Geoscience Teacher Training (GEO-Teach)

Program Solicitation

NSF 06-526

National Science Foundation
Directorate for Geosciences
Division of Atmospheric Sciences
Division of Earth Sciences
Division of Ocean Sciences

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

February 15, 2006

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

April 17, 2006

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Geoscience Teacher Training (GEO-Teach)

Synopsis of Program:

Through its Geoscience Teacher Training (GEO-Teach) program, the Directorate for Geosciences (GEO) at the National Science Foundation (NSF) will support projects designed to improve the quality of geoscience instruction, primarily at middle and high school levels. GEO-Teach projects will provide teachers with easy access to high-quality curricular materials as well as the current state of knowledge, and will implement pre-service teacher training and in-service professional development programs designed to enhance middle and high school students' understanding of and appreciation for the importance of the geosciences.

GEO-Teach projects should emphasize the importance of an Earth system science approach in geoscience education and should promote the integration of content drawn from atmospheric science, Earth science, and ocean science disciplines. The relevance of the geosciences to modern society should be made clear by GEO-Teach products and activities.

The GEO-Teach program is expected to have a transformative effect on geoscience education. GEO-Teach projects should take a leadership role in the geoscience education community by providing services and support to that community. GEO-Teach projects should contribute to development of a common sense of purpose regarding geoscience education among scientists and educators drawn from across the geoscience disciplines.

Cognizant Program Officer(s):

- Jill Leslie Karsten, Program Director for Diversity and Education, Directorate for Geosciences, 705 N, telephone: (703) 292-8500, fax: (703) 292-9042, email: jkarsten@nsf.gov

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

- 47.050 --- Geosciences

Eligibility Information

- **Organization Limit:** There is no limit on organizations that may be the lead organization in a proposal. The participation of multiple organizations is encouraged and should be accommodated through the use of subawards, subcontracts, or mini-grant programs administered by the lead organization.

  Each project will be funded by a single award instrument.

- **PI Eligibility Limit:** Project management teams, consisting of the lead principal investigator, the co-principal investigators, and any other senior personnel, must include representatives of the geoscience research community and the geoscience education community (including secondary school teachers).
- **Limit on Number of Proposals:** An organization or principal investigator may serve as the lead organization or lead investigator respectively on only one proposal submitted in response to this solicitation.

Award Information

- **Anticipated Type of Award:** Cooperative Agreement
- **Estimated Number of Awards:** 1 to 3 - It is anticipated that at least one and no more than three awards will be made as a result of this solicitation. The anticipated duration of the award(s) is five years.
- **Anticipated Funding Amount:** $15,000,000 (over a five year period) - It is anticipated that $3.0 million per year will be available to support projects funded through this solicitation, pending availability of funds.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Submission of Letters of Intent is required. Please see the full text of this solicitation for further information.

- Full proposals submitted via FastLane:

  - Grant Proposal Guide (GPG) Guidelines apply

- Full proposals submitted via Grants.gov:

  - NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov Guidelines apply (Note: The NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: http://www.nsf.gov/bfa/dias/policy/docs/grantsgovguide.pdf) To obtain copies of the Application Guide and Application Forms Package: click on the Apply tab on the Grants.gov website, then click on the Apply Step 1: Download a Grant Application Package and Application Instructions link and enter the funding opportunity number, (the program solicitation number without the NSF prefix) and press the Download Package button.

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required by NSF.
- **Indirect Cost (F&A) Limitations:** Not Applicable.
- **Other Budgetary Limitations:** Not Applicable.

C. Due Dates

- **Letters of Intent *(required):***
  February 15, 2006
- **Full Proposal Deadline Date(s)** (due by 5 p.m. submitter's local time):
  April 17, 2006

Proposal Review Information

- **Merit Review Criteria:** National Science Board approved criteria. Additional merit review considerations apply. Please see the full text of this solicitation for further information.

Award Administration Information

- **Award Conditions:** Standard NSF award conditions apply.
- **Reporting Requirements:** Additional reporting requirements apply. Please see the full text of this solicitation for further information.

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I. INTRODUCTION

The Geoscience Teacher Training (GEO-Teach) program was developed to improve the quality of geoscience instruction, primarily at middle and high school levels. The goal of the program is to ensure that geoscience content is taught broadly and effectively by a highly qualified teacher workforce. GEO-Teach awardees will be expected to assume a leadership role in the geoscience education community by facilitating widespread collaborative efforts to implement high quality educational

practices.

