

# **Alliances for Broadening Participation in STEM (ABP)**

**Louis Stokes Alliances for Minority Participation (LSAMP), Bridge to the Doctorate (BD), Alliances for Graduate Education and the Professoriate (AGEP)**

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## **Program Solicitation**

**NSF 06-552**

### **Replaces Document(s):**

**NSF 03-520, NSF 04-575 and NSF 05-585**



**National Science Foundation**

Directorate for Education & Human Resources  
Division of Human Resource Development

### **Letter of Intent Due Date(s) (required):**

June 15, 2006

AGEP only

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

June 30, 2006

AGEP

October 15, 2006

LSAMP

May 05, 2006

BD (Supplements to LSAMP)

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## **REVISION NOTES**

In furtherance of the President's Management Agenda, in Fiscal Year 2006, NSF has identified programs that will offer proposers the option to utilize Grants.gov to prepare and submit proposals, or will require that proposers utilize Grants.gov to prepare and submit proposals. Grants.gov provides a single Government-wide portal for finding and applying for Federal grants online.

In response to this program solicitation, proposers may opt to submit proposals via Grants.gov or via the NSF FastLane system. 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.3 of the Grant Proposal Guide provides additional information

on collaborative proposals.

This solicitation combines the Louis Stokes Alliances for Minority Participation (LSAMP) program and its Bridge to the Doctorate (BD) activity with the Alliances for Graduate Education and the Professoriate (AGEP) program. For clarity, the name Alliances for Broadening Participation in STEM is used to represent all three programs encompassed by this combined solicitation. This document replaces [NSF 03-520](#), [NSF 04-575](#) and [NSF 05-585](#).

## SUMMARY OF PROGRAM REQUIREMENTS

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### General Information

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#### Program Title:

Alliances for Broadening Participation in STEM (ABP)  
Louis Stokes Alliances for Minority Participation (LSAMP), Bridge to the Doctorate (BD), Alliances for Graduate Education and the Professoriate (AGEP)

#### Synopsis of Program:

The two programs and one supplemental activity included under the Alliances for Broadening Participation in Science and Engineering (ABP) solicitation seek to increase the number of students successfully completing quality degree programs in science, technology, engineering and mathematics (STEM). Particular emphasis is placed on supporting groups that historically have been underrepresented in STEM: African Americans, Alaskan Natives, American Indians, Hispanic Americans and Native Pacific Islanders. ABP support begins at the baccalaureate level with the Louis Stokes Alliances for Minority Participation (LSAMP) program. For eligible students, significant financial support is continued for two years of graduate study via the Bridge to the Doctorate (BD) activity. Rounding out the ABP cluster are Alliances for Graduate Education and the Professoriate (AGEP), which further the graduate education of minority students through the doctorate level, preparing them for fulfilling opportunities and productive careers as STEM faculty and research professionals.

#### Cognizant Program Officer(s):

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

- 47.076 --- Education and Human Resources

### Award Information

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**Anticipated Type of Award:** Other Grant Cooperative Agreements and Supplements

**Estimated Number of Awards:** 18 to 23 This includes 3 to 4 LSAMP Cooperative Agreements of up to \$5 M each; 14 to 17 BD supplements of up to \$1 M each; and 1 to 2 AGEP Cooperative Agreements of up to \$5 M each.

**Anticipated Funding Amount:** \$43,000,000 This includes \$17 M over 5 years for LSAMP, \$17 M over 2 years for BD, and \$9 M over 5 years for AGEP pending the availability of funds.

### Eligibility Information

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**Organization Limit:**

None Specified

**PI Limit:**

None Specified

**Limit on Number of Proposals per Organization:**

None Specified

**Limit on Number of Proposals per PI:**

None Specified

**Proposal Preparation and Submission Instructions**

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**A. Proposal Preparation Instructions**

- **Letters of Intent:** Submission of Letters of Intent is required. Please see the full text of this solicitation for further information.
- Full proposals submitted via FastLane:
  - Grant Proposal Guide (GPG) Guidelines apply
- 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/bfa/dias/policy/docs/grantsgovguide.pdf>) To obtain copies of the Application Guide and Application Forms Package: click on the Apply tab on the Grants.gov website, 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.

