Louis Stokes Alliances for Minority Participation (LSAMP)

PROGRAM SOLICITATION
NSF 12-564

REPLACES DOCUMENT(S):
NSF 11-543

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):

August 28, 2012

Bridge to the Doctorate

October 05, 2012

First Friday in October, Annually Thereafter

Bridge to the Doctorate

October 19, 2012

Third Friday in October, Annually Thereafter

Broadening Participation in STEM Education Research Proposals

October 19, 2012

Third Friday in October, Annually Thereafter

LSAMP Alliance Proposals (Inclues Bridge to the Baccalaureate)

IMPORTANT INFORMATION AND REVISION NOTES

This solicitation includes a new activity "Bridge to the Baccalaureate Alliances" (B2B) to support community college partner institutions to accelerate the transfer of under-represented minority STEM students to four-year institutions in pursuit of a Baccalaureate STEM degree. B2B Alliances will be made up entirely of two-year colleges. Proposals may be submitted directly by a single lead two-year institution of higher learning with sub-awards made to partners within the alliance.

New, mid-level, and senior-level Alliances requesting the highest level of funding in each category must demonstrate that at least 10% of the STEM baccalaureate degrees are awarded to under-represented minority students who transferred from community colleges within the alliance.

Community College partners in all LSAMP Alliances must be budgeted as Sub-awardees unless designated as a lead institution in the Alliance.

Proposals from Senior Alliances must include a description of how they plan to continue the Alliance without support from the National Science Foundation. The description must include Alliance institutionalization and sustainability plans that continue to increase baccalaureate degree production and/or plans for re-organizing the alliance to enhance the efficiency and effectiveness of recruitment and retention strategies that target historically under-represented students in the STEM disciplines.

For information regarding the Broadening Participation in STEM Resource Network (BPS-Research Network) see the Dear Colleague Letter (NSF 12-034) at http://www.nsf.gov/pubs/2012/nsf12034/nsf12034.jsp

Important Reminders

A revised version of the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG), NSF 11-1, was issued on October 1, 2010 and is effective for proposals submitted, or due, on or after January 18, 2011. Please be advised that the guidelines contained in NSF 11-1 apply to proposals submitted in response to this funding opportunity.

Cost Sharing: The PAPPG has been revised to implement the National Science Board's recommendations regarding cost sharing. Inclusion of voluntary committed cost sharing is prohibited. In order to assess the scope of the project, all organizational resources necessary for the project must be described in the Facilities, Equipment and Other Resources section of the proposal. The description should be narrative in nature and must not include any quantifiable financial information. Mandatory cost sharing will only be required when explicitly authorized by the NSF Director. See the PAPP Guide Part I: *Grant Proposal Guide (GPG)* Chapter II.C.2.g(xi) for further information about the implementation of these recommendations.

Data Management Plan: The PAPPG contains a clarification of NSF's long standing data policy. All proposals must describe plans for data management and sharing of the products of research, or assert the absence of the need for such plans. FastLane will not permit submission of a proposal that is missing a Data Management Plan. The Data Management Plan will be reviewed as part of the intellectual merit or broader impacts of the proposal, or both, as appropriate. Links to data management requirements and plans relevant to specific Directorates, Offices, Divisions, Programs, or other NSF units are available on the NSF website at: http://www.nsf.gov/bfa/dias/policy/dmp.jsp. See Chapter II.C.2.j of the GPG for further information about the implementation of this

requirement.

Postdoctoral Researcher Mentoring Plan: As a reminder, each proposal that requests funding to support postdoctoral researchers must include, as a supplementary document, a description of the mentoring activities that will be provided for such individuals. Please be advised that if required, FastLane will not permit submission of a proposal that is missing a Postdoctoral Researcher Mentoring Plan. See Chapter II.C.2.j of the GPG for further information about the implementation of this requirement.

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:

The LSAMP program assists universities and colleges in diversifying the STEM workforce through their efforts at significantly increasing the numbers of students successfully completing high quality degree programs in science, technology, engineering and mathematics (STEM) disciplines. Particular emphasis is placed on transforming STEM education through innovative recruitment and retention strategies and experiences in support of groups historically under-represented in STEM discipline: African-Americans, Alaskan Natives, American Indians, Hispanic Americans, Native Hawiians, and Native Pacific Islanders. The knowledge generation portfolio of LSAMP supported activities contributes to the body of literature on successful practices in student recruitment, retention, persistence, and attainment of STEM undergraduate and graduate degrees, especially for the previously mentioned populations underrepresented in STEM disciplines.

The **Louis Stokes Alliances for Minority Participation (LSAMP)** program provides funding for:

- Alliances (New, Mid-Level, Senior-Level, B2B)
- Bridge to the Doctorate (BD) Activity
- Broadening Participation Research (BPR) in STEM Education

In 2012, the program will increase support to community colleges through the LSAMP Community College **Bridge to Baccalaureate (B2B) Alliances**.

LSAMP baccalareate degree recipients are eligible for continued support for up to two additional years of STEM post baccalaureate study through the **Bridge to the Doctorate** (BD) Activity. BD participants are expected to transition through graduate studies and into the professoriate and/or STEM workforce.

The **Broadening Participation Research (BPR) in STEM Education** track provides support for knowledge generation research projects that seek to create and study new theory-driven models and innovations related to the participation and success of diverse groups in STEM undergraduate education. BPR projects add new research-based strategies and models to broadening participation in STEM and increase the capacity of scholars to conduct this type of research.

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.