GEO-Teach projects should be designed to:

- provide teachers with easy access to high-quality curricular materials, and
- broadly implement high quality pre-service teacher training programs and in-service professional development opportunities.

In this solicitation the term *geoscience* refers to the scientific disciplines for which basic research funding is available from the Directorate for Geosciences (GEO) at the National Science Foundation (NSF). These disciplines fall into the broad categories of atmospheric science, Earth science, and ocean science. NSF-GEO supports the use of an Earth system science approach to the teaching of geoscience content. This approach requires integration of content from all geoscience disciplines and emphasis on the processes that control behavior of the Earth system.

II. PROGRAM DESCRIPTION

CONTEXT FOR THE PROGRAM

GEO-Teach activities will focus on the training and professional development of middle and high school teachers. This approach to improving the quality of education was recommended by the National Commission on Mathematics and Science Teaching for the 21st Century, which was established and chaired by John Glenn in 1999. According to *Before It's Too Late*, the commission's report to the nation (available on the web at: http://www.ed.gov/inits/Math/glenn/toolate-execsum.html#full):

> "*the most powerful instrument for change, and therefore the place to begin, lies at the very core of education —**with teaching itself**...We are of one mind in our belief that the way to interest children in mathematics and science is through teachers who are not only enthusiastic about their subjects, but who are also steeped in their disciplines and who have the professional training—**as teachers**—to teach those subjects well. Nor is this teacher training simply a matter of preparation; it depends just as much—or even more—on sustained, high-quality professional development.*" (Foreward, pg. 5)

More recently, in July 2005, the Education Commission of the States echoed the findings of the Glenn Commission in its report *Keeping America Competitive: Five Strategies to Improve Mathematics and Science Education* (available on the web at: http://www.ecs.org/clearinghouse/62/19/6219.pdf).

Of all of the Science, Technology, Engineering, and Mathematics (STEM) disciplines supported by NSF, the geosciences are most in need of an increase in the number of highly qualified teachers. The report *Qualifications of the Public School Teacher Workforce: Prevalence of Out-of-Field Teaching 1987-88 to 1999-2000* (available at: http://nces.ed.gov/programs/quarterly/Vol_4/4_3/2_2.asp) indicates that during the 1999-2000 school year approximately 79% of the high school students (grades 9-12) in geology/Earth/space science classes were taught by teachers lacking certification and a major in the field.

The issue of teachers teaching out of field is addressed by the reauthorized Elementary and Secondary Education Act, which is commonly referred to as the No Child Left Behind Act of 2001. No Child Left Behind (NCLB) requires that by the end of the 2005-2006 school year all teachers in core subject areas will be highly qualified. According to the U.S. Department of Education (see: http://www.ed.gov), highly qualified middle and high school teachers are those that:

1. have a bachelor's degree,
2. possess full state certification or license, and
3. can prove that they know each subject they teach.

Teachers (in middle and high school) must prove that they know the subject they teach by:

1. possessing a college major in the subject they teach,
2. completing credits equivalent to a major in the subject,
3. passing a state-developed test,
4. obtaining an advanced certification from the state,
5. completing a graduate degree, or
6. for current teachers only, meet state-mandated requirements based on a combination of teaching experience, professional development, and knowledge in the subject garnered over time in the profession.

NCLB presents the geoscience community with a clear opportunity to increase the effectiveness of the geoscience teacher workforce. To ensure that geoscience content is widely taught at middle and high school levels, new and existing geoscience teachers will need to have access to degree programs and professional development opportunities that will result in highly qualified status.

GENERAL PROGRAM INFORMATION

The goals of the GEO-Teach program are to ensure that geoscience content is taught broadly and effectively at middle and high school levels by a highly qualified teacher workforce and that methods and content are scalable to the national level.

NSF anticipates that GEO-Teach projects will take a leadership role in the geoscience education community by providing support and services to that community in alignment with the program's goal. GEO-Teach projects should be designed to facilitate widespread participation of broad segments of the geoscience research and teaching community to maximize impact of the program.

GEO-Teach awardees will identify and provide easy access to existing high quality educational materials. The principal goal of GEO-Teach awardees should not be to develop new curricular materials, but should be to add value to existing materials by developing resources that will ensure that the existing materials are used effectively.