**B. Budgetary Information**

- **Cost Sharing Requirements:** Cost Sharing is not required by NSF.
- **Indirect Cost (F&A) Limitations:** The following limitations apply to BD supplements only. The NSF contribution to graduate student stipends will be \$30,000 per year (12 months) for each of twelve students. Successfully matriculating graduate students are expected to receive a second year stipend at this dollar support level. NSF will provide a cost-of-education allowance to the institution for tuition, health insurance, and other normal fees of \$10,500 per year for each of twelve students. NSF will provide a flat \$15,000 allowance per award in lieu of indirect costs. Graduate stipends should be listed on Line F, "Participant Support," on the proposal budget.
- **Other Budgetary Limitations:** Not Applicable

**C. Due Dates**

- **Letter of Intent Due Date(s) (required):**

June 15, 2006

AGEP only

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

June 30, 2006

AGEP

October 15, 2006

LSAMP

May 05, 2006

BD (Supplements to LSAMP)

## **Proposal Review Information Criteria**

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**Merit Review Criteria:** National Science Board approved criteria apply.

## **Award Administration Information**

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**Award Conditions:** Standard NSF award conditions apply

**Reporting Requirements:** Standard NSF reporting requirements apply

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## I. INTRODUCTION

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The Division of Human Resource Development (HRD) serves as the focal point for NSF's agency-wide commitment to broadening participation by all individuals in science and engineering. HRD programs reflect NSF's commitment to developing the resources of the scientific and technological community as a whole and ensuring an adequately trained research and development workforce. To meet the challenges presented by the United States' increasing reliance on science and technology, AGEP and LSAMP support efforts to strengthen the science and engineering education capabilities of participating institutions. In doing so, these programs help to fulfill an important outcome goal of the NSF Strategic Plan (FY 2003-2008): A diverse, competitive, and globally engaged workforce of scientists, engineers, technologists and well-prepared citizens.

More broadly, HRD programs, including Research on Gender in Science and Engineering, Research in Disabilities Education, the Tribal Colleges and Universities Program, Historically Black Colleges and Universities Undergraduate Program, and Centers of Research Excellence in Science and Technology provide coordinated and integrated approaches to developing and leveraging individual talents and institutional infrastructures. Managed synergistically, these programs enable successful transitions from associate and baccalaureate-level study to the attainment of masters and doctoral degrees. Such efforts serve to increase the number of underrepresented minorities, women, and persons with disabilities well prepared for the science and engineering research, education, and workforce of the future.

## II. PROGRAM DESCRIPTION

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The programs and activity encompassed by ABP provide complementary support to institutions of higher learning and minority students seeking baccalaureate and advanced degrees in STEM disciplines. Program goals are accomplished principally through the formation of alliances among institutions of higher education and between academe, industry and the community.

**Louis Stokes Alliances for Minority Participation (LSAMP).** 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. Phase I awards place emphasis on aggregate baccalaureate production. Phase II awards augment the Phase I emphasis with attention to individual student retention and progression to baccalaureate degrees. Phase III awards augment the Phase I and Phase II with attention to aggregate student progression to graduate school entry. Phase IV awards augment LSAMP Alliance efforts by institutionalizing, disseminating and promoting the replication of strategies and collaborative approaches proven successful to transition undergraduate STEM students to graduate STEM programs.

LSAMP activities must produce a demonstrable "near-term" increase in the numbers of STEM graduates and the promise of long-term change in the production of new Ph.D.s and their entrance into productive faculty or research careers. The strategy for implementing these projects must be clear and focused.

LSAMP alliances must be structured to address two interrelated requirements:

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

Successful programmatic approaches include, but are not limited to: (1) devoting careful attention to management and administrative collaboration among participating organizations so as 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 which will be used to compare post-LSAMP minority retention, progression, and graduation rates in STEM fields.

