04, 2016

LSAMP Alliance Proposals (including Bridge to the Baccalaureate)

IMPORTANT INFORMATION AND REVISION NOTES

Changes in the LSAMP program solicitation for FY 2016 and FY 2017 include:

1. This solicitation provides detailed guidance on required components of the Project Description.
2. **Alliance Proposals.** Alliances composed of different institutional types are no longer classified as "new", "mid-level", or "senior". Budget conditions based on the number of underrepresented students produced with STEM Baccalaureate degrees have been removed.
3. **Alliances funded more than 10 years**. Beginning FY2016, well-established and long-running alliances seeking continued funding are required to include an education/social science research study that investigates any of the effective practices or innovations related to the proposed strategies for recruiting, retaining, and graduating students from racial and ethnic underrepresented groups in STEM.
4. **Bridge to the Baccalaureate (B2B) Alliances**. The lead institution of a B2B alliance is still required to be a community college or two-year institution. New in FY2016 is the option to include other institutional types in B2B alliances, though the majority of the institutions must still be community colleges. Budget conditions based on the number of underrepresented students who transfer to 4-year STEM degree programs have been removed.
5. **Bridge to the Doctorate (BD).** Beginning FY2016, funding for BD awards has increased to $1,075,000, which includes an increase in the BD fellowship amount to $32,000 for each of the 12 BD participants.
6. **Pre-alliance Planning Grants.** In this solicitation is a description of a new funding opportunity that supports the planning necessary for developing the partnerships and activities required to form new alliances or regional outreach and knowledge-diffusion centers of excellence.
7. **Webinar.** The LSAMP Program team will host webinars within a month after the release of this solicitation. In the webinar, changes in the solicitation will be discussed as well as expectations for the LSAMP program and different award types. Visit the LSAMP website for webinar dates: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13646.

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised NSF Proposal & Award Policies & Procedures Guide (PAPPG) (NSF 15-1), which is effective for proposals submitted, or due, on or after December 26, 2014. The PAPPG is consistent with, and, implements the new Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance) (2 CFR § 200).

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Louis Stokes Alliances for Minority Participation

Synopsis of Program:

Louis Stokes Alliances for Minority Participation (LSAMP) program assists universities and colleges in their efforts to significantly increase the numbers of students matriculating into and successfully completing high quality degree programs in science, technology, engineering and mathematics (STEM) disciplines in order to diversify the STEM workforce. 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: African Americans, Hispanic Americans, American Indians, Alaska Natives, Native Hawaiians, and Native Pacific Islanders.

The LSAMP program provides funding to alliances that implement comprehensive, evidence-based, innovative, and sustained strategies that ultimately result in the graduation of well-prepared, highly-qualified students from underrepresented groups who pursue graduate studies or careers in STEM.

There are four alliance award types:

1. **Alliances(Multi-institutional Partnerships):** 5-year projects focused on undergraduate recruitment and retention activities.

2. **Bridge to the Baccalaureate (B2B) Alliances (Alliances with a community college as lead institution):** 3-year projects focused on activities that provide effective educational preparation of community college students for successful transfer to 4-year institutions in STEM.

3. **Bridge to the Doctorate (BD) Activity:** 2-year projects eligible only to existing alliances funded more than 10 consecutive years; these projects are focused on providing post-baccalaureate fellowship support to a cohort of 12 LSAMP students for the first two years of their STEM graduate studies and on providing the necessary academic and research skills that will enable them to successfully earn STEM doctoral degrees and transition into the professoriate and/or STEM workforce.

4. **Pre-Alliance Planning Grants:** Up to 18-month projects that undertake planning activities necessary to form new alliances or regional outreach and knowledge-diffusion centers of excellence.

In this solicitation, the acronym STEM stands for science, technology, engineering, and mathematics that includes biological sciences (except medicine and other clinical fields); physical sciences (including physics, chemistry, astronomy, and materials science); mathematical sciences (including statistics and data science); computer and information sciences; geosciences (including earth and ocean sciences); engineering; and technology areas associated with the preceding disciplines (for example, biotechnology, chemical technology, nanotechnology, engineering technology, information technology).

Important Notes on LSAMP Alliance Projects

The NSF LSAMP Program allows grantees to provide performance-based stipend support to undergraduate students. However, LSAMP is not a student financial aid scholarship program, and thus funds should NOT be used to award scholarships to students.

The LSAMP Program does NOT make awards directly to individual students to undertake their education or research activities. Students are encouraged to contact the respective institutions to inquire about whether there are LSAMP programs (including Bridge to the Doctorate) on their campuses.

All students receiving stipends/fellowships must be U.S. citizens, U.S. nationals, or permanent residents of the United States.

Institutional partners (including community colleges) in all LSAMP Alliances (including B2B) must be budgeted as sub-awardees unless designated as a lead institution in an alliance. Please contact a LSAMP Team member if your institution does not enter into subaward agreements.

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, Program Director and Co-Lead, 815 N, telephone: (703) 292-4668, email: ahicks@nsf.gov
- Tasha R. Inniss, Program Director and Co-Lead, 815 N, telephone: (703) 292-4684, email: tinniss@nsf.gov
- Martha L. James, Program Director, 815 N, telephone: (703) 292-7772, email: mjames@nsf.gov
- Maurice Dues, Program Specialist, 815 N, telephone: (703) 292-7311, email: mdues@nsf.gov

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: 37 to 38

37 in FY2016 and 38 in FY2017; The anticipated number of new awards to be made across fiscal years 2016 and 2017 is 75.

Award sizes and durations vary for the different LSAMP award types.