- A. James Hicks, Program Director, 815 N, telephone: (703) 292-8640, fax: (703) 292-9018, email: ahicks@nsf.gov
- Tasha R. Inniss, Program Director, 815 N, telephone: (703) 292-4684, email: tinniss@nsf.gov
- Maurice Dues, Program Specialist, 815 N, telephone: (703) 292-7311, fax: (703) 292-9018, 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 or Cooperative Agreement

Estimated Number of Awards: 60

Up to 60 awards will be made across fiscal 2012 and 2013.

In FY 2012, up to 20 Bridge to the Doctorate (BD) grants will be made.

In FY2013, 20 Alliance grants (this includes 5 B2B), up to15 Bridge to the Doctorate (BD) grants and up to 5 Broadening Participation Research (BPR) in STEM Education grants.

Anticipated Funding Amount: $20,000,000

$20,000,000 across fiscal years 2012 and 2013; Subject to the availability of funds.

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:

Alliance (including the B2B) and BD: To promote institutional commitments to increase the quality and quantity of under-represented minorities in STEM disciplines, the President or Provost of the lead institution should serve as the Principal Investigator. A full explanation should be provided for a PI designation in variance with this requirement. Co-principal investigators from partner institutions may be designated, as appropriate, for the project.

Broadening Participation Research in STEM Education: Eligible PI/co-PI(s) for proposals applying for educational research or evaluation support should be the individual conducting or responsible for the research or evaluation project. Other potential co-Principal Investigators include collaborators on the research project. At least one of the PI's must have experience in educational research.

Limit on Number of Proposals per Organization:

Alliances (including B2B) and BD: 1

Broadening Participation Research in STEM Education: No limit.

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

Alliances (including B2B): 1

Bridge to the Doctorate: 1

Broadening Participation Research in STEM Education: No limit

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Not required
- **Preliminary Proposal Submission:** Not required
- **Full Proposals:**
  - Full Proposals submitted via 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:** Not Applicable

C. Due Dates

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

August 28, 2012

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

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I. INTRODUCTION

The National Science Foundation supports research at the frontiers of knowledge, across all fields of science, technology, engineering, and mathematics and all levels of STEM education. The NSF enables innovation and discovery in science, technology, engineering, and mathematics by educating and preparing a diverse and able STEM workforce who are motivated and prepared to participate at the frontiers of science. NSF is committed to reaching across society to ensure that the rich diversity of the nation's cultures is well represented in the STEM workforce and that individuals engaged in STEM fields are trained to participate fully in the global research enterprise.

The Louis Stokes Alliances for Minority Participation (LSAMP) program is managed by the Division of Human Resource Development (HRD), which is part of the Directorate for Education and Human Resources (EHR) of the National Science Foundation (NSF).

LSAMP was established by Congressional mandate in 1991 to significantly increase the quality and quantity of minorities who successfully complete baccalaureate degrees in science, technology, engineering, and mathematics (STEM) and who continue on to graduate studies in these fields. The program supports increasing the participation and advancement of under-represented minorities.

To meet the challenges presented by the nation's increasing needs in STEM, LSAMP is committed to the development of highly competitive STEM students from historically underrepresented minority populations - African-Americans, Hispanics, Americans Indians, Alaskan Natives, Native Hawaiians, and Pacific Islanders - from pre-college through post-baccalaureate levels at our nation's colleges and universities.

The 2006 evaluation report entitled "Revitalizing the Nation's Talent Pool in STEM" references the research and theoretical basis of the LSAMP program. This evaluation report also serves as evidence of the program's success in implementing the model nationwide to address student persistence and retention in STEM discipline at the undergraduate level. (http://www.urban.org/url.cfm?ID=311299)

In alignment with the goals of the Directorate for Education and Human Resources, the LSAMP program and the HRD Broadening Participation Activities (BPR) continue to invest in building the body of knowledge in STEM learning through research and evaluation to answer following questions:

- What motivates choice of, or retention in, STEM careers for populations historically underrepresented in STEM disciplines?
- What are new directions for addressing the intersection of race/ethnicity, gender and disability to ensure student access and success in STEM preparation and professions?

II. PROGRAM DESCRIPTION

LOUIS STOKES ALLIANCES FOR MINORITY PARTICIPATION (LSAMP)

The LSAMP program provides funding for New, Mid-level and Senior-level Alliances, the Bridge to the Baccalaureate (B2B) Alliance, the Bridge to the Doctorate (BD) activity, and Broadening Participation Research in STEM Education (BPR).

The LSAMP program supports sustained and comprehensive approaches to broadening participation at the baccalaureate level. These approaches facilitate the production of students who are well prepared in STEM and motivated to pursue graduate education. Alliance projects place emphasis on: a) aggregate baccalaureate degree production; b) attention to individual student retention and progression to baccalaureate degrees; and c) successful transfer of URM students from 2-year to 4-years institutions in STEM programs; d) seamless transition of students to graduate schools in STEM. As such, expectations are placed on institutionalizing, disseminating and promoting the replication of strategies and collaborative approaches that have shown success in the transition of undergraduate STEM students to graduate STEM programs.

The LSAMP program goals are to produce an increase in the number of STEM students transferring from 2-year to 4-year institutions and more importantly to increase the overall numbers and quality of STEM graduates. This increased production in the pool of STEM students from under-represented groups will have the potential to lead to significant change in the production of new Ph.D.s and their entrance into STEM professions. The strategy for implementing projects must be grounded in "evidenced-based" practices and be clear and focused. LSAMP Alliances must be structured to address two interrelated requirements:

- First, the design of the Alliance must be based on evidence of sound programmatic approaches. The organization of the Alliance must prove to be successful in meeting well-defined needs, cost effective, and involve undergraduates in faculty research.
- Second, the proposed plan must be comprehensive and longitudinal, since fragmented or isolated efforts provide insufficient response to the acknowledged scope and scale of the problem being addressed by the LSAMP program.