Comprehensive and longitudinal plans are reflected in: (1) the establishment of alliances with members drawn from among community colleges, colleges and universities, school systems, Federal/state/local government agencies, major national laboratories and centers, industry, private foundations, and STEM professional 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 undergraduate degree programs and in preparation for graduate degree programs; and (3) direct student support as

necessary to enable students to attend academic year and summer enrichment activities without unnecessary loss of income.

LSAMP provides latitude to proposers in designing projects to achieve the stated LSAMP goals. The structure and content of proposed projects should be governed by differences in the institutional and organizational capabilities of alliance members, strategies for the formation of the alliance, and characteristics of specific localities. Project specifics may encompass a wide variety of activities. The project activities must form a feasible, logical, and comprehensive effort focused upon improving the undergraduate educational experience. While the primary focus of LSAMP is at the undergraduate level, projects must include activities that affect student advancement through one or more of the critical transition points during STEM education: from high school to college, between 2- and 4-year college, from undergraduate study to the workplace, from undergraduate to graduate school, and from graduate school to faculty. These activities allow the LSAMP program to build linkages between the various sectors of the STEM community and the educational process to increase the flow of students and their advancement rate.

The LSAMP project and program evaluation sections of this solicitation specify that proposals will be evaluated on their potential to increase minority participation in STEM disciplines. NSF strongly encourages potential awardees to target evaluation of these students' participation in LSAMP activities.

The following are specific requirements for support under various phases of LSAMP. First time applicants must apply for Phase I. Phase II applicants must have received a Phase I award or been a partner in a Phase I award. Phase III applicants must have received a Phase II award or been a partner in a Phase II award.

## PHASE I

Phase I awards place emphasis on baccalaureate production.

Alliances competing for Phase I support must define their current baseline production of baccalaureate recipients in STEM fields and commit to a significant increase in B.S. degree production in STEM fields within the five-year award period. Applicants should make a compelling case for the level of increase they define as significant.

## PHASE II

Phase II awards augment the Phase I emphases by addressing individual student retention and progression to baccalaureate degrees.

Alliances completing a Phase I project may apply for Phase II support if they: (1) commit to a significant increase in baccalaureate degree production levels beyond the Phase I goal, (the Phase I goal will be adjusted if the baseline cohort is changed through additions or reductions in the Phase I alliance membership), and (2) submit a clear plan of action to significantly increase individual, not simply aggregate, STEM student retention and progression toward bachelor of science (B.S. or equivalent) degree attainment in Phase II. Applicants should make a compelling case for the levels of increase they define as significant.

Additionally, in order to be supported under Phase II, alliances must maintain a significant portion of their Phase I B.S. degree production goal, or if the Phase I B.S. degree production goal has not been attained, submit a clear plan for attainment of the Phase I goal, and demonstrate progress toward institutionalization of LSAMP strategies and techniques for increased STEM baccalaureate production.

## PHASE III

Phase III awards augment the Phase I and Phase II emphases with attention to aggregate student progression to graduate school entry.

A Phase III award represents an effort to institutionalize achievements developed over the preceding ten years and construct permanent pathways to graduate study for baccalaureate recipients at participating institutions. Entities seeking further support opportunities may be considered and are referred to the Alliances for Graduate Education and the Professoriate (AGEP) program.

Alliances completing a Phase II project may apply for Phase III support if they: (1) define a baseline level of and commit to a significant increase in the number of their previous, current and future baccalaureate recipients entering either a STEM graduate program or a graduate program in teacher education, and (2) sustain the B.S. degree production levels and individual student retention and progression rates specified as Phase II goals (the Phase II goals will be adjusted if the baseline cohort is changed through additions or reductions in the Phase II alliance membership). Applicants should make a

compelling case for the levels of increase they define as significant.

Phase III support of up to \$100,000 annually (one- and two-year awards) is available for support of educational research projects on the baccalaureate attainment in STEM of African Americans, Alaskan Natives, Hispanic Americans, Native Americans, and Native Pacific Islanders. Proposals for LSAMP educational research projects should be based in a research design that incorporates appropriate and proven methodologies and strategies to (1) identify the research questions, (2) implement the collection and analysis of data, and (3) interpret the resulting measures and findings generated by the study. The results should provide convincing evidence of factors (including departmental- and institution-level) facilitating increased minority undergraduate access to STEM careers, including minority baccalaureate degree attainment and persistence of these traditionally underrepresented groups to STEM graduate study. Results should provide educators with practical and successful strategies to promote broader adoption or adaptation of the recommended factors within their educational systems (departments, institutions, alliances).

