

# Broadening Participation in Computing (BPC)

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## Program Solicitation

NSF 07-548

*Replaces Document(s):*

NSF 06-540



### National Science Foundation

Directorate for Computer & Information Science & Engineering  
Division of Computer and Network Systems  
Division of Computing and Communication Foundations  
Division of Information & Intelligent Systems

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

June 04, 2007

May 21, 2008

Third Wednesday in May, Annually Thereafter

## REVISION NOTES

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In furtherance of the President's Management Agenda, 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](http://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 replaces [NSF 06-540](#). The following items are major revisions to the previous program solicitation:

1. Alliance Extension Grants were added to increase the scope of existing BPC Alliances in terms of funding period as well as participants and/or programs.
2. The description of Alliances and Demonstration Projects was modified to encourage K-12 efforts to utilize successful, existing STEM programs.
3. The Supplement category of awards was discontinued.

## SUMMARY OF PROGRAM REQUIREMENTS

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### General Information

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#### Program Title:

Broadening Participation in Computing (BPC)

#### Synopsis of Program:

The Broadening Participation in Computing (BPC) program aims to significantly increase the number of U.S. citizens and permanent residents receiving post secondary degrees in the computing disciplines, with an emphasis on students from communities with longstanding underrepresentation in computing: women, persons with disabilities, and minorities. Included minorities are African Americans, Hispanics, American Indians, Alaska Natives, Native Hawaiians, and Pacific Islanders. The BPC program seeks to engage the computing community in developing and implementing innovative methods to improve recruitment and retention of these students at the undergraduate and graduate levels. Because the lack of role models in the professoriate can be a barrier to participation, the BPC program also aims to develop effective strategies for encouraging individuals to pursue academic careers in computing and become these role models.

There are three components to the BPC program:

**Alliances.** Broad Alliances of institutions and organizations will design and carry out comprehensive programs that address underrepresentation in the computing disciplines. Alliances will join academic institutions of higher learning with secondary (and possibly middle) schools, government, industry, professional societies, and other not-for-profit organizations. In most cases, Alliances will involve multiple academic institutions of higher learning. Together, the participants will (1) develop and implement interventions that support students, (2) create sustainable changes in culture and practices at the institutional, departmental, and organizational levels, and (3) serve as models and repositories for effective practices to broaden participation. The emphasis will be on activities that have significant impact both in the quality of opportunities afforded to students and in the number of students potentially served. While the focus is on implementations, an Alliance may include complementary research that informs the design of its activities. The leveraging of existing efforts both across and within the underrepresented communities is strongly encouraged.

**Alliance Extensions.** Successful BPC Alliances can propose additional funding to significantly expand the impact of their work. The new funding can overlap with the final year of the Alliance project and can extend it for up to two years. Extensions must increase not just the duration of the Alliance award but also its scope, introducing additional targeted student groups, partners, and/or projects.

**Demonstration Projects.** Demonstration Projects (DPs) are smaller in scope and narrower in focus than Alliance projects. Typically DPs will be pilots of innovative programs that, once fully developed, could be incorporated into the activities of an Alliance. Projects might, for example, be proposed by a single institution or might focus on a specific underrepresented community, a specific point in the academic pipeline, or on a specific impediment to full participation in computing. As in the case of Alliances, complementary, well-defined research aimed at informing the development of the project can be included.

#### Cognizant Program Officer(s):

- Janice Cuny, Program Director, 1175 N, telephone: (703) 292-8489, fax: (703) 292-9010, email: [jcuny@nsf.gov](mailto:jcuny@nsf.gov)
- Harriet G. Taylor, Program Manager, 1175 N, telephone: (703) 292-8950, fax: (703) 292-9010, email: [htaylor@nsf.gov](mailto:htaylor@nsf.gov)

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

- 47.070 --- Computer and Information Science and Engineering

### Award Information

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**Anticipated Type of Award:** Standard Grant or Continuing Grant

**Estimated Number of Awards:** 15

**Anticipated Funding Amount:** \$14,000,000 subject to the availability of funds and the number and quality of submitted proposals.

## Eligibility Information

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### Organization Limit:

Proposals may only be submitted by the following:

- There is no organizational limit. Alliance proposals must include at least one partner that is a degree-granting, academic institution of higher learning located in the U.S., its territories or possessions, or a consortium of such institutions.