GEO-Teach projects should be designed to result in widespread implementation of pre-service teacher training and in-service professional development programs that produce highly qualified and effective geoscience teachers. GEO-Teach awardees will disseminate information about best-practice models of teacher training and professional development to the geoscience community at large and will assist the community in extensively replicating successful programs.

GEO-Teach is not intended to develop high-end cyberinfrastructure but rather should leverage other activities such as the resources of the National Science Digital Library (NSDL), of which the Digitial Library for Earth System Education (DLESE) is a component.

In all activities, GEO-Teach projects should emphasize the importance of an Earth system science approach in geoscience education.

III. ELIGIBILITY INFORMATION

The categories of proposers identified in the Grant Proposal Guide are eligible to participate in proposals under this program announcement/solicitation.

The participation of multiple organizations is encouraged and should be accommodated through the use of subawards, subcontracts, or mini-grant programs administered by the lead institution.

Each project will be funded by a single award instrument.

Project management teams, consisting of the lead principal investigator, the co-principal investigators, and any other senior personnel, must include representatives of the geoscience research community and the geoscience education community (including secondary school teachers).

An organization or principal investigator may serve as the lead organization or lead investigator respectively on only one proposal submitted in response to this solicitation.

IV. AWARD INFORMATION

Awards made through the GEO-Teach program will be cooperative agreements. As a condition of award, successful proposers will be required to develop, in consultation with NSF, a list of agreed-upon deliverables and a schedule for realizing those deliverables. This requirement is aimed at achieving a solid mutual understanding of the expected outcomes of the GEO-Teach activity and a timeline for their completion. If an awardee fails to make satisfactory progress toward the goals of their project, funding for their award will be reduced and the award will be phased out.

It is anticipated that at least one and no more than three awards will be made as a result of this solicitation.

It is anticipated that a total of $3.0 million per year will be available to support projects funded through this solicitation, pending availability of funds. The anticipated duration of an award is five years.

GEO-Teach projects will undergo a mandatory critical review and site visit during their second and fourth years. Projects that are deemed successful following the fourth-year critical review and site visit will be eligible to submit a renewal proposal pending availability of funds.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Letters of Intent *(required):*

Letters of intent must be submitted electronically via FastLane. Letters of intent are expected to be brief and should not be developed as preliminary proposals. The information provided to NSF in the letters of intent will be used for planning purposes only. Full proposals may deviate from the information provided in the letters of intent.

Letters of intent should include the information listed below.

- Information about the proposers.
  - Name and affiliation of the lead principal investigator.
  - Names and affiliations of each of the co-principal investigators.
  - Names and affiliations of individuals that will be named in the proposal as other senior personnel.
  - Names of organizations that will partner to conduct the project.

- Information about the proposed project.
  - A maximum of three-pages of description of the major components of the project.
  - A list of the project's goals and the measurable outcomes that will be used to determine the project's level of success in attaining its goals.

- Information about management of the proposed project.
  - A description of the management structure that will be used to conduct, oversee, and guide the project.

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 announcement/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 announcement/solicitation number in the program announcement/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:

A. Collaborative Proposals. All collaborative proposals must be submitted via the NSF FastLane system. This includes collaborative proposals submitted:

- by one organization (and which include one or more subawards); or
- as separate submissions from multiple organizations.

Proposers are advised that collaborative proposals submitted in response to this Program Solicitation via Grants.gov will be requested to be withdrawn and proposers will need to resubmit these proposals via FastLane. (Chapter II, Section D.3 of the Grant Proposal Guide provides additional information on collaborative proposals.)

B. All Other Types of Proposals That Contain Subawards. All other types of proposals that contain one or more subawards also must be submitted via the NSF FastLane system.

Project Description Requirements

The Project Description section of the proposal may not exceed 25 single-spaced pages in length.

The Project Description should include approximately three pages of information about the results of prior research and/or educational activities conducted by the principal investigator and co-principal investigators and show how they are related to the GEO-Teach program.

The main body of the Project Description section should include no more than 15 pages of information that will clearly communicate to reviewers and panelists the major elements of the proposed project. The main body should also include statements of the vision, goals, and intended outcomes of the project. This section should include information, including references to the primary literature, that will demonstrate to reviewers and panelists that the proposers are prepared to accomplish the following tasks.