LSAMP educational research studies should reflect explicit cognizance of the broad variety of institutions of higher education involved and should address the unique challenges and opportunities posed by that variety. Outcomes of the proposed research should be developed with the intent to inform the education community, including faculty, administrators, policymakers, and parents, enabling them to guide better the future development of learning experiences, and foster the retention, and academic success of diverse students in STEM.

Additionally, in order to be supported under Phase III, alliances must maintain a significant portion of the Phase II B.S. degree production and individual student retention goals, or if the Phase II B.S. degree production and individual student retention goals have not been attained, submit a clear plan for attainment of the Phase II goals, and demonstrate institutionalization of LSAMP strategies and techniques for increased STEM baccalaureate production in the absence of further NSF funding.

#### PHASE IV

Phase IV awards augment Phase III emphases on student progression to graduate school with attention to dissemination, replication and documentation of successful LSAMP models and methods.

Phase IV awards seek to disseminate and replicate activities and collaborative networks proven successful to transition undergraduate STEM students to graduate STEM programs. Emphasis is also placed on dissemination and replication of the LSAMP undergraduate intervention model of support for the synergistic efforts of institutional partners to increase access to, and success in, STEM fields. Phase IV Alliances will increase the number of STEM baccalaureate degree graduates that enter graduate STEM programs and increase the number of LSAMP students that obtain doctoral degrees in STEM fields.

Phase IV Alliances must sustain baccalaureate degree production levels achieved during Phases I-III. Phase IV awardees are expected to increase data collection efforts to ascertain the extent to which LSAMP students that enrolled in graduate school remain in the STEM career track. Recognizing the success of the community college sector in attracting students to post secondary education, Phase IV LSAMP Alliances are also encouraged to strengthen and expand the community college component of the LSAMP project. Further, Phase IV awardees are expected to develop and implement an international component for selected LSAMP student participants.

Phase IV support of up to \$100,000 annually is available for one- and two-year educational research projects on underrepresented minority STEM baccalaureate degree attainment as described under Phase III.

**Bridge to the Doctorate (BD).** BD supplements are expected to include effective strategies for recruiting, retaining, educating and graduating the participants. Proposals to BD must provide documentation of past performance at the designated graduate institutional site of retaining, graduating, and placing significant numbers of its underrepresented minority graduates into 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. Tracking of project participants into doctoral degree programs and into the workforce, including the professorate is also expected. Other highly valued activities will include regular BD meetings, mentoring of students, and resources to support annual student participation at professional meetings and seminars intending to focus productive academic efforts, demystify degree programs, and explain the intricacies of available career options. A critical mass of twelve (12) LSAMP graduate students from STEM disciplines is required and will be supported under this supplemental activity. The NSF contribution to graduate student stipends will be \$30,000 per year (12 months) for each of twelve students. Successfully matriculating graduate students are expected to receive a second year stipend at this dollar support level. NSF will provide a cost-of-education allowance to the institution for tuition, health insurance, and other normal fees of \$10,500 per year for each of twelve students. NSF will provide a flat \$15,000 allowance per award in lieu of indirect costs. Graduate stipends should be listed on Line F, "Participant Support," on the proposal budget. All stipend recipients funded under this supplement must be citizens or permanent residents of the United States or its possessions, to be consistent with the LSAMP cooperative agreements.

## PROJECT EVALUATION

It is expected that each LSAMP or BD project will complement its efforts with its own formative evaluation. This evaluation should be the basis for strengthening implementation over the course of the project and for annual reporting to NSF that will be used to justify continued investment in the project. Proposals should provide suggestions of objectives, benchmarks, and indicators of progress that will inform reviewers of the proposers' understanding of essential factors for judging accountability, both quantitative (minority enrollment and Ph.D. production) and qualitative (the process of change in organizational culture).