### PI Limit:

A person can be a PI or CoPI on at most one Alliance or Alliance Extension proposal (although he or she may serve in other capacities on additional proposals.) The PI on an Extension proposal must be a PI or CoPI on the original BPC Alliance award.

### Limit on Number of Proposals per Organization:

None Specified

### Limit on Number of Proposals per PI:

The PI on an Extension proposal must be a PI or CoPI on the original BPC Alliance award, and at most one Extension can be proposed for an Alliance.

## Proposal Preparation and Submission Instructions

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### A. Proposal Preparation Instructions

- **Letters of Intent:** Not Applicable
- **Full Proposals:**
  - Full Proposals submitted via FastLane: 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](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/bfa/dias/policy/docs/grantsgovguide.pdf>)

### B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required by NSF.
- **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):

June 04, 2007

May 21, 2008

Third Wednesday in May, Annually Thereafter

## Proposal Review Information Criteria

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**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

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

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

## TABLE OF CONTENTS

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### Summary of Program Requirements

- I. **Introduction**
- II. **Program Description**
- III. **Award Information**
- IV. **Eligibility Information**
- V. **Proposal Preparation and Submission Instructions**
  - A. Proposal Preparation Instructions
  - B. Budgetary Information
  - C. Due Dates
  - D. FastLane/Grants.gov Requirements
- VI. **NSF Proposal Processing and Review Procedures**
  - A. NSF Merit Review Criteria
  - B. Review and Selection Process
- VII. **Award Administration Information**
  - A. Notification of the Award
  - B. Award Conditions
  - C. Reporting Requirements
- VIII. **Agency Contacts**
- IX. **Other Information**

## I. INTRODUCTION

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Information technology (IT) is one of the fastest-growing areas of job growth. Department of Labor projections have IT job growth outstripping IT degree production for the current decade. If the U.S. economy is to remain competitive, we must increase the number of students receiving undergraduate and graduate degrees in the computing disciplines. This increase must occur across all segments of our population, but it is particularly important among those groups that historically have not participated at high rates: minorities, women, and persons with disabilities. The under participation of these groups causes a loss of opportunity for individuals, a loss of talent to the workforce, and a loss of diverse perspectives and creativity in shaping the future of technology.

## II. PROGRAM DESCRIPTION

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The Broadening Participation in Computing (BPC) program is intended to significantly increase the number of domestic students receiving post secondary degrees in the computing disciplines, with an emphasis on those communities that have a longstanding underrepresentation in computing: persons with disabilities, women, and minorities. Included minorities are African Americans, Hispanics, American Indians, Alaska Natives, Native Hawaiians, and Pacific Islanders. Members of these groups participate in computing at rates well below their proportionate representation in the population.

Specifically, the BPC program aims to develop and implement innovative models for recruiting, mentoring, and retaining students in post secondary programs in the computing disciplines, with particular attention to students from underrepresented groups. Since the lack of role models in the professoriate can be a barrier to participation, the program also aims to develop effective strategies for encouraging students who want to pursue academic careers in computing and can serve as these role models. While the focus is on implementation, a project may include complementary research that informs the design of its activities. PIs are encouraged to include social scientists in any research, evaluation, and assessment activities.

NSF intends to support a portfolio of projects under the BPC program that serve as effective models for addressing issues of underrepresentation. The program will have three components: Alliances, Alliance Extensions, and Demonstration Projects. Projects involving broadening participation efforts in any of the fields normally supported by CISE are eligible. Alliance and Alliance Extension projects (but not necessarily Demonstration Projects) should be comprehensive, covering a wide range of computing areas.

### Alliances

The BPC program seeks to build broad Alliances – joining academic institutions of higher learning with secondary (and possibly middle) schools, industry, government, professional societies, and other not-for-profit organizations – to implement comprehensive programs that address underrepresentation in the computing disciplines. In most cases, Alliances will involve more than one academic institution of higher learning. Alliances will (1) develop and implement interventions that support students, (2) create sustainable changes in culture and practices at the institutional, departmental, and organizational levels, and (3) serve as models and repositories for effective practices in broadening participation. The emphasis will be on activities that will have significant impact both in the quality of opportunities afforded to students and in the number of students potentially served. Alliances that leverage BPC efforts both across and within underrepresented communities are strongly encouraged.