The estimated number of awards by type is as follows:

Alliances. 19 alliance grants in FY2016 and 18 in FY2017.

Awards for alliances will be made as Continuing Grants. The progress and plans of each alliance will be reviewed annually by NSF, prior to approving continued NSF support. Alliances that are not meeting the expectations set forth in this solicitation may have their level of funding reduced or may be terminated.

Bridge to the Doctorate. 10 BD grants in FY2016 and 10 in FY2017.

Pre-Alliance Planning Grants. 8 planning grants in FY2016 and 10 in FY2017.

Anticipated Funding Amount: $45,600,000

Annually for new **and** continuing awards

Approximately $32 million, pending availability of funds, for new awards in FY2016 to support Alliances (including Bridge to the Baccalaureate), Bridge to the Doctorate, Pre-Alliance Planning grants, and other funding opportunities.

Eligibility Information

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Universities and Colleges - Universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in, the US acting on behalf of their faculty members. Such organizations also are referred to as academic institutions.

Who May Serve as PI:

The Principal Investigator (PI) for **Alliances (including B2B)** should be the President, Chancellor, or Provost of the lead institution. A full justification is needed for a PI designation in variance with this requirement. Co-principal investigators (Co-PIs) from partner institutions may be designated, as appropriate, for the project. At least one of the Co-PIs must have expertise in social science or education research for proposals from alliances funded more than 10 years.

The Principal Investigator for a **Bridge to the Doctorate** activity should be on the leadership team at the lead institution and listed as one of the Co-PIs of the alliance. One or more of the listed Co-PIs must be from the host institution (site of the BD activity).

The Principal Investigator for a **Pre-Alliance Planning** grant should be the key personnel that will be responsible for organizing and implementing the planning activities.

Limit on Number of Proposals per Organization:

Alliances (including B2B): Only one proposal may be submitted by an eligible (lead) institution. Alliances may hold only one active award at a time, not including BD awards. Institutions partnering in an alliance may not be a formal partner in more than one alliance at the same time. See Section II (Program Description 1. Alliances, Special Conditions for Alliances funded more than 10 years) for an exception.

Bridge to the Doctorate (BD): Only one proposal for BD support may be submitted by an eligible lead institution of an alliance. See Section II, Program Description 2. Bridge to the Doctorate, for eligibility criteria.

Pre-Alliance Planning: Only one proposal may be submitted by an eligible institution.

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

Alliances (including B2B) and **Pre-Alliance Planning:** 1

Bridge to the Doctorate (BD): 1

Exception: Alliances funded more than 10 years are allowed to submit an alliance proposal as well as a BD proposal.

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, Part I: Grant Proposal Guide (GPG) Guidelines apply. The complete text of the GPG is available electronically on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg.
  - 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: http://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. proposer's local time):

  November 04, 2015

  Bridge to the Doctorate; Pre-Alliance Planning Grants

  November 20, 2015

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Proposal Review Information Criteria

Merit Review Criteria: National Science Board approved criteria. Additional merit review considerations 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), which is in the Directorate for Education and Human Resources (EHR) at the National Science Foundation (NSF). LSAMP was authorized by Congress and established in 1991 to significantly increase the quality and quantity of students historically

underrepresented in STEM who successfully complete baccalaureate degrees and who continue on to graduate studies in STEM disciplines. In the NSF 2014-2018 Strategic Plan (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf14043, under Strategic Objective 2, the NSF is encouraged to "integrate education and research to support the development of a diverse STEM workforce with cutting-edge capabilities." The LSAMP program is committed to supporting activities that can develop, through evidenced-based integration of education and research, highly competitive STEM students from historically underrepresented racial and ethnic groups – African Americans, Hispanic Americans, American Indians, Alaska Natives, Native Hawaiians and Native Pacific Islanders - from pre-college through post-baccalaureate levels at our nation's colleges and universities.

The LSAMP Program priorities are to (a) increase individual student retention and progression to baccalaureate degrees for underrepresented racial and ethnic groups, (b) enable successful transfer of underrepresented students from 2-year to 4-year institutions in STEM programs (c) increase access to high quality undergraduate research experiences, and (d) facilitate seamless transition of underrepresented students into STEM graduate programs. For FY2016 and FY2017, the program encourages submissions of projects that implement, as part of their proposed activities, innovative interventions that fortify students' mathematical knowledge and increase success during the first two years of STEM undergraduate studies, as recommended in several reports.[1] [2]

The LSAMP program goals and priorities of increasing the number of students from underrepresented racial and ethnic groups who earn STEM degrees, particularly STEM undergraduate degrees, and enhancing the STEM educational experience for these students are aligned with recommendations and strategies presented in the PCAST Report[3] and in reports from the National Academy of Sciences[4] [5].

II. PROGRAM DESCRIPTION

The LSAMP program supports comprehensive, evidence-based, and sustained approaches to broadening participation of students from racial and ethnic groups historically underrepresented in STEM (African Americans, Hispanic Americans, American Indians, Alaska Natives, Native Hawaiians, and Native Pacific Islanders) primarily at the undergraduate level. These approaches facilitate the production of well-prepared students highly-qualified and motivated to pursue graduate education or careers in STEM. Support is available for Alliances (including Bridge to the Baccalaureate), Bridge to the Doctorate grants, Pre-Alliance Planning grants, and other funding opportunities.

I. ALLIANCES

1. Alliances of different institutional types are funded up to five years to implement comprehensive evidence-based strategies that ultimately result in the graduation of well-prepared, highly-qualified students from underrepresented groups who pursue graduate studies or careers in STEM.