- Identify a sufficient number of existing high quality geoscience education materials.
- Promote widespread implementation of pre-service teacher training programs that conform to best-practice models.
- Engage broad segments of the geoscience community in providing effective professional development opportunities for teachers.

The Project Description should include approximately three pages of information about the management plan for the proposed project. Each proposal to the GEO-Teach program should include information that will demonstrate to reviewers and panelists that the proposers are well prepared to manage a GEO-Teach project. Details about the vision for conducting the proposed project's day-to-day business should be included in each proposal. Mechanisms for obtaining external guidance and oversight should also be discussed. Proposals to the GEO-Teach program will be evaluated on the quality of the management plan as well as the quality of the overall design of the project.

The Project Description section should include approximately two pages of information about the plan for evaluating the project. This plan should clearly identify the approaches and tools that will be used to determine whether or not the project is making progress toward its goals. Project evaluation should be conducted by an organization that is not otherwise involved in the project. The project evaluator(s) should be engaged at the beginning of the project to ensure that the project is designed in a way that will allow its effectiveness to be determined.

The Project Description section should also contain a timeline for the project that is clearly tied to the project's goals, the project's management plan, and the proposed budget for the project. The timeline and any narrative that accompanies it

should be no more than two pages in length. Reviewers should be able to determine from the timeline who will be responsible for completion of tasks, when the tasks will be completed, and how much will be spent to complete the tasks.

Proposers are reminded to identify the program announcement/solicitation number (06-526) in the program announcement/ solicitation block on the proposal Cover Sheet. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

B. Budgetary Information

Cost Sharing:

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

Budget Preparation Instructions:

The budget narrative should be clearly tied to the work plan.

The budget narrative should justify any request for tuition. If there is a budget request for instructional salary support and indirect costs are claimed, tuition costs are not allowed.

A direct stipend of up to $100 per day (prorated for partial days) is allowed for teachers that participate in project activities occurring outside of paid school time. This support should be included in the budget as part of the participant support costs line item. Teachers and others who take on responsible roles during the project should be paid salaries. Salaries should not be included in the budget as participant support costs. The total stipend for a teacher or another person may exceed $100 if NSF support is supplemented by support from other sources.

Stipends and honoraria for conference or symposia attendance are not allowed.

The use of NSF funds to hire substitute teachers is allowed under the following conditions: (1) it is necessary to meet the goals and objectives of the project, and (2) it can be documented that the substitute teachers are directly replacing teachers involved in the NSF-funded project. Substitute teachers should be paid in accordance with established school-district policies. Payments for substitute teachers hired to replace teachers that are participating in the project are allowed in lieu of payments to the participating teachers. Payments for substitute teachers are allowed in addition to salary support for teachers that take on responsible roles in the project. Records must be maintained on the hiring and use of substitute teachers.

C. Due Dates

Proposals must be submitted by the following date(s):

Letters of Intent *(required):*

February 15, 2006

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

April 17, 2006

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. PROPOSAL REVIEW INFORMATION

A. NSF Proposal Review Process

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program Officers charged with the oversight of the review process. NSF invites the proposer to suggest, at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority-serving institutions, or adjacent disciplines to that principally addressed in the proposal.

The National Science Board approved revised criteria for evaluating proposals at its meeting on March 28, 1997 (NSB 97-72). All NSF proposals are evaluated through use of the two merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

On July 8, 2002, the NSF Director issued Important Notice 127, Implementation of new Grant Proposal Guide Requirements Related to the Broader Impacts Criterion. This Important Notice reinforces the importance of addressing both criteria in the preparation and review of all proposals submitted to NSF. NSF continues to strengthen its internal processes to ensure that both of the merit review criteria are addressed when making funding decisions.

In an effort to increase compliance with these requirements, the January 2002 issuance of the GPG incorporated revised proposal preparation guidelines relating to the development of the Project Summary and Project Description. Chapter II of the GPG specifies that Principal Investigators (PIs) must address both merit review criteria in separate statements within the one-page Project Summary. This chapter also reiterates that broader impacts resulting from the proposed project must be addressed in the Project Description and described as an integral part of the narrative.

Effective October 1, 2002, NSF will return without review proposals that do not separately address both merit review criteria within the Project Summary. It is believed that these changes to NSF proposal preparation and processing guidelines will more clearly articulate the importance of broader impacts to NSF-funded projects.

The two National Science Board approved merit review criteria are listed below (see the Grant Proposal Guide Chapter III.A for further information). 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 he/she is qualified to

make judgments.