**Alliances for Graduate Education and the Professoriate (AGEP).** The goal of the AGEP program is to increase the number of underrepresented minority students pursuing advanced study, obtaining doctoral degrees, and entering the professoriate in STEM disciplines (including social sciences). Alliances participating in this program are expected to engage in comprehensive institutional cultural changes that will lead to sustained increases in the conferral of STEM doctoral degrees, significantly exceeding historic levels of performance.

Specific objectives of AGEP are: (1) to develop and implement innovative models for recruiting, mentoring, and advancing minority students in STEM doctoral programs, and (2) to develop effective strategies for identifying and supporting underrepresented minorities who want to pursue academic careers.

## ALLIANCES

Alliances consisting of two or more doctoral degree granting institutions serving the STEM graduate education needs are eligible to submit proposals. One institution must be designated as the lead institution for the project. Institutions in the U.S. and its territories having documented success in translating minority matriculates into degree recipients are strongly encouraged to participate. A single institution may participate in only one alliance. Through the alliance, it is anticipated that the strengths of the respective individual institutions will be maximized to serve AGEP goals. Alliance commitment will be assessed with respect to willingness and ability of participating institutions to align relevant financial and operational resources to the goals articulated by this program. To ensure commitment and the potential for success, the Provost or Graduate Dean of the lead institution should serve as the Principal Investigator (PI). A full explanation should be provided for a PI designation in variance with this agreement.

## ACTIVITIES

The purpose of these awards is to catalyze changes in institutional, departmental, and organizational culture and practices that will result in significant increases in the recruitment, retention, degree conferral, and STEM career (especially academic) entry of minority students. The proposal should clearly describe strategies to ensure effective recruitment, mentoring, retention, and degree completion of minority students. Strategies may include, but are not limited to:

- support for students to attend conferences,
- coordinated recruitment among partner institutions,
- proactive use of faculty in student recruitment,
- development of systemic mentoring and mentor training,
- faculty and student exchange programs,
- specific preparation for the professoriate, and
- more effective career counseling and career placement.

In support of the activities described above, the program provides funding in a variety of cost categories, including:

- provision for faculty release time,
- program coordination and clerical support (partial),
- special workshop/seminar support costs,
- faculty/student travel between institutions (e.g., recruitment, joint research, etc.)
- peer mentoring stipends, and
- evaluation and assessment costs (partial).

Under AGEP, NSF intends to support a portfolio of projects that serve as effective models for addressing these issues. Proposals should clearly describe strategies for increasing minority student admissions; for creating supportive environments for these students at both the institutional and departmental levels; as well as for developing student interest in, and preparation for, academic careers (teaching and other faculty roles). Relevant strategies may include, for example, developing partnerships with undergraduate institutions that produce large numbers of minority STEM majors (e.g., Historically Black Colleges and Universities (HBCUs), Hispanic-Serving Institutions (HSIs), Tribal Colleges and Universities (TCUs)); providing underrepresented minority undergraduates with enriched academic and research experiences that place strong emphasis on obtaining doctorates and pursuing academic careers; and/or developing student networks or mentoring programs at the undergraduate and/or graduate levels. Projects are also strongly encouraged to develop linkages with Louis

Stokes Alliances for Minority Participation (LSAMP) projects, which also produce large numbers of minority STEM graduates. The activities described are merely illustrative of the broad range of activities that are possible under AGEP. Project strategies that do not specifically address the AGEP goals will not be considered competitive. The AGEP program stresses the building of a well-documented knowledge base of successful strategies.

## DISCIPLINES

Projects involving any of the science, technology, engineering and mathematics (STEM) fields normally supported by NSF are eligible. Projects are expected to be comprehensive, broadly covering STEM departments. All participating departments must be explicitly identified in the proposal. Multiple STEM departments must be involved at AGEP institutions, and additional departments can be transitioned in over the 5-year cooperative agreement.

