

Tribal Colleges and Universities Program (TCUP)

Program Solicitation

NSF 04-602

Replaces Document(s):

NSF 03-592



National Science Foundation

Directorate for Education & Human Resources
Division of Human Resource Development

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

October 18, 2006

for Implementation Proposals only.

April 17, 2006

February, Annually Thereafter

October, Annually Thereafter

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.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Synopsis of Program:

This program provides awards to enhance the quality of science, technology, engineering and mathematics (STEM) instructional and outreach programs at Tribal Colleges and Universities, Alaskan Native-serving Institutions and Native Hawaiian-serving institutions. Support is available for the implementation of comprehensive institutional approaches to strengthen STEM teaching and learning in ways that improve access to, retention within, and graduation from STEM programs. Through this program, assistance is provided to eligible institutions in their efforts to bridge the digital divide and prepare students for careers in information technology, science, mathematics and engineering fields. Proposed activities should be the result of a careful analysis of institutional needs, address institutional and NSF goals, and have the potential to result in significant and sustainable improvements in STEM program offerings. Typical project implementation strategies include curriculum enhancement, faculty professional development, undergraduate research and community service, academic enrichment, infusion of technology to enhance STEM instruction, collaborations, and other activities that meet institutional and community needs.

Cognizant Program Officer(s):

- Lura Chase, Program Director, 815 N, telephone: (703) 292-8682, fax: (703) 292-9018, email: lchase@nsf.gov

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

- 47.076 --- Education and Human Resources

Award Information

Anticipated Type of Award: Other Grant Grants and Cooperative Agreements

Estimated Number of Awards: 9 - Approximately 6 implementation awards resulting from Full Proposals will be awarded as cooperative agreements annually, and approximately 3 planning grants resulting from Planning Proposals will be awarded annually

Anticipated Funding Amount: \$6,000,000 - Approximately \$6 million in FY 2007 pending availability of funds

Eligibility Information

Organization Limit:

Proposals may only be submitted by the following:

- Organizations eligible to submit proposals are Tribal Colleges and Universities, Alaska Native-serving institutions and Native Hawaiian-serving institutions as defined in Section III of this solicitation.

PI Limit:

The Principal Investigator is expected to be the chief academic officer of the institution, or other senior academic officer responsible for oversight and management of curriculum and instructional policies for the institution.

Limit on Number of Proposals per Organization:

Eligible institutions may not receive more than one TCUP Phase I award in any five-year period, although they may participate in other TCUP funding opportunities.

Limit on Number of Proposals per PI:

None Specified

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Not Applicable
- 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:** Not Applicable
- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full text of this solicitation for further information.

C. Due Dates

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

October 18, 2006

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February, Annually Thereafter

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Proposal Review Information Criteria

Merit Review Criteria: National Science Board approved criteria apply.

Award Administration Information

Award Conditions: Standard NSF award conditions apply

Reporting Requirements: Standard NSF reporting requirements apply

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I. INTRODUCTION

Programs managed by the Division of Human Resource Development (HRD), within the Directorate for Education and Human Resources, seek to increase the participation and advancement of underrepresented groups and institutions at every level of science, technology, engineering, and mathematics (STEM) education and research. In so doing, these programs contribute to attainment of an 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.

The programs of the ethnic diversity continuum provide coordinated and integrated approaches to developing and leveraging individual talents and institutional infrastructures in order to increase substantially the number of underrepresented ethnic minorities well prepared for participation and leadership in the STEM workforce. Managed synergistically, these programs enable seamless student transitions from undergraduate study at the associate and baccalaureate levels to attainment of doctoral degrees, as well as strengthen the research vigor and competitiveness of graduate students and faculty at participating institutions.

Although programs in the Division of Human Resource Development focus primarily on underrepresented communities, all NSF programs encourage proposals that incorporate this goal. See the NSF Guide to Programs for descriptions of all NSF funding opportunities.