The program provides wide latitude to proposers in designing projects to address the program goals described above. The structure and content of proposed projects should be influenced by the institutional and organizational differences of the Alliance members, characteristics of specific localities, and strategies used in the formation of the Alliances. Project specifics may encompass a wide variety of activities. The project activities must form a feasible, logical and comprehensive effort focused upon improving undergraduate educational experiences and leading to increased quality and quantity in numbers of STEM graduates.

Successful program management practices include, but are not limited to: (1) devoting careful attention to management and administrative collaboration among participating organizations to ensure long-term continuation of LSAMP or similar activities beyond the term of NSF financial support; and (2) developing specific evaluation plans and procedures for assessing qualitative and quantitative changes including the definition of a baseline of pre-LSAMP data that will be used to compare post-LSAMP retention, progression, and graduation rates in STEM fields.

Comprehensive and longitudinal plans may be reflected in: (1) the establishment of alliances with members drawn from among community colleges, 4-year institutions, school systems, Federal/state/local government agencies, major national laboratories and centers, industry, private foundations, and professional STEM organizations, as necessary to achieve the proposed LSAMP objectives; (2) incorporation of academic, curricular, and co-curricular enrichment activities designed to improve instructional performance as well as increase the motivation, performance, and progression of talented students within STEM undergraduate degree programs in preparation for graduate degree programs; and (3) as necessary, direct student support for academic year and summer enrichment activities.

Mid- and Senior- level Alliances are expected to develop project sustainability plans for Alliance continuity without NSF funding. Successful proposals must demonstrate past successes e.g., efforts at transforming the academic and/or research environment, in producing highly competitive URM graduates in STEM disciplines. Improving retention and transfer rates to four-year STEM degree-granting institutions for students matriculating in STEM programs at community colleges is a priority. Strengthening learning communities and peer-led team learning at these institutions, providing support and opportunities for student research experiences (research methods, hands-on experimentation, conference attendance and presentation), social integration, and institutional collaboration among two-and four year institutions are suggested interventions to prepare community college students for transfer into STEM programs at baccalaureate degree-granting institutions.

The following are specific requirements for support at each alliance level under the LSAMP program. Proposals will be evaluated on their potential to increase historically underrepresented minority participation in STEM disciplines. Alliances with one or more Hispanic-serving institutions are strongly encouraged to apply. NSF requires potential awardees to rigorously evaluate recruitment and retention programs and activities. All alliances are strongly encouraged to have community colleges as partners in the alliance composition. Mid-level and senior-level alliances are required to partner with community colleges with the intent to increase the number of students who transfer into 4-year STEM degree programs. For this solicitation a community college is the same as a two-year institution, a junior college, a technical college or a tribal college.

1A. NEW ALLIANCES

Alliances are considered new if they have not received previous LSAMP Alliance funds and meet the criteria for an LSAMP partnership alliance described under "eligible organizations." The president, provost or designee of the lead institution of a prospective new alliance is encouraged to contact the NSF LSAMP program for guidance prior to submitting a proposal for funding.

First time applicants from four-year institutions must focus on baccalaureate production of historically underrepresented minorities in STEM and must define their current baseline production of these minority baccalaureate recipients in STEM fields. All new applicants must commit to a significant increase in baccalaureate production in STEM fields within a five-year award period and justify the level of increase they define as significant. Subsequent support will be contingent on evidence of success in areas of individual student recruitment, retention and progression to baccalaureate degrees. New alliances are required to focus on innovative recruitment and retention interventions at the undergraduate level with particular emphasis on pre-college, freshman and sophomore persistence in STEM disciplines. Alliances requesting the highest level of funding must provide a detailed plan that insures that at least 10% of the STEM baccalaureate degrees awarded to URM students who have transfered from community colleges within the Alliance.

Once an award is made, the original baseline goals may not be adjusted through additions and/or reductions in alliance membership. A clear plan of action to significantly increase baccalaureate STEM degrees at individual 4-year institutions is essential for a successful proposal.

1B. MID-LEVEL ALLIANCES

Alliances are considered at mid-level if they have received a minimum of 5 years of continuous LSAMP support and (1) focus on the recruitment and retention of freshman and sophomore students in STEM disciplines and (2) support early interventions for the retention of upper level students with an emphasis on entry into STEM graduate programs. As a requirement for mid-level alliances status, the proposal must include community college partners in order to increase STEM student transfer from two-year to four-year institutions. Community college strategies, components, and interventions aimed at strengthening the transfer to 4-year STEM programs are supported through these alliances. Alliances requesting the highest level of funding must demonstrate that at least 10% of the STEM baccalaureate degrees are awarded to URM students who have transfered from community colleges within the Alliance. Mid-level alliances must also demonstrate increasing numbers of students from historically URM populations pursuing STEM graduate studies. Plans for LSAMP institutionalization and program sustainability beyond NSF funding **must also be provided within the project description.**

Proposals from previously funded alliances must include initial plans to achieve institutionalization of effective pathways to STEM graduate study and careers for baccalaureate recipients at participating institutions. Mid-level alliances seeking further support opportunities for graduate level academic and research activities should contact program officials in the "Alliances for Graduate Education and the Professoriate" program and the Division of Graduate Education within the NSF Directorate for Education and Human Resources.

New alliances must proceed to the "mid-level" for continued LSAMP support. Two-year programs and institutions focused on associate-level technical workforce development are not eligible to be a partner in the NEW alliance unless they can demonstrate a clear academic pathway to a 4-year STEM degree; the original intent of the LSAMP program. Institutions partnering in a NEW alliance may not be a formal partner in any other LSAMP alliance.