Alliance Structure: Alliances can have partner institutions drawn from among 4-year institutions, community colleges, school systems, Federal/state/local government agencies, major national laboratories and centers, industry, private foundations, and professional STEM organizations, as necessary to achieve the LSAMP goals and objectives. Competitive proposals are from alliances that are composed of many different institutional types that include research-intensive universities, comprehensive universities, liberal arts colleges, minority-serving institutions, and community colleges. All alliance proposals, though, must provide a rationale for the inclusion of the different organizational partners and for the alliance 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. Examples include, but are not limited to: a research-intensive institution in an alliance may provide summer research opportunities to students at other institutions in the alliance, including community colleges; Liberal arts colleges in an alliance that focus on teaching could provide workshops on pedagogy to faculty from research-intensive institutions in the alliance; national laboratories or major research centers in an alliance could serve as a Research Experiences for Undergraduates (REU) site for alliance students; alliance institutions that have faculty with international research collaborations could facilitate global research experiences for students in the alliance. Alliances may choose to focus on a theme or address a particular grand challenge in undergraduate STEM education. A cohesive structure to the alliance must be apparent. Institutions partnering in an alliance may not be a formal partner in more than one alliance at the same time. Exceptions to this are described in a following section entitled Special Conditions for Alliances Funded More than 10 years.

Expectations of Alliances: The NSF LSAMP Program provides wide latitude to proposers in designing their alliance activities. The design should be grounded in evidenced-based practices and sound programmatic approaches that are clear and well-defined. In the proposal, a review of the literature that serves as a basis for the proposed activities must be presented. All new applicants must commit to a significant (percentage) increase in baccalaureate production of underrepresented students in STEM fields within a five-year award period and justify the level of increase they define as significant. A clear plan of action to significantly increase baccalaureate STEM degrees awarded to students historically underrepresented in STEM at individual 4-year institutions is essential for a competitive proposal. Subsequent support will be contingent on evidence of success in areas of individual student recruitment, retention, and progression to STEM baccalaureate degrees. Requests for continued funding should address how proposed innovative and enhanced strategies are based on evaluation results of previous awards.

Proposed alliance activities must form a feasible, logical, and comprehensive effort focused on improving undergraduate STEM educational experiences for underrepresented students. Alliance proposals are required to describe in detail the comprehensive plan that will be implemented both alliance-wide and at the individual institutions. The 2006 evaluation report[6] by the Urban Institute references the research and theoretical basis of the LSAMP program and describes the elements of the "LSAMP model". Proposed activities may be drawn from the elements of the LSAMP model, which include undergraduate research experiences both domestic and abroad, (math) summer bridge programs, academic and career advising, professional development activities, graduate school admissions support, skills-building seminars, or tutoring/supplemental instruction. Alliance projects must place emphasis on implementing strategies to: (a) increase individual student retention and progression to STEM baccalaureate degrees, (b) enable successful transfer of underrepresented students from 2-year to 4-year institutions in STEM programs (c) increase access to high quality undergraduate research experiences, and (d) facilitate seamless transition of underrepresented students into STEM graduate degree programs.

Research has shown the value of undergraduate research experiences and their impact on the persistence of students in STEM.[7] 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 undergraduate research experiences, including international research opportunities. International opportunities must reach beyond

conference attendance and cultural experiences to be considered a strong aspect of an alliance proposal.

All alliance proposals should include plans for institutionalization and program sustainability beyond NSF funding. Expectations are placed on institutionalizing, disseminating, and promoting the replication of strategies and collaborative approaches that have shown to be effective in the recruitment and retention of students historically underrepresented in STEM as well as the successful transition of undergraduate STEM students into graduate STEM programs. Mature alliances (alliances in existence more than 10 years) must describe the components that have been institutionalized. Proposals must indicate past institutional successes (e.g., efforts at transforming the academic and/or research environment) in producing highly competitive students from underrepresented racial and ethnic groups in STEM disciplines.

Competitive proposals will describe the level 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 in the alliance and outside of the alliance. Evidence of linkages must be provided through letters of collaboration.

Proposers are encouraged to collaborate with institutions with active awards from programs in NSF's Division of Undergraduate Education (DUE), specifically Improving Undergraduate STEM Education (IUSE), NSF Scholarships in Science, Technology, Engineering and Mathematics (S-STEM), or Advanced Technological Education (ATE). 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 http://www.nsf.gov/div/index.jsp?org=DUE.

SPECIAL CONDITIONS FOR ALLIANCES FUNDED MORE THAN 10 YEARS

Well-established alliances that have been funded for more than 10 years are expected to be particularly effective in increasing the numbers of students from underrepresented racial and ethnic groups who are successful in earning STEM baccalaureate degrees. In the aggregate, these well-established alliances should serve as a national resource since many of their effective practices have resulted in measurable impact in the STEM enterprise.

- *Knowledge Generating Research Project*

  In addition to the aforementioned alliance expectations, alliances funded more than 10 years are required to include a knowledge-generating research study that rigorously investigates effective practices or innovations related to the proposed alliance strategies for recruiting, retaining, and graduating students historically underrepresented in STEM. The results of such studies should contribute to the knowledge base and facilitate a broader dissemination of successful practices. The Project Descriptions in proposals from alliances funded more than 10 years are allowed to exceed the 15-page limit. The Project Description should be no more than 20 pages, five of which should be used to provide a detailed description of the required research study, and included at the end of the 15 pages that describe the proposed alliance activities. The research project must clearly state the research question(s) and/or testable hypotheses to be investigated; the conceptual/theoretical framework for the project; and the research methodology that will be employed, including plans for collecting and analyzing project data. Quantitative research should include statistical methods to be used. Qualitative studies should include procedures to collect, code, reduce, and analyze data. The document should also list the name(s) of the researcher(s) or team member(s) who will conduct the research study and describe their expertise and relevant qualifications. CV(s) for the researchers should be included as supplementary documents.