II. PROGRAM DESCRIPTION

The Tribal Colleges and Universities Program (TCUP) promotes sustainable improvement of undergraduate science, technology, engineering and mathematics (STEM) instructional and outreach programs, with an emphasis on the expansion of course and degree offerings, undergraduate research opportunities, and the use of information technologies at Tribal

Colleges and Universities, Alaskan Native-serving institutions and Native Hawaiian-serving institutions. Support is available for the implementation of comprehensive institutional approaches to strengthen STEM teaching and learning in ways that improve access to, retention within, and graduation from STEM disciplines. Through this program, assistance is provided to eligible institutions in their efforts to bridge the digital divide and prepare students for careers in information technology, science, mathematics and engineering fields. The National Science Foundation allows flexibility in the design of efforts to improve undergraduate STEM education. Proposed activities should be the result of a careful analysis of institutional needs, address institutional and NSF goals, and have the potential to result in significant and sustainable improvement of STEM programs.

Funding through TCUP is available as (1) Planning or (2) Implementation projects, which are described below. Implementation projects can be of several types, such as Phase I, Collaborative Partnerships, STEM Teachers of Excellence Education Projects, or Phase II. Typical project implementation strategies (described in greater detail below) include course, degree, and curriculum development, reform and improvement; faculty professional development; the integration of active learning pedagogies into the STEM curriculum; community outreach; student support, academic enrichment activities and internships; student recruitment, retention and placement; infusion of technology to enhance STEM instruction; collaborations with four-year institutions, business and industry; strengthening the abilities of technical support personnel; and other activities that meet institutional and community needs. While the primary focus of TCUP is at the associate and baccalaureate degree levels, projects are encouraged to consider components that promote precollege interest in STEM areas, and that address student advancement through the critical transition points during the STEM academic and career pathways: the transition between high school and college; between 2- and 4-year colleges; between undergraduate and graduate studies; and from college to the workplace.

1. **PLANNING PROJECTS:** Institutions that are eligible to submit proposals to the Tribal Colleges and Universities Program may, but are not required to, submit a proposal for a planning grant to help the institution conduct an assessment of its STEM infrastructure and develop an institutional plan to enhance its STEM program. TCUP planning grants typically provide up to \$50,000 for up to one year. These awards are non-renewable. Planning grants will be supported to fund institutional self-assessments and the development of action plans to enhance STEM instruction. Proposals should (1) describe the current status of the institution's STEM program, infrastructure, including faculty and facilities capacity, and relevant student information, such as enrollment and academic success (graduation, matriculation, employment); and, (2) describe the activities to be supported through the planning grant, including surveys, research, consultations, program evaluations, and development of models or strategic plans to improve STEM instruction. Planning grant activities suitable for support include, but are not limited to faculty reassigned time or released time to participate in appropriate project activities; visiting faculty or consultants; computer services; and, professional travel that will contribute to the quality of the planning effort.

2. IMPLEMENTATION PROJECTS:

PHASE I: TCUP will accept proposals from eligible institutions that have completed the necessary planning activities (with or without NSF support) to develop an appropriate strategy for STEM instructional improvement. Phase I projects will typically be for up to five years, not to exceed \$2,500,000, and should actively engage the faculty members that will be responsible for the successful completion of the proposed work.

COLLABORATIVE PARTNERSHIPS: Recognizing that the colleges and universities that serve indigenous students have historical, philosophical, and thematic links, TCUP will accept proposals for collaborative projects between 2 or more TCUP-eligible institutions. Projects must build upon the current TCUP effort or must include strategies for strengthening the STEM programming in those institutions that do not have a TCUP award. These projects should not be viewed as isolated efforts but should include shared efforts on behalf of curriculum development, faculty development opportunities, and student support and recruitment.

STEM Teachers of Excellence Education Projects (STEEP): In recognition of the need for excellent precollege and community college science, math, technology and engineering teachers and faculty, TCUP will support the development of baccalaureate degree programs in elementary or secondary education. Elementary education projects must have a strong emphasis on standards-based, hands-on, relevant science and math; secondary education projects must contain the equivalent of a minor in one or more of the NSF STEM disciplines or an integrated science curriculum. Eligible activities include faculty support, educational hardware and software, curriculum materials support, stipends for student fellowships, and enhancements of library holdings necessary to support the degree programs. Only those institutions that have received a Phase I award are eligible to propose under STEEP.