The BPC program is not intended to support efforts that involve primarily curriculum development or fellowships, although they can be included as part of a larger set of activities (see below for a description of allowable student support). Research on issues of broadening participation is allowable only if it is narrowly focused on informing the development of the Alliance's implementation projects. Finally, while K-12 interventions are encouraged as part of a broader set of Alliance activities, we expect to fund very few proposals that are primarily focused on K-12. In reviewing K-12 activities, there will be a strong emphasis on projects that leverage successful, existing community and national organizations that provide formal or informal educational programs.

An Alliance consists of two or more institutions or organizations. At least one participant must be a degree-granting, academic institution of higher learning located in the U.S., its territories or possessions, or a consortium of such institutions. One participant must be designated as the lead for the project. Institutions and organizations can be added over the course of the project.

An Alliance should address broadening participation with a coordinated and comprehensive set of implementation projects. Complementary research that informs Alliance activities can be included. Proposals should clearly describe the objectives and strategies with respect to broadening participation, including the participation of students underrepresented in computing. Strategies may include, but are not limited to:

- Development and implementation of outreach programs to create positive engagement of students at all levels in the computing disciplines;
- Development of immersive bridge programs to increase the preparedness of students making critical transitions in the academic pipeline: from high school to college, from 2 to 4 year postsecondary programs, from undergraduate to graduate education, or from graduate school to the professoriate;
- Support for student participation in enriched research and internship programs that are part of a comprehensive set of student mentoring and support activities;
- Development of systemic mentoring and mentor training programs;
- Development of student networks and peer support programs;
- Support for students to attend conferences and mechanisms to maximize the benefits they get from their attendance;
- Development of innovative methods for career counseling and career placement;
- Development of programs and incentives for faculty and student exchanges in support of collaborative research and education activities;
- Support for faculty as they enter the professoriate so that they can become actively and competitively engaged in research; and,
- Research and assessment activities aimed at informing the projects and activities of the Alliance.

These activities are merely illustrative of the broad range of activities that are possible under the program. Other innovative activities are encouraged.

Institutions with documented success in producing minority degrees in the computing disciplines are strongly encouraged to participate. Alliances are encouraged to partner with institutions that graduate large numbers of undergraduate students who are underrepresented in the computing discipline (e.g., Historically Black Colleges and Universities (HBCUs), Hispanic-Serving Institutions (HSIs), Tribal Colleges and Universities, and institutions with strong programs serving persons with disabilities). They are also encouraged to develop linkages with other related NSF-supported programs including (but not limited to) the Louis Stokes Alliances for Minority Participation (LSAMP), the Historically Black Colleges and Universities Undergraduate Program (HBCU-UP), the Tribal Colleges and Universities Program (TCUP), the Alliances for Graduate Education and the Professoriate (AGEP), the program for Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers (ADVANCE), and Cyberinfrastructure-TEAM (CI-TEAM). Where appropriate, and particularly at the K-12 level, Alliances are encouraged to partner with community and national organizations that provide formal or informal education activities.

Competitive projects must include evaluation and assessment components that can effectively document both successes and failures. Awardees must set (and meet) measurable goals and collect evidence to determine progress toward those goals. Awardees must also participate in a BPC program-level evaluation, and supply data (disaggregated by ethnicity, gender, and discipline). Alliance proposals must include a comprehensive dissemination plan.

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

- Provision for faculty release time and summer salary;
- Program coordination and clerical support (partial);
- Special workshop/seminar support costs;
- Participant costs;
- Peer mentoring stipends;
- Faculty/student travel between institutions (for recruitment, joint research, etc.); and,
- Evaluation and assessment costs.

BPC is not intended to be a fellowship program. Allowable student support is limited to individual skill development (e.g. participation in special seminars and colloquia or bridge/transition programs), involvement in research (e.g. stipends or salaries for academic year or summer research programs), related personal career counseling and mentoring, and other activities designed to enhance student experiences and student/faculty/mentor interaction. If financial support is requested, proposers must clearly explain the need being addressed, as well as student recruitment, selection, and accountability criteria. Further, the program is not intended to fund faculty research programs except where that support is given to junior faculty to increase their potential for participating competitively in the research community with the aim of increasing the pool of role models and mentors available to students from underrepresented groups. BPC program funds are not intended to replace funding for existing programs. In each case, funding requested must be clearly justified as necessary to the successful completion of the project. Budgets and proposed projects should be appropriate for the stage of development of the Alliance.