  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. These guidelines describe six types of research studies. 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 (NSF 13-126) can be found on the NSF website: (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf13126). For FAQs regarding the Guidelines (NSF 13-127), see http://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 proposals to NSF.

- *Institutionalization and Sustainability*

  Proposals from well-established alliances must address the institutionalization and sustainability of previous LSAMP-supported activities by stating 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. Requests for continued funding should address how proposed innovative and enhanced strategies are based on evaluation results of previous awards.

- *Reconstitution of Alliances*

  Highly competitive proposals from well-established long-running alliances must demonstrate creative thinking, employ innovative strategies, and enhance partnerships to maximize opportunities for preparing students for 21st Century STEM careers and addressing current challenges in diversifying the STEM workforce. Alliances funded more than 10 years are encouraged to consider reconstitution of their alliances. Reconstituted alliances could choose to focus on a particular theme or grand challenge in undergraduate STEM education. Well-established alliances should also consider partnering with other long-running alliances to develop regional outreach and knowledge-diffusion centers of excellence.

  Based on lessons learned and experiences in successful alliances, institutions in long-running alliances are strongly encouraged to form new alliances with new and different organizational partners, serving as the lead institution. Well-established alliances are also encouraged to collaborate with newly formed B2B alliances in their region.

Exception to being a formal partner in no more than one alliance: A small number of institutions who choose to form new alliances (including B2B alliances) will be allowed to maintain a partnership in their current alliance until that grant expires, but should make clear in the proposal the distinction between alliance activities and supported students for the two alliances. Proposals will not be funded where there is duplication of activities or student support.

Other Important Notes: Awards for alliances will be made as Continuing Grants. The progress and plans of each alliance will be reviewed annually by NSF, prior to approving continued NSF support. Alliances that are not meeting the expectations set forth in this solicitation may have their level of funding reduced or may be terminated.

2. Bridge to the Baccalaureate (B2B) Alliances

Bridge to the Baccalaureate (B2B) Alliances are partnerships of primarily community colleges funded to develop comprehensive

programs that facilitate the successful transfer of students historically underrepresented in STEM to 4-year institutions in pursuit of STEM baccalaureate degrees.

B2B Alliance Structure: The lead institution of a B2B alliance is required to be a community college. For this solicitation a community college is the same as a two-year institution, a junior college, or a technical college. New in FY2016 is the option to include other institutional types in B2B alliances, though the majority of the institutions must still be community colleges. All alliance proposals must provide a rationale for the inclusion of the different institutional partners. 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. Two-year institutions focused on associate-level technical workforce development are not eligible to be a partner in an alliance unless they can demonstrate a clear academic pathway of students into 4-year STEM degree programs, the primary intent of the LSAMP program. Institutions partnering in an alliance may not be a formal partner in more than one LSAMP alliance at the same time except as described in Section II (Program Description 1. Alliances, Special Conditions for Alliances funded more than 10 years).

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 4-year STEM degree programs are supported through these alliances. Proposers for B2B support must present evidence of strong articulation and transfer agreements with 4-year institutions. All new proposals 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 is essential for a 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.

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. The 2012 PCAST report states that "the first two years of college are the most critical to retention and recruitment of STEM majors. The STEM courses in these years are also a shared feature of all types of 2- and 4-year colleges and universities – community colleges, comprehensive universities, liberal arts colleges, research universities, and minority-serving institutions."[8] In 2010, the Carnegie Foundation for the Advancement of Teaching initiated “pathways improvement communities', which include the "Community College Pathways" network (http://www.carnegiefoundation.org/in-action/pathways-improvement-communities/) that has developed strategies for accelerating students" progress towards college-level mathematics. Highly competitive B2B proposals should describe strategies to fortify the mathematical foundations of community college students in their first two years.

The LSAMP B2B funding opportunity supports activities such as: employing team and cohort building principles (e.g. mentoring, learning communities, social integration activities); student academic support (e.g. supplemental instruction, peer-led team learning); undergraduate research activities (e.g. research methods, hands-on experimentation); professional development and career support (e.g. conference attendance and presentation, participation in seminars and colloquia) or any other activities designed to enhance student retention in STEM and successful transfer to STEM baccalaureate-degree programs.

The following references may be of interest to proposers forming B2B alliances:

- Andrade, M.S. (2007). Learning Communities: Examining positive outcomes. Journal of College Student Retention, 9(1), 1-20.
- Gosser, D. K. (2011). Progressions. Journal of Peer-led Team Learning, 14(1).
- Lumina Foundation. (2011). Four Steps to Finishing First in Higher Education. Indianapolis, IN. http://www.luminafoundation.org/resources/four-steps-to-finishing-first
- Seymour, E., & Hewitt, N. M. (2000). Talking About Leaving: Why Undergraduates Leave the Sciences. Boulder: Westview Press.
- Shapiro, N. S., & Levine, J. H. (1999). Creating Learning Communities: A Practical Guide to Winning Support, Organizing for Change, and Implementing Programs. San Francisco: Jossey-Bass.
- Ullman, E. (2011). Colleges boost completion rates through improved transfer programs, Community College Journal, 38-42. http://www.mediabistro.com/portfolios/samples_files/94235_7r3hlRvKGuudtnJQeGkotk4rr.pdf
- Whalen, D. F., & Shelley, M. C. II. (2010). Academic Success for STEM and Non-STEM Majors. Journal of STEM Education, 11(1): 45-60.