## PROJECT EVALUATION

It is expected that each AGEP project will complement its efforts with its own formative evaluation. This evaluation should be the basis for strengthening implementation over the course of the project and for annual reporting to NSF that will be used to justify continued investment in the project. Proposals should provide suggestions of objectives, benchmarks, and indicators of progress that will inform reviewers of the proposers' understanding of essential factors for judging accountability, both quantitative (minority enrollment and Ph.D. production) and qualitative (the process of change in organizational culture). This evaluation must show an effective process by which student progress will be assessed on an annual basis. Indicators of cultural changes include changes in policies, practices, and programs at the graduate school office or departmental levels. Changes can occur with student recruitment, admissions, and selection processes, academic support, and socialization to profession.

## PROGRAM EVALUATION

Awardees will be required to participate in a program-level evaluation by which NSF can assess quantitative gains in relevant measures for underrepresented minority students and make qualitative assessments of the process of change. Shortly after awards have been made, project evaluators may be asked to assist NSF contractors in developing a program evaluation that will mutually benefit the agency and project participants. AGEP projects are expected to have the capability of collecting and analyzing data derived from program evaluation activities. AGEP projects must set (and meet) measurable goals and collect evidence (disaggregated by ethnicity, gender, and discipline) to determine progress toward the AGEP goal of significantly increasing the number of underrepresented minorities attaining doctoral degrees in STEM disciplines. Evaluation programs should also measure early career progression of doctoral recipients.

## ALLOWABLE STUDENT SUPPORT

Student support is allowable, but AGEP is not intended to be a fellowship program. If financial support is requested, proposals must clearly explain the need being addressed, as well as student recruitment, selection and accountability criteria. Allowable student support is generally limited to financial support for employing team building principles (e.g., collaborative learning experiences, small group clustering in academic sections, structured work-study groups), individual skill development (e.g., participation in special seminars and colloquia), involvement in research (e.g., stipends or salary for academic-year or summer research programs, and related personal career counseling and mentoring), and other activities designed to enhance student experiences and student/faculty/mentor interaction. AGEP will also provide direct support to enable students to attend summer enrichment activities and to participate in other activities throughout the academic year. Please note that student support can only be provided to U.S. citizens, nationals, and permanent U.S. residents.

## PAST PERFORMANCE INFORMATION

To aid reviewers in assessing past performance of proposing institutions, proposals should include the following baseline data over the 1999-to-present time period (for U.S. citizens, nationals, and permanent U.S. residents only):

1. The sum and the average of the numbers of minority Ph.D. conferrals per year as well as the sum and the averages of minority graduate enrollments for each NSF-supported department, disaggregated by population subgroup (e.g., African American, Hispanic, and Native American),
2. Annual total and minority baccalaureate and master's degree conferrals for departments of the submitting alliance institutions, and
3. Annual numbers of underrepresented minority students who have left the same programs without completing their degrees.

### III. AWARD INFORMATION

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NSF expects to make the following type of award(s): Cooperative Agreements and Supplements. The estimated number of awards will be 4-6 Cooperative Agreements and 14-17 Supplements. This includes 3-4 LSAMP Cooperative Agreements of up to \$5 M each; 14-17 BD supplements of up to \$1 M each; and 1-2 AGEP Cooperative Agreements of up to \$5 M each. The anticipated funding amount is \$43,000,000: \$17 M over 5 years for LSAMP, \$17 M over 2 years for BD, and \$9 M over 5 years for AGEP pending the availability of funds.

### IV. ELIGIBILITY INFORMATION

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The categories of proposers identified in the [Grant Proposal Guide](#) are eligible to submit proposals under this program solicitation.

**Organization Limit:**

None Specified

**PI Limit:**

None Specified

**Limit on Number of Proposals per Organization:**

None Specified

**Limit on Number of Proposals per PI:**

None Specified

### V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

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#### A. Proposal Preparation Instructions

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**Letters of Intent (*required*):**

Letters of Intent (LOI) are required only for the AGEP program. The LOI must be submitted via FastLane using the Letters of Intent module in FastLane, even if the full proposal will be submitted via grants.gov. The LOI should contain the PI and co-PIs names, a proposed title, a list of possible participating organizations (if applicable), and a synopsis that describes the work in sufficient detail to permit an appropriate selection of reviewers.