PHASE II: For those institutions that have satisfactorily completed the goals and activities originally proposed in Phase I, TCUP will accept proposals for continued support of a logical extension of the original work. Successful proposals must include quantitative evidence of the impact of the original award on student enrollment, academic success, articulation, or employment. Faculty appointments made under Phase I are not eligible for support. Phase II projects will typically be for up to three years, not to exceed \$1,500,000.

The following examples illustrate the possible scope of Implementation project activities, as well as some aspects of project design to consider:

CURRICULUM ENHANCEMENT: Course and curriculum development or enhancement are critical to achieve institution-wide improvements in undergraduate STEM education. Proposers may include plans to strengthen and update the STEM curricula through the development, adaptation and implementation of instructional materials, experiences and practices. Supportable activities include, but are not limited to:

- development and introduction of STEM program or degree offerings;
- restructuring the STEM curricula, courses and laboratories through the incorporation of advances in science and engineering knowledge, research-based teaching and learning techniques and practices, and through the integration of technology into the curricula;
- revision of STEM gate-keeping and bottleneck courses based on appropriate content and performance standards; and
- integration of student research, community service and other active learning pedagogies into the curriculum.

FACULTY DEVELOPMENT: A well-trained faculty with continuous learning opportunities remains an integral part of a strong institutional infrastructure and positively impacts the quality of undergraduate education. Faculty development activities suitable for TCUP support include, but are not limited to, the following:

- sabbaticals and exchange programs to enhance research competencies and knowledge of recent technological developments;
- professional development workshops on innovative teaching practices and assessment;
- visiting faculty, including industry practitioners;
- special seminars to enhance disciplinary knowledge;
- faculty reassigned time or released time to participate in appropriate STEM curricular reform and academic enhancement activities;
- opportunities to participate in research and community service in conjunction with student experiences; and
- faculty reassigned time or released time to mentor students.

UNDERGRADUATE TRAINING AND RESEARCH EXPERIENCES: Stipends may be provided to students (U.S. citizens and permanent residents, only) at eligible institutions who are engaged in STEM related research or training activities or appropriate community service. Research experiences may be on campus with local investigators or at off-campus sites (e.g., industrial, academic, and governmental research laboratories). Community service may be provided off-campus. Activities suitable for TCUP support include, but are not limited to, the following:

- development of appropriate partnerships with other academic institutions, industrial laboratories, national laboratories, or NSF-supported research centers to ensure quality student training and research experiences that complement academic studies;
- meaningful internships or cooperative education opportunities related to students' skill development at appropriate off-campus sites;
- student internships at local schools to provide technical training or support; and
- students serving as resources to help the local community meet technology-related goals and objectives based on community needs.

ADVISORY COMMITTEE: Implementation projects should establish an external advisory committee, normally chaired by the college or university President or other ranking institutional representative not designated as key personnel. This committee will help guide the implementation and assessment of project activities. The size of the committee is left to the discretion of the proposers. However, there should be adequate representation from partner institutions, industry and the local community. Prospective candidates for the committee should be identified in the Project Description. The project leadership may not serve on the advisory committee.

PROJECT STAFF: Project staffing requirements will depend on the design, scope and the discipline focus. General NSF provisions allow salaries of project staff to be requested as direct costs. However, proposals should include plans to sustain project activities after NSF funding has ended, particularly including specific commitments of the institution to sustain salaries of any faculty added through TCUP funding. In addition to the Principal Investigator, who is normally the Chief Academic Officer of the institution, typical project organization consists of a Project Director and a Steering Committee with faculty from the relevant disciplines or programs.

PROJECT LENGTH: Implementation projects will be funded up to five years and should be designed to produce significant and sustainable improvements in undergraduate STEM education. Information bearing on project implementation, faculty participation and student participation and performance will be required on an annual basis.

Planning grants will have a duration of up to one year. In support of the total time-frame, both types of proposals must include a detailed management plan and activity timeline covering the entire duration of the project, describing major activities, milestones and the responsibilities of each participating academic program or partner organization.

PROJECT SIZE: Ideally, implementation projects should seek to address an identified institutional STEM priority area. Proposers should clearly state the numbers of faculty and students that will benefit from project activities. The scope of the project should be clearly defined within the context of the institution.