All proposal requests for funding must describe plans for tracking student progress over the course of funding. Because the LSAMP program is focused on baccalaureate degree attainment, B2B projects must track the number of community college students who successfully transfer into 4-year STEM programs. It is expected that institutions in B2B alliances have strong articulation agreements with 4-year institutions. B2B alliances are strongly encouraged to seek collaborations with active alliances in their region that include 4-year institutions. Letters of collaboration with partner academic institutions or other entities must be included as supplementary documents.

3. Bridge to the Doctorate (BD) Activities

Bridge to the Doctorate (BD) is a funding option for alliances that have been in existence more than 10 consecutive years. ONLY alliances with 10 or more years of funding are eligible for the BD activity. BD participants that are selected are funded for the first two years of their graduate studies in STEM.

Expectations of BD: The ultimate goal of the LSAMP BD activity is to prepare students targeted from racial and ethnic underrepresented groups to persist and complete STEM doctoral degree programs. BD sites must provide participants the necessary academic and research skills that will enable them to successfully earn STEM doctoral degrees.

BD sites are required to recruit a cohort of twelve certified LSAMP students (active participants in LSAMP activities as undergraduate students) who have earned their STEM baccalaureate degrees. The majority of the BD cohort should not have already earned a STEM Master’s degree. 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 graduate students. In the proposal, a review of the literature that serves as a basis for the proposed activities must be presented. The recruitment plans and selection process of BD participants must also be clearly articulated in the proposal. In addition, proposers should indicate how graduate students will be paired with research mentors and describe any training that would be provided to the research mentors and BD participants. Competitive proposals will include a listing of the faculty who have agreed to serve as research mentors and their expertise. Recruitment of BD participants is expected from all STEM disciplines.

Proposers are required to provide documentation of past performance at the designated graduate institution host site for retaining, training, graduating and placing significant numbers of LSAMP graduates into STEM doctoral-degree programs. Competitive BD

proposals will outline how a substantive number of BD participants will be prepared and required to apply to NSF's Graduate Research Fellowship Program (GRFP). BD awardees are expected to place an emphasis on designing structured student support strategies that will enable students to develop competitive applications for the GRF, other competitive fellowships, and admission into STEM doctoral programs. Such strategies may include developing an alliance-wide common BD application that is aligned with the GRF application; assisting BD participants in developing competitive portfolios that include publications; or designating an LSAMP Fellowship/Graduate School Coordinator. For more information on NSF's graduate fellowship and traineeship funding opportunities (GRFP, NSF Research Traineeship or NRT, CyberCorps (R): Scholarship for Service or SFS) visit the webpage for the Division of Graduate Education: http://www.nsf.gov/div/index.jsp?org=DGE.

BD proposals should also include an action plan that describes the level and type of institutional resources and support that will be available for supporting the BD participants in years three and beyond towards doctorate degrees after the two years of NSF funding. This information should be included in the Facilities, Equipment and Other Resources section of the proposal. BD sites 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), which could provide continued support for graduate students. BD institutional sites are required to track their BD participants that are admitted into and complete STEM doctoral degree programs and then enter the STEM workforce, including the professoriate. A rigorous project or program evaluation plan is expected for all BD proposals.

All students receiving BD fellowships must be U.S. citizens, U.S. nationals, or permanent residents of the United States.

BD Budget Guidelines: The maximum request per eligible alliance for BD support is $1,075,000. All support costs for BD participants should be listed as "Participant Support" in the proposal budget.

- Graduate student stipends are required to be 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 may be requested for activities in other cost categories (e.g., evaluation, senior personnel salaries, wages and fringe benefits, travel, materials and supplies, and applicable indirect costs) that contribute to the effectiveness of the BD activity; any such costs must be listed under the appropriate NSF budget categories and must be explained in the Budget Justification.
- Salary support for administrative personnel is not allowed under this funding opportunity.

4. Pre-Alliance Planning Grants

LSAMP will accept proposals for "Pre-Alliance Planning" grants. To form new alliances (including B2B alliances), pre-alliance planning grants should be used to establish the partnerships, seek commitment from institutional leaders and STEM faculty, create a vision and/or theme for the alliance, and develop comprehensive plans for alliance activities, that will lead to the submission of an alliance proposal. To this end, potential partner institutions may want to conduct needs' assessments, an analysis of institutional/regional preparedness, or consult members of currently funded successful alliances. Institutions whose alliance proposals have been declined are encouraged to apply for a planning grant. Two-year Hispanic-Serving Institutions are also especially encouraged to apply.

To begin planning regional outreach and knowledge-diffusion centers of excellence, well-established alliances or institutions in long-running alliances may use the planning grant to convene a series of meetings to discuss regional needs, strategies for outreach to non-LSAMP institutions, approaches for becoming a national resource, and ideas for developing a proposal for a regional center of excellence. Examples of expected deliverables include, but are not limited to: evidence of strong partnerships leading to a regional center of excellence, results of a comprehensive evaluation, or a white paper with the results of a regional needs' assessment and proposed action plan.

Prospective PIs are advised to contact an LSAMP program officer to discuss ideas for the pre-alliance planning grant prior to submission.

II. OTHER FUNDING OPPORTUNITIES

LSAMP also funds Proposals for Conferences, Early-concept Grants for Exploratory Research (EAGER) and Grant Supplements for existing awards. Such proposals may be submitted, as described in the Grant Proposal Guide (GPG), http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg.