### **Alliance Extensions**

Successful BPC Alliances can propose additional funding to significantly expand the impact of their work. The new funding can overlap with the final year of the Alliance project and can extend it for up to two years. Extensions must increase not just the duration of the Alliance project but also its scope, introducing additional targeted student groups partners, or projects.

Emphasis will be on scaling: expanding efforts to include new partners or assisting others outside of the Alliance in implementing Alliance activities within their own organizations. Proposed activities should fall within the scope of those described for Alliances above.

To be eligible for an Extension, an Alliance must have their second year Site Visit successfully completed by the time of the award. An Alliance can participate in at most one Extension proposal per competition and they can receive at most one Extension for a single Alliance award.

### **Demonstration Projects**

The Demonstration Project (DP) component seeks to develop innovative projects and strategies that could be effectively adopted by BPC Alliances. Typically Demonstration Projects will be pilots which, if proven successful, could be scaled for larger impact. It is anticipated that these projects will have a smaller scope and a more narrow focus than Alliance projects. They might be proposed by a single institution or target, for example, a specific point in the academic pipeline, or a single impediment to full participation in computing. It is possible for a DP to be focused entirely on K-12 although we expect to fund very few of those. In reviewing K-12 activities, there will be a strong emphasis on projects that leverage successful, existing community and national organizations that provide formal or informal educational programs. As in the case of Alliances, Demonstration Projects can include complementary research aimed at informing the development of the project. Where appropriate, DPs can be proposed in the context of an existing Alliance.

Proposed Demonstration Projects should fall within the scope of Alliance activities as described above. Proposers should demonstrate an understanding of the issues involved in underrepresentation and a commitment to addressing them. Unlike the Alliance awards, Demonstration Project awards may be made to a single institution or organization. Like Alliances, projects must have clearly defined objectives and strategies with respect to underrepresented groups served, and they must include strong evaluation and assessment components that document both their successes and failures.

## **III. AWARD INFORMATION**

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The BPC program will make three kinds of awards:

- Alliance Awards can range from \$200,000 to 750,000 per year for three years; the maximum award will be \$2,000,000.
- Alliance Extension Awards can range from \$200,000 to 750,000 per year for three years; the maximum award will be \$2,000,000.
- Demonstration Projects will range up to \$200,000 per year for three years; average award will be \$500,000.

Approximately \$14 million in awards will be made each year, pending availability of funding and the quality of the proposals.

## **IV. ELIGIBILITY INFORMATION**

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### **Organization Limit:**

Proposals may only be submitted by the following:

- There is no organizational limit. Alliance proposals must include at least one partner that is a degree-granting, academic institution of higher learning located in the U.S., its territories or possessions, or a consortium of such institutions.

### **PI Limit:**

A person can be a PI or CoPI on at most one Alliance or Alliance Extension proposal (although he or she may serve in other capacities on additional proposals.) The PI on an Extension proposal must be a PI or CoPI on the original BPC Alliance award.

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

None Specified

### Limit on Number of Proposals per PI:

The PI on an Extension proposal must be a PI or CoPI on the original BPC Alliance award, and at most one Extension can be proposed for an Alliance.

## V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

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### A. Proposal Preparation Instructions

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**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](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 instructions supplement the GPG or NSF Grants.gov Application Guide guidelines.

**Proposal Title.** To assist NSF staff in sorting proposals for review, proposal titles should begin with an acronym that identifies the solicitation being addressed.

- "BPC-A:" for Alliances,
- "BPC-AE:" for Alliance Extensions, and
- "BPC-DP:" for Demonstration Projects.

### Project Description Page Limit.

Standard page limits apply for Demonstration Project proposals. The body of the project description of an Alliance or Alliance Extension proposal must fit within the standard 15 page limit but an additional 1 to 5 pages can be included for Results from Prior NSF support.