III. AWARD INFORMATION

Estimated program budget, number of awards, and average award size/duration are subject to the availability of funds.

The estimated number of awards is 6 implementation awards and 3 planning grants each year.

Phase I, Collaborative Partnerships, and STEEP awards will be up to \$500,000 per year for up to five years. Phase II awards, will be up to \$500,000 per year for up to three years. Phase I, Collaborative Partnerships, and Phase II awards will be managed as cooperative agreements. STEEP awards will be managed as grants.

Funds should be budgeted for the principal investigator and project director of an implementation award to attend a two-day grantee meeting in the Washington, DC area each award year. Implementation awards should budget funds for the project leadership to participate in two reverse site visits to NSF during the award period.

Support is also available for planning grants of up to \$50,000 for up to one year to fund institutional self assessments and the development of action plans to enhance STEM programming.

IV. ELIGIBILITY INFORMATION

Organization Limit:

Proposals may only be submitted by the following:

- Organizations eligible to submit proposals are Tribal Colleges and Universities, Alaska Native-serving institutions and Native Hawaiian-serving institutions as defined in Section III of this solicitation.

PI Limit:

The Principal Investigator is expected to be the chief academic officer of the institution, or other senior academic officer responsible for oversight and management of curriculum and instructional policies for the institution.

Limit on Number of Proposals per Organization:

Eligible institutions may not receive more than one TCUP Phase I award in any five-year period, although they may participate in other TCUP funding opportunities.

Limit on Number of Proposals per PI:

None Specified

Additional Eligibility Info:

Organizations eligible to submit proposals are Tribal Colleges and Universities, Alaskan Native-serving institutions and Native Hawaiian-serving institutions. Multiple campuses of one university system are

normally encouraged to consider collaborative partnership submissions. Executive Order 13021 defines Tribal Colleges and Universities ("tribal colleges") as those institutions cited in section 532 of the Equity in Educational Land-Grant Status Act of 1994 (7 U.S.C. 301 note), and other institution that qualifies for funding under the Tribally Controlled Community College Assistance Act of 1978, (25 U.S.C. 1801 et seq.), and Navajo Community College, authorized in the Navajo Community College Assistance Act of 1978, Public Law 95-471, Title II (25 U.S.C. 640a note). The term "Alaska Native-serving institution" means an institution of higher education that is an eligible institution under section 1058(b) of the Higher Education Act; and at the time of submission, has an enrollment of undergraduate students that is at least 20 percent Alaskan Native students. The term "Native Hawaiian-serving institution" means an institution of higher education that is an eligible institution under section 1058(b) of the Higher Education Act; and at the time of submission, has an enrollment of undergraduate students that is at least 10 percent Native Hawaiian students.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

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. 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.

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.

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.

Proposals submitted to the Tribal Colleges and Universities Program should include the following information that supplements the GPG and the Grants.gov Application Guide, and, unless otherwise noted, applies to both types of submissions:

1. **INFORMATION ABOUT PRINCIPAL INVESTIGATORS AND CO-PRINCIPAL INVESTIGATORS:** NSF requests information on the gender, race, ethnicity and disability status of individuals named as PIs/co-PIs on proposals and awards. Except for the required information about current or previous Federal research support and the names(s) of the PI/co-PI, submission of the information is voluntary, and individuals who do not wish to provide the personal information should check the box provided for that purpose. Refer to the Grant Proposal Guide (GPG) for guidelines. For proposals submitted via Grants.gov, this information is submitted on the R&R Personal Data Form. Refer to the Grants.gov Application Guide for additional instructions.
2. **COVER SHEET:** In FastLane, under "NSF Unit Consideration," select "Tribal Colleges and Universities Program" as

the program to consider the proposal. Select "DIVISION OF HUMAN RESOURCE DEVELOPMENT" as the division to consider the proposal. If the proposal is for a planning grant, for proposals submitted via both FastLane and Grants.gov, begin the project title with the words "Planning Grant for..."