1C. SENIOR-LEVEL ALLIANCES

Alliances are considered senior-level if they have received 10 years or more of LSAMP support and have institutionalized successful practices resulting in measurable impact in the STEM enterprise for students from underrepresented populations. Senior alliances should conduct a comprehensive LSAMP project evaluation of their STEM recruitment and retention strategies. Continued funding requests should address new and innovative strategies from the findings that contribute to higher retention and graduation rates at the undergraduate level as well as increased competitiveness for and entry into graduate study in STEM disciplines. Senior-level alliances must address specific plans for alliance sustainability and LSAMP program institutionalization.

Senior-level alliances must include community college partners in order to increase STEM student transfer from two-year to four-year institutions. Community college strategies, components, and interventions aimed at strengthening the transfer to 4-year STEM programs are supported through these alliances. Alliances requesting the highest level of funding must demonstrate that at least 10% of the STEM baccalaureate degrees are awarded to URM students who have transfered from community colleges within the Alliance. Senior-level alliances must also demonstrate increasing numbers of students from historically underrepresented minority populations pursuing STEM graduate studies.

In the project description, senior alliances with 20 years of funding are required to document established practices that have been successful in the recruitment, education and retention of historically URM STEM students. Plans for LSAMP institutionalization and program sustainability beyond NSF funding must also be provided within the project description.

International Research Component: Researchers Bowman and Sage (2002) cite the need for students of science to participate actively in scientific research to gain first-person knowledge of the conventions of science. Immersion in undergraduate research, including international research, serves as a means to prepare students for graduate programs in the sciences. [1] Preparing a diverse, globally-engaged scientific and technological workforce necessitates strengthening international research opportunities for students underrepresented in STEM fields. Senior-level alliances, having had the experience to build and institutionalize successful practices in STEM education, are required to incorporate a plan to engage STEM students in international research opportunities, specifically research experiences. The budget must clearly identify student support for international activities. International activities must reach beyond conference attendance and cultural experiences to be considered a competitive international research experience.

[1] Bowman, M. H., Stage, F. K. (2002). Personalizing the goals of undergraduate research. *Journal of College Science Teaching,* 32(2), 120-25.

Community College Component: All LSAMP Mid- and Senior-Level alliance proposals must incorporate a strategic plan to establish meaningful community college articulation, interventions, and connect with 4-year institutions. Highly competitive proposals must provide strong evidence of linkages and/or articulation agreements that demonstrate high success/impact in increasing the number of under-represented minority student that transfer to STEM disciplines over the past five years.

Proposers are encouraged to collaborate with institutions with active awards from NSF's Division of Undergraduate Education (DUE), specifically S-STEM, STEP, TUES and Advanced Technological Education (ATE) projects. These programs provide STEM scholarships and support to increase institutional capacity through faculty development, curriculum and program development that complements LSAMP student support. For details on DUE programs visit the NSF website at http://www.nsf.gov/div/index.jsp?div=DUE.

1D. BRIDGE TO THE BACCALAUREATE (B2B) ALLIANCES

On October 4, 2010, the Administration announced the launch of *Skills for America's Future,* a new initiative to expand innovative strategies and improve the skills of America's workers. The goal is to produce 5 million more community college 2-year degrees and certificates by 2020. In their report *"Engage to Excel: Producing One Million Additional College Graduates with Degrees in Science, Technology, Engineering, and Mathematics",* the President's Council of Advisors on Science and Technology (PCAST) provides a strategy for improving STEM education. *"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." (http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast-engage-to-excel-v11.pdf).*

NSF recognizes the valuable role that community colleges provide for the nation and will continue to enhance the capacity of community colleges in STEM. According to a 2005 NRC study, "A larger percentage of students from some minority groups, notably Hispanics and American Indians, attend community colleges than White, African-American, and Asian students. In effect, community colleges have become an educational pipeline for under-represented minorities entering the higher education system." The same report notes that "20 percent of engineering degree holders began their academic careers starting in and earning at least 10 credits

at community colleges." In addition, "40 percent of the recipients of engineering bachelor's and master's degrees in 1999 and 2000 attended community colleges at some time." (*Enhancing the Community College Pathway to Engineering Careers*, 2005) Building strong STEM courses that articulate with four-year teacher preparation programs is vital to the preparation of a strong teaching workforce. According to a recent report titled, *The State of Affairs: Impacts and Implications of STEM Teacher Education at Two-Year Colleges*, 2008 "more than 20% of all teachers begin their college careers at two-year institutions and nearly half of all teachers complete some of their science or mathematics courses there."

NSF further recognizes the significant challenges that face community colleges. A recent publication by the Carnegie Foundation for the Advancement of Teaching found that "Many students who attend community college begin unprepared to succeed in mathematics." Students are more likely to fail developmental mathematics than any other courses in higher education. Failure rates in individual developmental courses exceed 35 percent, and two-thirds of students fail to complete the entire sequence of courses to which they are referred. http://www.carnegiefoundation.org/statway/reconsider-and-redesign-developmental-mathematics

LSAMP B2B alliances will support efforts to meet the Administration's 2020 goal to increase the number of college graduates by 50 percent - turning out at least 8 million additional graduates by the end of the decade. The B2B alliances provide a bridge to the baccalaureate degree for historically underrepresented minority STEM students who begin their instruction at a community college with the intent to transfer into 4-year STEM degree programs. All applicants must commit to a significant increase in student transfer into STEM fields within a three-year award period and justify the level of increase they define as significant. Subsequent support will be contingent on evidence of success in areas of individual student recruitment, retention and progression to 4-year STEM degree programs. B2B alliances are required to focus on innovative recruitment and retention interventions at the undergraduate level with particular emphasis on pre-college, freshman and sophomore retention in STEM disciplines. Community college strategies, components, and interventions aimed at strengthening the transfer to 4-year STEM programs are supported through these alliances. Institutions with B2B alliance awards must present evidence of strong articulation and transfer agreements with 4-year institutions.