Proposals for conferences/workshops may be submitted 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/workshop, and how these outcomes serve the goals of the LSAMP program. Budgets for conference proposals 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 $150,000 per event. STEM-related professional societies, STEM-related not-for-profit organizations, or institutions in well-established alliances interested in organizing technical assistance workshops are encouraged to apply. The LSAMP program is particularly interested in workshops that bring together experts in STEM Education and Broadening Participation research to discuss emerging trends/practices and how they could be used to address current issues and needs. Prospective PIs are advised to contact an LSAMP program officer to discuss ideas for the conference/workshop prior to submission.

LSAMP seeks to catalyze knowledge-building through research that informs the development of interventions to impact learning, persistence, and success of students from underrepresented racial and ethnic groups in STEM. Therefore, **EAGER proposals** may be submitted to address the LSAMP Program's interest in building knowledge in areas that include, but are not limited to, the following questions:

- 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 alliances and other institutions that serve students from 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?

The Directorate for Education and Human Resources (EHR) has a directorate-wide funding opportunity for conducting fundamental research in STEM education, EHR Core Research (ECR). Institutions interested in conducting foundational broadening participation research should consider submitting to ECR. For more information on ECR, see: http://www.nsf.gov/funding/pgm_summ.jsp?

pims_id=504924.

EAGER proposals submitted to LSAMP could be used to increase capacity at alliance institutions to conduct educational/social science research or as a foundation for the development of ECR proposals. Prospective PIs interested in submitting an EAGER proposal must contact an LSAMP program officer prior to submission to discuss ideas. PIs must adhere to the guidelines provided in the Grant Proposal Guide (NSF 15-1).

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8. President's Council of Advisors on Science and Technology (2012) Engage to Excel: Producing One Million Additional College Graduates with Degrees in Science, Technology, Engineering, and Mathematics, https://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast-engage-to-excel-final_feb.pdf

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 **new and continuing** awards.

Anticipated number, duration, and size of new LSAMP awards:

Alliances (of different institutional types)

- Number of awards: 16 estimated in FY2016 and 15 in FY2017
- Award size: Up to $1,000,000 per year
- Project Length: Up to five years

Bridge to the Baccalaureate Alliances

- Number of awards: 3 estimated in FY2016 and 3 in FY2017
- Award size: Up to $500,000 per year
- Project Length: Up to three years

Bridge to the Doctorate

- Number of awards: 10 estimated in FY2016 and 10 in FY2017
- Award size: Up to $1,075,000 (Per student: $32,000 stipend, $12,000 cost-of-education)
- Project Length: Two years

Pre-Alliance Planning Grants

- Number of awards: 8 estimated in FY2016 and 10 in FY2017
- Award size: Up to $125,000
- Project Length: Up to 18 months

IV. ELIGIBILITY INFORMATION

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Universities and Colleges - Universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in, the US acting on behalf of their faculty members. Such organizations also are referred to as academic institutions.

Who May Serve as PI:

The Principal Investigator (PI) for **Alliances (including B2B)** should be the President, Chancellor, or Provost of the lead institution. A full justification is needed for a PI designation in variance with this requirement. Co-principal investigators (Co-PIs) from partner institutions may be designated, as appropriate, for the project. At least one of the Co-PIs must have expertise in social science or education research for proposals from alliances funded more than 10 years.

The Principal Investigator for a **Bridge to the Doctorate** activity should be on the leadership team at the lead institution and listed as one of the Co-PIs of the alliance. One or more of the listed Co-PIs must be from the host institution (site of the BD activity).

The Principal Investigator for a **Pre-Alliance Planning** grant should be the key personnel that will be responsible for organizing and implementing the planning activities.

Limit on Number of Proposals per Organization:

Alliances (including B2B): Only one proposal may be submitted by an eligible (lead) institution. Alliances may hold only one active award at a time, not including BD awards. Institutions partnering in an alliance may not be a formal partner in more than one alliance at the same time. See Section II (Program Description 1. Alliances, Special Conditions for Alliances funded more than 10 years) for an exception.

Bridge to the Doctorate (BD): Only one proposal for BD support may be submitted by an eligible lead institution of an alliance. See Section II, Program Description 2. Bridge to the Doctorate, for eligibility criteria.

Pre-Alliance Planning: Only one proposal may be submitted by an eligible institution.

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

Alliances (including B2B) and **Pre-Alliance Planning:** 1

Bridge to the Doctorate (BD): 1

Exception: Alliances funded more than 10 years are allowed to submit an alliance proposal as well as a BD proposal.

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 Grants.gov or via the NSF FastLane system.

- 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 Grant Proposal Guide (GPG). The complete text of the GPG is available electronically on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov. Proposers are reminded to identify this program solicitation number in the program solicitation block on the NSF Cover Sheet For Proposal to the National Science Foundation. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

- Full proposals submitted via Grants.gov: Proposals submitted in response to this program solicitation via Grants.gov should be prepared and submitted in accordance with the NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov. The complete text of the NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: (http://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) 292-7827 or by e-mail from nsfpubs@nsf.gov.

See Chapter II.C.2 of the GPG 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 GPG instructions.

The following information provides instructions that supplement the Grant Proposal Guide 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)

The TITLE should be prefaced with the type of LSAMP Activity being proposed:

- Alliance proposals (NOT including Bridge to the Baccalaureate):
  - Please begin the project title with the name of the alliance (e.g. State X LSAMP)
- Bridge to the Baccalaureate Alliance proposals:
  - Please begin the project title with " Bridge to the Baccalaureate:"
- Bridge to the Doctorate proposals:
  - Please begin the project title with " Bridge to the Doctorate:"
- Pre-Alliance Planning proposals:
  - Please begin the project title with "Pre-Alliance Planning:"

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 http://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

PROJECT SUMMARY: This should be a one-page document consisting of an overview, a statement on the intellectual merit of the proposed activity, and a statement on the broader impacts of the proposed activity.