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:

Is the proposed project likely to promote widespread implementation of effective practices in teacher training and professional development in the geosciences? Does the project have the potential to transform geoscience education?

Is the project design feasible? Are the times allotted for the completion of various tasks reasonable? Will the project contribute to the development of collaborative efforts to improve geoscience education? Will the project take a leadership role in the geoscience community?

Is the proposed project likely to engage leading geoscience researchers?

Will the proposed project engage middle and high school teachers? Are there teachers in leadership positions on the project team?

Is the project likely to result in widespread dissemination and utilization of high quality educational materials? Are the guidelines that will be used to identify high quality existing resources reasonable?

Is the proposed management plan consistent with the project's goals? Is the project cost-effective? Does the proposal include a plan for sustaining the GEO-Teach effort after the funding by this program ends?

Is there a plan to use evaluation to guide the project as it progresses?

B. Review Protocol and Associated Customer Service Standard

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Proposals submitted in response to this announcement/solicitation will be reviewed by Ad Hoc Review followed by Panel Review.

Principal investigators on projects that are recommended for funding following the panel review phase will be requested to either host an NSF site visit team or attend an NSF reverse site visit. The purpose of the site or reverse site visit will be to ensure the the proposers and NSF agree on the purpose and goals of the GEO-Teach project.

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.

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 Director. In addition, the proposer will receive an explanation of the decision to award or decline funding.

NSF is striving to be able to tell proposers whether their proposals have been declined or recommended for funding within six months. The time interval begins on the closing date of an announcement/solicitation, or the date of proposal receipt, whichever is later. The interval ends when the Division Director accepts the Program Officer's recommendation.

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 are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC). 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.

Consistent with the requirements of OMB Circular A-16, *Coordination of Geographic Information and Related Spatial Data Activities*, and the Federal Geographic Data Committee, all NSF awards that result in relevant geospatial data must be submitted to Geospatial One-Stop in accordance with the guidelines provided at: www.geodata.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/publications/pub_summ.jsp?ods_key=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/.

*These documents may be accessed electronically on NSF's Website at http://www.nsf.gov/awards/managing/. Paper copies of these documents may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from pubs@nsf.gov.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

Reports for GEO-Teach projects will include the list of agreed-upon deliverables and the schedule for realizing those deliverables that were developed at the start of the project. Reports will clearly describe the progress that was made on the deliverables and the amount of funds that were expended in making that progress during each reporting period. Semi-annual or quarterly reports may be required by NSF for some GEO-Teach projects.

The list of deliverables and/or the timeline for the project may be changed during the course of the project if the proposed changes are agreed to by both NSF and the awardee.

Within 90 days after the expiration of an award, the PI also is required to submit a final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for the PI and all Co-PIs. 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. This system permits electronic submission and updating of project reports, including information on project participants (individual and organizational), activities and findings, 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.

VIII. CONTACTS FOR ADDITIONAL INFORMATION

General inquiries regarding this program should be made to:

- Jill Leslie Karsten, Program Director for Diversity and Education, Directorate for Geosciences, 705 N, telephone: (703) 292-8500, fax: (703) 292-9042, email: jkarsten@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:

- Brian E. Dawson, Information Technology Specialist, Directorate for Geosciences, 705 N, telephone: (703) 292-4727, fax: (703) 292-9042, email: bdawson@nsf.gov

IX. OTHER PROGRAMS OF INTEREST

The NSF *Guide to Programs* is a compilation of funding for research and education in science, mathematics, and engineering. The NSF *Guide to Programs* is available electronically at http://www.nsf.gov/cgi-bin/getpub?gp. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter.

Many NSF programs offer announcements or solicitations concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices. Any changes in NSF's fiscal year programs occurring after press time for the *Guide to Programs* will be announced in the NSF E-Bulletin, which is updated daily on the NSF Website at http://www.nsf.gov/home/ebulletin, and in individual program announcements/solicitations. Subscribers can also sign up for NSF's MyNSF News Service (http://www.nsf.gov/mynsf/) to be notified of new funding opportunities that become available.

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The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Awardees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

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Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the GPG Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

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; 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 applicant 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 needing information as part of the review process or in order to coordinate programs; 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," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). 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 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 this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton, Reports Clearance Officer, Division of Administrative Services, National Science Foundation, Arlington, VA 22230.

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