Eligible Activities: Alliances are considered B2B if they consist entirely of community colleges as partners. The LSAMP B2B funding opportunity supports activities such as: employing team and cohort building principles (e.g., mentoring, collaborative learning experiences, small group clustering in academic sections, structured work-study groups); individual skill development (e.g., participation in special seminars and colloquia); participation in undergraduate research activities both in the U.S. and abroad; (e.g., stipends or salary for academic-year or summer research programs for both students and mentors, funding for faculty reassigned time retention activities); and, related personal career support, which includes counseling and mentoring, preparation for graduate school and other activities designed to enhance student retention in STEM. These experiences may be academic or industrial internships in formal or informal STEM environments, including museums, zoos, botanical gardens, etc.

Faculty and administrative support may be requested for activities such as mentoring or supplemental instruction at the community college campus. The proposal must include plans for sustaining successful practices once the award expires.

Rigorous external project evaluation (qualitative, quantitative or mixed methods) is required. Formative and summative evaluation plans must be submitted with the proposal. A full evaluation report of the activity is required with the project final report. The budget may include evaluation costs.

All proposal requests for funding must describe plans for tracking student progress over the course of funding and post-award. Because the LSAMP program is focused on baccalaureate degree attainment, B2B projects must track the number of community college URM students who successfully transfer into a baccalaureate STEM majors. Nonfunded formal partnerships with 4-year institutions are encouraged. Letters of collaboration with partner academic institutions or other entities must be included. A plan, with evidence of contunued commitment, to support students beyond the three years of LSAMP B2B funding must also be documented. Proposals for B2B alliance funding must be in conformance with the Grant Proposal Guide unless as directed by this solicitation.

Note: Once an award is made, the original baseline goals may not be adjusted through additions and/or reductions in alliance membership. A clear plan of action to significantly increase transfer into STEM degrees at individual 4-year institutions is essential for a successful proposal. Two-year institutions focused on associate-level technical workforce development are not eligible to be a partner in the B2B alliance unless they can demonstrate a clear academic pathway to a 4-year STEM degree; the original intent of the LSAMP program. Institutions partnering in a B2B alliance may not be a formal partner in any other LSAMP alliance.

2. BRIDGE TO THE DOCTORATE (BD) ACTIVITY

Senior-level LSAMP alliances are eligible for Bridge to the Doctorate (BD) support. BD funding provides eligible students with financial support for two years of graduate study.

Programmatic activities for BD support must describe effective recruitment and retention strategies in STEM graduate education and must be based on current research for attracting, retaining, educating and graduating the participants. Proposers must provide documentation of past performance at the designated graduate institutional site of retaining, graduating, and placing significant numbers of LSAMP graduates into STEM doctoral-degree programs. A plan for formally connecting a significant number of newly matriculated LSAMP students, including master's degree graduates, to doctoral degree programs is expected.

Successful projects are encouraged to partner with other NSF-funded programs, such as Centers of Research Excellence in Science and Technology (CREST), NSF research centers, Integrative Graduate Education and Research Traineeship Program (IGERT), or Alliances for Graduate Education and the Professoriate (AGEP). Successful BD projects must ensure that a substantive number of first year BD participants apply to NSF's Graduate Research Fellowship Program (GRFP). Similarly, BD applicants must present an action plan describing dollar support and sources for continuing students in years three and beyond towards doctorate degrees. Action plans identifying strategies for connecting the transfer of third-year BD recipients interested and eligible for admission to STEM doctoral programs are required. Recruitment of students is expected from all STEM disciplines. A concentration of students in one discipline within a cohort is strongly discouraged.

Tracking of project participants that enter doctoral degree programs and the workforce, including the professoriate, is also expected. Other highly valued activities include regular BD meetings, mentoring of students, resources to support annual student participation at professional meetings, seminars on productive academic efforts, demystifying degree programs, and available career options. A critical mass of twelve (12) LSAMP STEM graduate students is required under this activity.

The NSF contribution to graduate student stipends is $60,000 over two years for each of twelve students. NSF will provide a cost-of-education allowance to the institution for tuition, health insurance, and other normal fees up to $10,500 per year for up to two years for each of twelve students. Additional funds up to $15,000 may be requested for activities in other cost categories (e.g., salaries, wages and fringe benefits, travel, materials and supplies, and applicable indirect costs) that contribute to the effectiveness of the BD program; any such costs must be listed under the appropriate NSF budget categories and must be explained in the Budget Justification. Costs for project evaluation are allowable. Salary support for administrative personnel is not allowable under this funding opportunity. Organizations should propose in accordance with their current disclosed accounting practices.

BD proposals must include student tracking and evaluation plans. Award notifications will include language requiring recipients of BD funding to provide essential data for NSF-sponsored program evaluations.

The maximum request per alliance for BD support is $987,000. All BD student support costs should be listed on Line F, "Participant Support," on the proposal budget. All students receiving stipends must be citizens or permanent residents of the United States or its possessions.

IMPORTANT NOTE: Requests for BD support must be submitted as a new proposal in NSF FastLane or Grants.gov. Supplemental requests will be returned without review. BD proposals must be submitted by the lead institution of the LSAMP alliance. Successful proposals will be awarded as two-year standard grants. Residual funds from BD grants may not be reallocated to other cohorts without a detailed written justification from the alliance, and approval by an NSF Program Director**.** Annual and final reporting requirements are applicable for BD awards.