- Overview: The overview should include the proposed activities, goals and objectives;
- Additionally, list all partner institutions (if submitting an alliance proposal) that will be involved in the project and the number of years funded, if applicable.
- Intellectual Merit: The statement on intellectual merit should describe the potential of the proposed activity to advance knowledge
- Broader Impacts: The statement on broader impacts should describe the potential of the proposed activity to benefit society and contribute to the achievement of specific, desired societal outcomes.

The Project Summary should be written in the third person, informative to other persons working in the same or related fields, and, insofar as possible, understandable to a scientifically or technically literate lay reader. It should NOT be an abstract of the proposal. Proposals that do not contain the Project Summary, including an overview and separate statements on intellectual merit and broader impacts will NOT be accepted by FastLane or will be returned without review.

SUPPLEMENTARY DOCUMENTS: The Grant Proposal Guide 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 for the Evaluation Plan (see section on Project Evaluation); and Data Tables (described below). *Note: Biosketches for all senior personnel are required to be uploaded in a different section.*

- **Letters of Collaboration** are required from each partner institution. Signed letters should indicate collaborative arrangements and planned contributions of significance to the project. Do not send paper copies to NSF.
- **Letters of Collaboration** are required from key senior administrators and STEM leadership. Signed letters 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 are not allowed. Do not send paper copies to NSF.
- **Required Data Tables** must include institutional baseline data for each STEM discipline: enrollment, transfer, graduation, matriculation into and completion of undergraduate and graduate programs for the targeted groups of students underrepresented in STEM.

Note: A proposal will be returned without review if unallowable documents are included.

DETAILED GUIDELINES FOR WRITING PROJECT DESCRIPTIONS

Project Descriptions in all LSAMP proposals must include the following, as appropriate:

Background and Context

- Describe the overall goal of the project. The goal must be clearly stated and achievable within the proposed time frame.
- Include a summary of the baseline data that provides context for the impact of the project.
- Describe the expected benefits of achieving the goals of increasing the quantity of underrepresented students earning STEM degrees and of enhancing the STEM educational experience.

Alliance Structure (if applicable): A listing of partner institutions should be included on the first page of the Project Description (as also is required for the Project Summary). The logic of the proposed alliance and the roles/contributions of each partner must be clearly described in the proposal. It is expected that all partner institutions have substantial roles in the planning and implementation of the activities under the grant, including management and evaluation. Alliance partnerships must already be established at the time of submitting the proposal. An alliance that has previously received LSAMP funding as an alliance should state the number of years it has been in existence.

Proposed Activities, Goals, and Measurable Objectives (Alliance and BD proposals): Describe the goals and objectives of the project and link these to the proposed activities including references to the relevant research supporting the proposed activities and strategies. Activities should be described in enough detail that NSF and peer reviewers can evaluate the quality of the proposed strategies. The proposal should describe how the alliance will define and track active "LSAMP" student participants as well as other beneficiaries of the project.

Proposed Research Activities (Proposals from Alliances funded more than 10 years):

- Describe the research question(s) to be investigated and explain the significance and importance of answering the proposed research question(s). Provide a review of the research literature and discuss the theoretical framework that motivates the question(s).
- Describe the research plan (design, data collection, data analysis, etc.) that will be undertaken to answer the research question(s).
- Explain how the project will contribute to the knowledge base of broadening participation research and how it has the potential to be replicated in other alliances or at other institutions seeking to increase the success of underrepresented students in STEM.

Results of Prior NSF Support, if applicable: Alliances who have received five or more years of LSAMP funding are required to describe their progress and success rate in producing well-prepared graduates from underrepresented racial and ethnic groups in

STEM disciplines. In addition, a summary of the results of all relevant grants for the PI and co-PIs should be included.

Institutional Support and Sustainability Plan (Alliance proposals only):

- Provide evidence of institutional support from the senior administrators, STEM leadership and faculty to the implementation of the proposed project activities, as applicable. Letters of collaboration are allowed to be included as supplementary documents.
- Describe plans for sustainability or institutionalization of any project components. Alliances are expected to include sustainability plans for alliance continuity without NSF funding.
- Proposals from alliances funded more than 10 years are required to specifically describe components that have been institutionalized from previous funding cycles and delineate the new activities that will be implemented based on lessons learned and recommendations from project evaluations.

Dissemination and Outreach Plans: Describe plans to communicate the results and outcomes of the project to other professionals in STEM education and research, both during and after the project period. Describe the information (quantitative and/or qualitative) to be disseminated, the means of dissemination, and the procedures for determining the success of the dissemination effort. Alliances that have been funded more than 10 years are strongly encouraged to serve as mentors to institutions forming new alliances or as advisors to members of recently-funded alliances.

Project Management Plan:

- State the names of the project management/leadership team members and their qualifications.
- Define the roles and responsibilities of key personnel who will carry out the project activities, including budget management, data management, and reporting.

Successful program management practices include, but are not limited to devoting careful attention to management and administrative collaboration among institutional partners to ensure a productive partnership and long-term continuation of LSAMP or similar activities beyond the term of NSF financial support.

Project Evaluation or External Review Plan: Rigorous evaluation of projects is a high priority for the LSAMP Program. Therefore, all LSAMP proposals should develop 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 (which may be included as a supplementary document) or other tool that connects the project goals to the specific activities, and outputs, as well as the outcomes. The plan should include both a strategy for monitoring the project as it evolves to provide feedback that allows for continuous improvement of the project activities (formative evaluation) and a strategy for evaluating the effectiveness of the project in achieving its goals and for identifying positive and constructive findings when the project is completed (summative evaluation).