**Letter of Intent Management Conditions:**

When submitting a Letter of Intent through FastLane in response to this Program Solicitation please note the conditions outlined below:

- SPO Submission is Not Required when submitting Letters of Intent
- Submission of multiple Letters of Intent are Not allowed

**Full Proposal 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](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 [pubs@nsf.gov](mailto:pubs@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/bfa/dias/policy/docs/grantsgovguide.pdf>). 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 [pubs@nsf.gov](mailto:pubs@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.3 of the Grant Proposal Guide provides additional information on collaborative proposals.

The following information supplements the GPG guidelines. In order to be properly identified and routed by program staff, all proposals to ABP must identify the applicable program abbreviation and its associated program element code in the title and project summary. This information is as follows:

LSAMP: program element 9133

BD: program element 9133

AGEP: program element 1515

Proposals failing to clearly identify the appropriate program and program element may be returned without review at the discretion of NSF program staff.

## B. Budgetary Information

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**Cost Sharing:** Cost sharing is not required by NSF in proposals submitted under this Program Solicitation.

**Indirect Cost (F&A) Limitations:** The following limitations apply to BD supplements only. The NSF contribution to graduate student stipends will be \$30,000 per year (12 months) for each of twelve students. Successfully matriculating graduate students are expected to receive a second year stipend at this dollar support level. NSF will provide a cost-of-education allowance to the institution for tuition, health insurance, and other normal fees of \$10,500 per year for each of twelve students. NSF will provide a flat \$15,000 allowance per award in lieu of indirect costs. Graduate stipends should be listed on Line F, "Participant Support," on the proposal budget.

## C. Due Dates

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- **Letter of Intent Due Date(s) (required):**

June 15, 2006

AGEP only

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

June 30, 2006

AGEP

October 15, 2006

LSAMP

May 05, 2006

BD (Supplements to LSAMP)

## D. FastLane/Grants.gov Requirements

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- **For Proposals Submitted Via FastLane:**

Detailed technical instructions for proposal preparation and submission via FastLane are 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](mailto: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 solicitation.

**Submission of Electronically Signed Cover Sheets.** The Authorized Organizational Representative (AOR) must electronically sign the proposal Cover Sheet to submit the required proposal certifications (see Chapter II, Section C of the Grant Proposal Guide for a listing of the certifications). The AOR must provide the required electronic certifications within five working days following the electronic submission of the proposal. Proposers are no longer required to provide a paper copy of the signed Proposal Cover Sheet to NSF. Further instructions regarding this process are available on the FastLane Website at: <http://www.fastlane.nsf.gov/>.

- **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. The Grants.gov's Grant Community User Guide is a comprehensive reference document that provides technical information about Grants.gov. Proposers can download the User Guide as a Microsoft Word document or as a PDF document. The Grants.gov User Guide is available at: <http://www.grants.gov/CustomerSupport>. In addition, the NSF Grants.gov Application Guide provides additional technical guidance regarding 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](mailto: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.

## VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

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Proposals received by NSF are assigned to the appropriate NSF program and, if they meet NSF proposal preparation 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 who are experts in the particular fields represented by the proposal. These reviewers are selected by Program Officers charged with the 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 with the proposer.

## **A. NSF Merit Review Criteria**

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All NSF proposals are evaluated through use of the two National Science Board (NSB)-approved merit review criteria: intellectual merit and the broader impacts of the proposed effort. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two NSB-approved merit review criteria are listed below. The criteria include considerations that help define them. These considerations are suggestions and not all will apply to any given proposal. While proposers must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which the reviewer is qualified to make judgements.

### **What is the intellectual merit of the proposed activity?**

How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of the prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

### **What are the broader impacts of the proposed activity?**

How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

NSF staff will give careful consideration to the following in making funding decisions:

### ***Integration of Research and Education***

One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

### ***Integrating Diversity into NSF Programs, Projects, and Activities***

Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- 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.

## **B. Review and Selection Process**

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Proposals submitted in response to this program solicitation will be reviewed by Adhoc Review or Panel Review.

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. 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 is striving to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. The time interval begins on the date of receipt. The interval ends when the Division Director accepts the Program Officer's recommendation.

A summary rating and accompanying narrative will be completed and submitted by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, 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.