**Project Description Content.** Project descriptions should include the following sections.



- **Project Goals and Outcomes.** Clearly describe the goals and anticipated outcomes of the proposed project. Project goals should be clearly informed by the participating organizations' demonstrated knowledge of factors affecting the successful recruitment and retention of students from the underrepresented communities through undergraduate study, graduate study, and academic career entry. For Alliance Extensions, also describe the accomplishments of the existing Alliance and clearly distinguish the new work and its expected impact.
- **Implementation Plan.** Describe in detail the activities to be undertaken to realize the project goals and anticipated outcomes.
  - Highlight the potential for successfully aligning with similar programs and efforts (NSF-supported or otherwise) within and across the targeted communities to ensure a comprehensive, integrated effort.
  - Describe the creative, strategic actions that promise significant improvements in underrepresented group participation and retention in computing disciplines.
  - Describe the research base on which the project builds and, if appropriate, describe the research that will further contribute to the knowledge base associated with increasing the participation of underrepresented groups in computing.
  - Describe plans to disseminate the results of the project, both positive and negative.
- **Partnership Plan.** Proposals that are submitted by partnerships must provide evidence of the following:
  - The participating organizations will work together to realize the project goals and that all key stakeholders (including faculty and administrators) participated in project planning and design;
  - The institutional and organizational commitment to the project goals;
  - The participating organizations have had experience in dealing with the non-academic components of undergraduate and graduate education that are necessary to insure the success of underrepresented minorities, persons with disabilities, and women in obtaining computing degrees; and,
  - The commitment of the participating organizations to sustain the proposed institutional and organizational change.
- **Evaluation Plan.** Describe the evaluation plan that will guide the project progress and measure its impact, including a description of the instruments/metrics by which the project leaders will measure, document, and report on the project's progress. Please note that many of the project evaluations will involve human subjects and, therefore, will need Institutional Review Board (IRB) approval from the submitter's institution before funding can be awarded.

## B. Budgetary Information

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**Cost Sharing:** Cost sharing is not required by NSF in proposals submitted to the National Science Foundation.

## C. Due Dates

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

June 04, 2007

May 21, 2008

Third Wednesday in May, Annually Thereafter

## D. FastLane/Grants.gov Requirements

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- **For Proposals Submitted Via FastLane:**

Detailed technical instructions regarding the technical aspects of 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 funding opportunity.

**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. Further instructions regarding this process are available on the FastLane Website at: <https://www.fastlane.nsf.gov/fastlane.jsp>.

- **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.

#### **Additional Review Criteria:**

The following additional review criteria apply to all BPC proposals.

- The degree to which proposers have demonstrated awareness of the issues and remedies of underrepresentation.
- The degree to which the proposal describes a comprehensive evaluation plan.

The following criteria apply to Alliance and Alliance Extension proposals only.

- The degree to which the proposal demonstrates institutional and organizational commitment that the project will be sustainable and part of a comprehensive effort to address underrepresentation.
- The degree to which the proposal includes an effective plan for dissemination.

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

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

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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 (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 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/general\\_conditions.jsp?org=NSF](http://www.nsf.gov/awards/managing/general_conditions.jsp?org=NSF). 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 and other important information on the administration of NSF awards is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, available electronically on the NSF Website at [http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=gpm](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpm).

### 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.

**Additional Reporting Requirements.** BPC Alliance, Alliance Extensions, and Demonstration Project awardees will be expected to participate in a BPC program-level evaluation by which NSF can assess quantitative gains in relevant measures. Shortly after the awards have been made, project evaluators will be asked to assist in developing a program evaluation that will mutually benefit the agency and project participants. The participants will be expected to collect and analyze data (disaggregated by ethnicity, gender, and discipline) for this evaluation. Awardees may also be asked to participate in annual PI meetings to report on their progress.

## VIII. AGENCY CONTACTS

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General inquiries regarding this program should be made to:

- Janice Cuny, Program Director, 1175 N, telephone: (703) 292-8489, fax: (703) 292-9010, email: [jcuny@nsf.gov](mailto:jcuny@nsf.gov)
- Harriet G. Taylor, Program Manager, 1175 N, telephone: (703) 292-8950, fax: (703) 292-9010, email: [htaylor@nsf.gov](mailto:htaylor@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).

- Sharon Glivens, Program Technology Specialist, 1175 N, telephone: (703) 292-8950, fax: (703) 292-9010, email: [sglivens@nsf.gov](mailto:sglivens@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).

## 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

## 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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The National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia 22230, USA  
Tel: (703) 292-5111, FIRS: (800) 877-8339 | TDD: (800) 281-8749

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