Project evaluations for LSAMP alliances are expected to be more rigorous due to the complex structure of alliances. The evaluation plan 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 groups) and qualitative (the process of change in organizational culture, impact and progress in developing highly competitive, well-prepared STEM students). Formative and summative evaluations should include holistic assessments of the collaboration/partnership in addition to evaluation of the individual interventions.

The evaluator should be someone external to the project and named in the Project Description. 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 CV(s) 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).

The following references may be helpful in designing an evaluation plan:

- The 2010 User-Friendly Handbook (https://www.westat.com/sites/westat.com/files/2010UFHB.pdf)
- Common Guidelines for Research & Development (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf13126)
- User-Friendly Handbook for Mixed Method Evaluations (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf97153)
- Framework for Evaluating Impacts of Broadening Participation Projects (www.nsf.gov/od/broadeningparticipation/framework_evaluating_impacts.jsp)
- Evaluation e-library of the American Evaluation Association Resource Library (http://www.eval.org/)

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. proposer's local time):

  November 04, 2015

  Bridge to the Doctorate; Pre-Alliance Planning Grants

  November 20, 2015

LSAMP Alliance Proposals (including Bridge to the Baccalaureate)

October 14, 2016

Bridge to the Doctorate; Pre-Alliance Planning Grants

November 04, 2016

LSAMP Alliance Proposals (including Bridge to the Baccalaureate)

D. FastLane/Grants.gov Requirements

For Proposals Submitted Via FastLane:

To prepare and submit a proposal via FastLane, see detailed technical instructions available at: https://www.fastlane.nsf.gov/a1/newstan.htm. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov. The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this funding opportunity.

For Proposals Submitted Via Grants.gov:

Before using Grants.gov for the first time, each organization must register to create an institutional profile. Once registered, the applicant's organization can then apply for any federal grant on the Grants.gov website. Comprehensive information about using Grants.gov is available on the Grants.gov Applicant Resources webpage: http://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 are strongly encouraged to use FastLane 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 the GPG as Exhibit III-1.

A comprehensive description of the Foundation's merit review process is available on the NSF website at: http://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 *Investing in Science, Engineering, and Education for the Nation's Future: NSF Strategic Plan for 2014-2018*. 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. (GPG 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 GPG 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.

For Alliance Proposals: rationale for and coherence of alliance structure; description of evidence-based project activities; 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 for well-established alliances; results of prior NSF LSAMP support; potential to transform undergraduate STEM education; quality of dissemination plan; potential for adding to the body of knowledge on

recruitment and retention of students historically underrepresented in STEM disciplines.

For BD proposals: 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 BD participants after the two years of NSF funding; evidence of formal connections and meaningful partnerships between STEM graduate programs; rigor of evaluation plan.

For Proposals from alliances funded more than 10 years (educational research component): relevance and usefulness of the research study; rigor of the research design and methodology; potential for the findings and/or recommendations to provide educators with practical and effective strategies for broader integration within educational systems (departments, institutions, alliances).

B. Review and Selection Process

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

No additional review methods will be used. Please see the "Additional Solicitation Specific Review Criteria" listed above.

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 be completed and submitted by each reviewer. 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 http://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 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 *Award & Administration Guide* (AAG) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag.

Special Award Conditions:

In addition to general terms and conditions, special award conditions may be included in the award notice.

For Bridge to the Doctorate 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.

Cooperation with NSF evaluation projects and special projects: 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.

For LSAMP Alliances Only: All alliances are required to report enrollment, degree data, and other data annually via the WebAMP reporting system.

For BD awards: Annual reports should indicate the improvements over the baseline and distinguish success of the host site from the success of the entire alliance.

All LSAMP awardees are required to upload a copy of the evaluation report of their projects with their annual reports. 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.

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 at least 90 days prior to the end of the current budget period. (Some programs or awards require submission of more frequent project reports). Within 90 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 *Award & Administration Guide* (AAG) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag.

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, Program Director and Co-Lead, 815 N, telephone: (703) 292-4668, email: ahicks@nsf.gov
- Tasha R. Inniss, Program Director and Co-Lead, 815 N, telephone: (703) 292-4684, email: tinniss@nsf.gov
- Martha L. James, Program Director, 815 N, telephone: (703) 292-7772, email: mjames@nsf.gov
- Maurice Dues, Program Specialist, 815 N, telephone: (703) 292-7311, email: mdues@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@nsf.gov.
- Maurice Dues, Program Specialist, 815 N, telephone: (703) 292-7311, email: mdues@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 at https://public.govdelivery.com/accounts/USNSF/subscriber/new?topic_id=USNSF_179.

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 http://www.grants.gov.

ABOUT THE NATIONAL SCIENCE FOUNDATION

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

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

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

Facilitation Awards for Scientists and Engineers with Disabilities provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See Grant Proposal Guide Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

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

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

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at http://www.nsf.gov

- **Location:** 4201 Wilson Blvd. Arlington, VA 22230
- **For General Information** (NSF Information Center)**:** (703) 292-5111
- **TDD (for the hearing-impaired):** (703) 292-5090
- **To Order Publications or Forms:**

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

  or telephone: (703) 292-7827
- **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 Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004), and NSF-51, "Reviewer/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

An agency may not conduct or sponsor, and a person is not required to respond to, an information collection unless it displays a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding the burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to:

Suzanne H. Plimpton
Reports Clearance Officer
Office of the General Counsel
National Science Foundation

Arlington, VA 22230

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