3. **PROJECT SUMMARY:** Not more than one page in length, the summary should consist of a self-contained description of the activities that would be implemented if the proposal were funded.
4. **TABLE OF CONTENTS:** A Table of Contents is automatically generated for the proposal. **PROJECT DESCRIPTION:** This section is the main body of the proposal and may not exceed 15 pages. The description of the project should:
 - a. clearly state project goals, objectives, and a timeline for proposed activities with an indication of their anticipated impact;
 - b. provide a clear picture of the current status of the institution's STEM infrastructure and an institutional plan to enhance the STEM program by indicating the anticipated value added by the NSF-supported efforts;
 - c. build on existing research about underrepresented minority participation in the STEM educational continuum;
 - d. describe the expected impact of the project across STEM offerings at the institution;
 - e. describe the management structure that will be used to communicate and facilitate project goals throughout the institution;
 - f. provide a list of external advisory committee members;
 - g. provide evidence of the commitment of the proposing institution to the improvement of undergraduate STEM education including plans and resource alignment strategies to continue elements of the project after NSF funding ends; and
 - h. include an evaluation and assessment plan within the Project Description so that project development and implementation can be monitored at all stages. One of the key objectives of TCUP is to improve the quality of undergraduate STEM education through the development, adaptation and implementation of effective educational techniques and practices to enhance STEM instruction. Accordingly, proposed evaluation and assessment plans should include indicators of progress that address the extent to which:
 - i. educational techniques and practices, shown to be effective elsewhere, are adapted or modified for use at the awardee institution;
 - ii. a plan has been developed to assess the effectiveness of the educational techniques or practices implemented;
 - iii. faculty at the awardee institution have been prepared to use the modified educational techniques or practices;
 - iv. modified techniques or practices have been incorporated into the curriculum;
 - v. innovative courses or program components are developed;
 - vi. the effectiveness of implemented educational techniques, practices, courses or components is assessed;
 - vii. for those projects that acquire equipment, the evaluation should also address the extent to which the equipment has been successfully incorporated into the curriculum; and project activities affect student learning and student access to quality STEM education as defined by measurable quantitative student-based outcomes such as:
 - number of STEM majors involved in active learning activities, research activities, or community service;

- number of STEM majors who have enrolled in and successfully completed newly developed or revised courses or programs;
- rates of successful completion of STEM gate-keeper courses;
- student retention in STEM disciplines;
- number of STEM graduates with grade point averages of 3.0 or higher;
- number of STEM students matriculating into 4-year colleges or graduate programs; and
- number of graduates that enter the STEM workforce.

For information about evaluation methodology, see User-Friendly Handbook for Mixed Method Evaluations ([NSF 97-153](#)).

Appendices are not accepted and will not be reviewed.

Prospective proposers are encouraged to confer with NSF TCUP staff prior to proposal submission.

B. Budgetary Information

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

Other Budgetary Limitations: Funds should be budgeted for the principal investigator and project director of an implementation award to attend a two-day grantee meeting in the Washington, DC area each award year. Implementation awards should budget funds for the project leadership to participate in two reverse site visits to NSF during the award period.

C. Due Dates

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

October 18, 2006

for Implementation Proposals only.

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D. FastLane/Grants.gov Requirements

- **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. 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. 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

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

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

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

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program 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

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. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from 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

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

General inquiries regarding this program should be made to:

- Lura Chase, Program Director, 815 N, telephone: (703) 292-8682, fax: (703) 292-9018, email: lchase@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@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.

For questions related to the use of FastLane, contact:

- Gloria Strothers, Program Specialist, Directorate for Education & Human Resources, Division of Human Resource Development, 815 N, telephone: (703) 292-4718, fax: (703) 292-9018, email: gstrothe@nsf.gov
- Victoria A. Smoot, Financial Operation Specialist, Directorate for Education & Human Resources, Division of Human Resource Development, 815 N, telephone: (703) 292-4677, fax: (703) 292-9018, email: vsmoot@nsf.gov

For questions related to the use of Grants.gov contact:

- Grants.gov Contact Center: If the Authorized Organizational Representative (AOR) has not received a confirmation message from Grants.gov within 48 hours of submission of the application, please contact via telephone: 1-800-518-

IX. OTHER INFORMATION

The NSF Website provides the most comprehensive source of information on NSF Directorates (including contact information), programs and funding opportunities. Use of this Website by potential proposers is strongly encouraged. In addition, 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

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

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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