3. BROADENING PARTICIPATION RESEARCH IN SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS (STEM) EDUCATION PROJECTS

The Broadening Participation Research in STEM Education (BPR) track exists across HRD programs and may be found in the following solicitations: Louis Stoke Alliances for Minority Participation (LSAMP); Historically Black Colleges and Universities Undergraduate Program (HBCU-UP); Research in Disabilities Education (RDE); Research on Gender in Science and Engineering (GSE); and Tribal Colleges and Universities Program (TCUP). Priorities and restrictions on study populations and awardee institutions may apply depending on the HRD program to which the proposal is submitted. The goal of this track across programs in the Division of Human Resource Development is to enhance our understanding of the underlying issues affecting the differential participation and success rates of students from underrepresented groups in STEM.

LSAMP Broadening Participation Research (BPR) in STEM Education proposals should be designed to create and study new models and innovations in STEM teaching and learning to enhance the understanding of the underlying issues affecting the differential participation and success rates of students from underrepresented minority groups; add to the research knowledge; and inform STEM education practices and interventions. Broadening Participation Research proposals should describe evidence-based research studies that contribute to understanding the participation of and successful outcomes for underrepresented groups in STEM. Proposals should consider new evidence-based strategies and practices and institutional structure models for broadening participation in STEM and increasing the capacity of scholars in minority-serving institutions to conduct this type of research.

Proposed research may investigate behavioral, cognitive, affective, learning and social differences as well as organizational, institutional or systemic processes that may impact participation in STEM education. Successful proposals will be grounded in appropriate theory and incorporate recent innovations and advances in research methodologies, conceptual frameworks and/or data gathering and analytic techniques. Proposals should reflect relevant advances in quantitative, qualitative, and mixed methods research and evaluation methodologies and provide a compelling argument about how the methodologies proposed are approximately matched with the strategic research questions of the project. Additionally, proposals should demonstrate how the methods chosen would result in rigorous, cumulative, reproducible, and usable findings to merit peer-review and publication.

LSAMP alliance member institutions are eligible to submit proposals for educational research projects focused on baccalaureate attainment in STEM by African-Americans, Alaska Natives, Hispanic Americans, American Indians, Native Hawaiian, and Native Pacific Islanders. In addition, educational research proposals which address other emerging topics in STEM education and learning at the undergraduate and graduate levels are acceptable submissions.

Broadening Participation Research proposals must include PIs with demonstrable expertise in education research and/or social science research methods in addition to PIs with knowledge about STEM programs at majority and minority-serving institutions, including community colleges. Proposers are encouraged to establish collaborations to strengthen the research project and to describe in the proposal the nature of the collaboration and the anticipated benefits. As appropriate, proposals should describe mechanisms to effectively and efficiently transfer findings into educational practice for use by other researchers and policymakers.

GUIDELINES FOR BUDGET DEVELOPMENT FOR B2B, NEW, MID-LEVEL AND SENIOR LEVEL ALLIANCE PROPOSALS

Guidelines for requesting funds for *B2B* alliances are indicated as follows:

- $500,000 per year for alliances that transfer more than 300 underrepresented minority students into STEM baccalaureate degree programs annually;
- Approximately $300,000 to $500,000 per year for alliances that transfer between 200-300 underrepresented minority students into STEM baccalaureate degree programs annually; and,
- $300,000 or less per year for alliances that transfer 100-200 underrepresented minority students into STEM baccalaureate degree programs annually.
- Faculty and instructional staff at community colleges within LSAMP alliances can request funding of up to $12,500 per year for three years to support limited faculty re-assigned time and/or summer salary to lead the STEM student activities described in the B2B program description. Requests for community college faculty (CCF) funding must be submitted through the alliance lead institution and must clearly describe how the CCF funding will result in strengthening the B2B underrepresented minority student transfer rate to 4-yr STEM degree programs.

Guidelines for requesting funds for *new* alliances are indicated as follows:

- $700,000 to $1,000,000 per year for alliances that award more than 500 STEM baccalaureate degrees to underrepresented minorities annually;
- Approximately $500,000 to $700,000 per year for alliances that award between 300-500 STEM baccalaureate degrees to underrepresented minorities annually; and,
- $500,000 or less per year for alliances that award fewer than 300 STEM baccalaureate degrees to underrepresented minorities annually.

Funding guidelines for *mid-level* alliances are stipulated as follows:

- $700,000 per year for alliances that award 700 or more STEM baccalaureate degrees to underrepresented minorities annually;
- Approximately $500,000 to $700,000 per year for alliances that award between 500-700 STEM baccalaureate degrees to underrepresented minorities annually; and,
- $500,000 or less per year for alliances that award fewer than 500 STEM baccalaureate degrees to underrepresented minorities annually.
- Alliances requesting the highest level of funding in each category must demonstrate that at least 10% of the STEM 4-year degrees were awarded to students who transferred from community colleges within the alliance.

Funding guidelines for senior-level alliances are provided as follows:

- $800,000 per year for projects that award 1,000 or more STEM baccalaureate degrees to underrepresented minorities annually;

- Approximately $600,000 to $700,000 per year for projects that currently award between 700-1,000 STEM baccalaureate degrees to underrepresented minorities annually; and,
- $500,000 or less per year for projects that award fewer than 700 STEM baccalaureate degrees to underrepresented minorities annually.
- Alliances requesting the highest level of funding in each category must demonstrate that at least 10% of the STEM 4-year degrees were awarded to students who transferred from community colleges within the alliance.

LSAMP alliance awards will not exceed $1,000,000 per year. The awards will be managed through Cooperative Agreements, Continuing Grants or as Standard Awards for up to 5 years. Community College partners in all LSAMP Alliances must be budgeted as Subawards. Progress will be assessed annually prior to continued NSF support. LSAMP projects nearing the completion of the five-year funding period may submit a competitive renewal proposal for an additional five years of support.