In all cases, 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 and 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.

## VII. AWARD ADMINISTRATION INFORMATION

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### A. Notification of the Award

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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 Division 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.A. for additional information on the review process.)

### B. Award Conditions

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An NSF award consists of: (1) the award letter, 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 letter; (4) the applicable award conditions, such as Grant General Conditions (NSF-GC-1); \* or Federal Demonstration Partnership (FDP) Terms and Conditions \* and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreement awards also are administered in accordance with NSF Cooperative Agreement Terms and Conditions (CA-1). Electronic mail notification is the preferred way to transmit NSF awards to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

\*These documents may be accessed electronically on NSF's Website at [http://www.nsf.gov/home/grants/grants\\_gac.htm](http://www.nsf.gov/home/grants/grants_gac.htm). Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from [pubs@nsf.gov](mailto:pubs@nsf.gov).

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, available electronically on the NSF Website at <http://www.nsf.gov/cgi-bin/getpub?gpm>. The GPM is also for sale through the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402. The telephone number at GPO for subscription information is (202) 512-1800. The GPM may be ordered through the GPO Website at <http://www.gpo.gov>.

### C. Reporting Requirements

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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 before the end of the current budget period. (Some programs or awards require more frequent project reports). Within 90 days after expiration of a grant, the PI also is required to submit a final project report.

Failure to provide the required annual or final project reports will delay NSF review and processing of any future funding increments as well as any pending proposals for that PI. 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 FastLane, for preparation and submission of annual and final project reports. Such reports provide information on activities and findings, project participants (individual and organizational) publications; and, other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system. Submission of the report via FastLane constitutes certification by the PI that the contents of the report are accurate and complete.

## VIII. AGENCY CONTACTS

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General inquiries regarding this program should be made to:

- A J. Hicks, Program Director, 815 N, telephone: (703) 292-8640, fax: (703) 292-9019, email: [ahicks@nsf.gov](mailto:ahicks@nsf.gov)
- Roosevelt Y. Johnson, Program Director, 815 N, telephone: (703) 292-4669, fax: (703) 292-9018, email: [ryjohnso@nsf.gov](mailto:ryjohnso@nsf.gov)

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: [fastlane@nsf.gov](mailto:fastlane@nsf.gov).
- Gloria Strothers, Program Specialist, 815 N, telephone: (703) 292-4718, fax: (703) 292-9018, email: [gstrothe@nsf.gov](mailto:gstrothe@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](mailto:support@grants.gov).

### LSAMP and BD

- A. James Hicks, Program Director, Directorate for Education & Human Resources, Division of Human Resource Development, 815 N, telephone: (703) 292-4668, fax: (703) 292-9018, email: [ahicks@nsf.gov](mailto:ahicks@nsf.gov)
- Gloria Strothers, Program Specialist, Directorate for Education & Human Resources, Division of Human Resource Development, 815 N, telephone: (703) 292-4718, email: [gstrothe@nsf.gov](mailto:gstrothe@nsf.gov)

### AGEP

- Roosevelt Johnson, Program Director, Directorate for Education & Human Resources, Division of Human Resource Development, 815 N, telephone: (703) 292-4669, fax: (703) 292-9018, email: [ryjohnso@nsf.gov](mailto:ryjohnso@nsf.gov)
- Cynthia Douglas, Management Operations Assistant, Directorate for Education & Human Resources, Division of Human Resource Development, 815 N, telephone: (703) 292-5175, email: [cdouglas@nsf.gov](mailto:cdouglas@nsf.gov)

## IX. OTHER INFORMATION

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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, MyNSF (formerly the Custom News Service) 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 Regional 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. MyNSF also is available on NSF's Website at <http://www.nsf.gov/mynsf/>.

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

## ABOUT THE NATIONAL SCIENCE FOUNDATION

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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 40,000 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 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: [pubs@nsf.gov](mailto:pubs@nsf.gov)
  - or telephone: (703) 292-7827
  
- **To Locate NSF Employees:** (703) 292-5111

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## 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  
Division of Administrative Services  
National Science Foundation  
Arlington, VA 22230

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