Requested financial support should be clearly justified with established recruitment and selection eligibility as well as accountability criteria.

Allowable STEM student support is limited to the following activities: employing team and cohort building principles (e.g., mentoring, collaborative learning experiences, small group clustering in academic sections, structured work-study groups); individual skill development (e.g., participation in special seminars and colloquia); participation in undergraduate research activities both in the U.S. and abroad; (e.g., stipends or salary for academic-year or summer research programs for both students and mentors); and, related personal career support, which includes counseling and mentoring, preparation for graduate school and other activities designed to enhance student retention in STEM. These experiences may be academic or industrial internships in formal or informal STEM environments, including museums, zoos, botanical gardens, etc.

The program continues to encourage the recruitment and retention of Veterans in STEM fields as a means to diversify and increase the STEM workforce. Implementation strategies that recruit a cohort of veterans and suggest strategies to retain them are strongly encouraged in all LSAMP Alliances.

All students receiving stipends must be citizens or permanent residents of the United States or its possessions.

EVALUATION OF LSAMP PROJECTS

Each LSAMP Alliance, BD and BPR proposal submission is expected to include plans for rigorous project evaluation. Proposals should provide clear goals, objectives, benchmarks, and indicators of progress that will inform reviewers of the proposers' understanding of essential recruitment and retention factors for judging accountability, both quantitative (underrepresented minority enrollment and baccalaureate degree production) and qualitative (the process of change in organizational culture, impact and progress in developing highly competitive, well-prepared STEM students).

The evaluation plan must correspond to the overall stated goals and objectives of the project and address measurable outcomes from the investment to be reported to NSF. Formative and summative evaluations should include holistic assessments of the collaboration/partnership in addition to evaluation of the interventions. Submission of external evaluation reports and outcomes must accompany year 4 annual project reporting for 5-year projects. Reporting of subsequent evaluation activities and project outcomes should be included in the final project report.

4. OTHER FUNDING OPPORTUNITIES

LSAMP also funds Conferences, Symposia, Workshops and Grant Supplements for existing awards. Such proposals may be submitted, as described in the Grant Proposal Guide (GPG), which is available at http://www.nsf.gov.

- For Conferences, Symposia, and Workshops, see GPG, II.D.8.
- For Cooperative Activity with the Department of Energy, see Dear Colleague Letter (10-019) at http://www.nsf.gov/pubs/2010/nsf10019/nsf10019.jsp
- For information regarding the Broadening Participation in STEM Resource Network (BPS-Research Network) see the Dear Colleague Letter (NSF 12-034) at http://www.nsf.gov/pubs/2012/nsf12034/nsf12034.jsp

III. AWARD INFORMATION

ESTIMATED PROGRAM BUDGET AND NUMBER OF AWARDS IS SUBJECT TO THE AVAILABILITY OF FUNDS. SUPPLEMENTAL FUNDING WILL NOT BE PROVIDED FOR ANY OF THE PROJECTS DESCRIBED BELOW.

LSAMP Proposals:

1A. New Alliances

- Number of awards: Up to 5 in FY 2013
- Project Length: 5 Years
- Award size: Up to $1,000,000 (Funding levels depend on STEM baccalaureate graduation rates; see guidelines for budget development for alliances)
- Grant Administration: New alliances will be managed by NSF as cooperative agreements, continuing or standard grants

1B. Mid-level Alliances

- Number of awards: Up to 5 in FY 2013
- Project Length: Up to 5 in Years
- Award size: Up to $700,000 (Funding levels depend on STEM baccalaureate graduation rates; see guidelines for budget development for alliances)
- Grant Administration: Mid-level Alliances will be managed by NSF as cooperatve agreements, continuing or standard grants

1C. Senior-level Alliances

- Number of awards: Up to 5 in FY 2013
- Project Length: 5 Years
- Award size: Up to $800,000 (Funding levels depend on STEM baccalaureate graduation rates; see guidelines for budget development for alliances)
- Grant Administration: Senior-level Alliances will be managed by NSF as cooperative agreements, continuing or standard

grants

1D. Bridge to the Baccalaureate

- Number of awards: Up to 5 in FY 2013
- Project Length: 3 Years
- Award size: Up to $500,000 (Funding levels depend on STEM transfer rates; see guidelines for budget development for alliances)
- Grant Administration: B2B Awards will be managed by NSF as cooperative agreements, continuing or standard grants

2. Bridge to the Doctorate

- Number of awards: Up to 20 in FY 2012 and up to 15 in FY 2013 (Anticipated)
- Project Length: 2 Years
- Award size: Up to $987,000 (Per student: $60,000 stipend, $10,500 tuition & fees)
- Grant Administration: BD Awards will be managed by NSF as cooperative, agreements, continuing or standard grants

3. Broadening Participation Research in STEM Awards

- Number of awards: Up to 5 in FY 2013
- Project Length: Up to 3 Years
- Award size: Up to $350,000
- Grant Administration: BPR awards will be managed by NSF as cooperatvie agreements, continuing or standard grants.

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:

Alliance (including the B2B) and BD: To promote institutional commitments to increase the quality and quantity of under-represented minorities in STEM disciplines, the President or Provost of the lead institution should serve as the Principal Investigator. A full explanation should be provided for a PI designation in variance with this requirement. Co-principal investigators from partner institutions may be designated, as appropriate, for the project.

Broadening Participation Research in STEM Education: Eligible PI/co-PI(s) for proposals applying for educational research or evaluation support should be the individual conducting or responsible for the research or evaluation project. Other potential co-Principal Investigators include collaborators on the research project. At least one of the PI's must have experience in educational research.

Limit on Number of Proposals per Organization:

Alliances (including B2B) and BD: 1

Broadening Participation Research in STEM Education: No limit.

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

Alliances (including B2B): 1

Bridge to the Doctorate: 1

Broadening Participation Research in STEM Education: No limit

Additional Eligibility Info:

A New, Mid-level, Senior-level alliance may hold only one active 5-year award at a time. The alliance must consist of one or more graduate degree granting institution(s) as well as 2-4 year degree-granting institutions, including community colleges. **An institution may be a member in only one alliance.**

A B2B alliance may hold only one active 3-year award at a time. The alliance must consist entirely of 2-year colleges. An institution may be a member in only one alliance. Institutions partnering in a B2B alliance may not be a formal partner in any other LSAMP alliance.

Bridge to the Doctorate*:* Only LSAMP alliances at the senior level may apply for BD funding. Proposals for BD funding must be submitted by the LSAMP alliance lead institution only. BD sites at alliance institutions other than the lead alliance institution will be funded through subaward agreements.

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.

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

Collaborative Proposals. All collaborative proposals submitted as separate submissions from multiple organizations must be submitted via the NSF FastLane system. Chapter II, Section D.5 of the Grant Proposal Guide provides additional information on collaborative proposals.

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.

After selecting the LSAMP program solicitation number on the COVER SHEET, enter the program name - the "NSF Unit Consideration" must be specified - select Alliances for Minority Participation (AMP) for LSAMP. The activity LSAMP Bridge to the Doctorate, LSAMP Broadening Participation Research Project or LSAMP Bridge to the Baccalaureate Project must be included in the title of the proposal. (Grants.gov users: The program solicitation number will be pre-populated by Grants.gov on the NSF Grant Application Cover Page. Refer to Section VI.1.2 of the NSF Grants.gov Application Guide for specific instructions on how to designate the NSF Unit of Consideration).

Refer to Section II, Program Description, for specific proposal preparation information and instructions. Proposals failing to clearly identify the appropriate program/activity may be returned without review at the discretion of NSF program staff.

B. Budgetary Information

Cost Sharing: Inclusion of voluntary committed cost sharing is prohibited.

C. Due Dates

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

  August 28, 2012

  Bridge to the Doctorate

  October 05, 2012

  First Friday in October, Annually Thereafter

  Bridge to the Doctorate

  October 19, 2012

  Third Friday in October, Annually Thereafter

  Broadening Participation in STEM Education Research Proposals

  October 19, 2012

  Third Friday in October, Annually Thereafter

  LSAMP Alliance Proposals (Inclues 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://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

For proposals to the LSAMP Program, additional review criteria will apply.

SPECIAL REVIEW CRITERIA FOR PROPOSALS SUBMITTED TO THE LSAMP PROGRAM

All proposals will be reviewed for strategic fidelity, relevance and usefulness of the proposed interventions and anticipated outcomes, evidence of institutionalization and sustainability, and contribution to the body of knowledge in recruitment and retention of underrepresented minorities in science, technology, engineering, and mathematics disciplines and into the workforce as well as the potential to transform STEM education and student learning.

In addition to the standard NSF review criteria of demonstrating intellectual merit and broader impacts of the project, reviewers will be asked to evaluate proposals in terms of linkages to other NSF programs and plans for rigorously evaluating the projects or programs over the duration of the grant period.

Reviewers will be asked to evaluate all LSAMP proposals, including the B2B alliance proposals, using the following program specific review criteria:

Linkages: Proposals should clearly demonstrate linkages to other NSF-funded programs, where possible, and the benefits to alliance students and faculty. For projects with BD funding, reviewers will be instructed to evaluate evidence of formal connections and involvement with AGEP institutions or other graduate education programs and organizations as well as the continuation of these connections through the STEM doctoral degree. Reviewers will be instructed to critically evaluate the evidence of meaning full partnerships and the potential for broad, measurable and sustainable impact from new or continued investment in the activities.

Evaluation: Proposals will be evaluated on the rigor of the evaluation plan. In addition, the adequacy of resources and expertise to implement a rigorous evaluation over the duration of the award period will be assessed.

Institutionalization: Alliance proposals must address the institutionalization and sustainability of previous LSAMP supported activities.

For LSAMP BPR proposals, reviewers will assess the relevance of the research topic, research design and methodology, and the potential for the findings and/or recommendations to provide educators with practical and successful strategies for broader integration within educational systems (departments, institutions, alliances).

Innovativeness and Value-Added: All proposals will be evaluated on tranformational program development in the academic and social environment (including the departmental, institutional and alliance levels) leading to the production of highly competitive students in STEM disciplines from underrepresented minority populations. Examples of transformational program development activities include, but are not limited, to: (1) cyber-enabled learning of STEM disciplines, (2) utilization of STEM educators within the partnerships to enhance skills and knowledge content of the academic community, (3) professional development activities for the academic community and (4) increasing the understanding of science beyond the classroom.

B. Review and Selection Process

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

Reviewers will be asked to evaluate proposals using two National Science Board approved merit review criteria and, if applicable, additional program specific criteria. A summary rating and accompanying narrative will 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 cooperative agreements. 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 program nor for BD evaluation activities.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the Principal Investigator must submit an annual project report to the cognizant Program Officer 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.

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

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:

- A. James Hicks, Program Director, 815 N, telephone: (703) 292-8640, fax: (703) 292-9018, email: ahicks@nsf.gov
- Tasha R. Inniss, Program Director, 815 N, telephone: (703) 292-4684, email: tinniss@nsf.gov
- Maurice Dues, Program Specialist, 815 N, telephone: (703) 292-7311, fax: (703) 292-9018, 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, fax: (703) 292-9018, 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:

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Reports Clearance Officer
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