Opportunities for Enhancing Diversity in the Geosciences (OEDG)

Program Solicitation

NSF 04-590

Replaces Document(s):

NSF 02-104

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):***

September 14, 2004

September 14, 2006

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

October 18, 2004

October 18, 2006

REVISION NOTES

- Letters of Intent are now required.
- The anticipated funding amount has been increased from $2.0 million in FY 2003 and $4.0 million in FY 2004, to $4.6 million in FY 2005 and $4.6 million in FY 2006. As in the past, proposals to the OEDG Program will be solicited every other year.
- Proposals may be submitted for consideration under one of the two Tracks described in this solicitation. An individual may be a Principal Investigator on only one proposal submitted per competition to the OEDG Program, regardless of which Track the proposal is submitted under. Proposals to Track 2 must include data demonstrating the effectiveness of prior efforts directly related to the proposed project.
- Proposal Preparation Instructions have been revised and clarified.
- Budgets for proposals submitted under both Track 1 and Track 2 must include funds to support attendance of the Principal Investigator at meetings for OEDG Principal Investigators that will be held every other year, beginning in 2005, in Washington, DC.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Opportunities for Enhancing Diversity in the Geosciences (OEDG)

Synopsis of Program:

The Directorate for Geosciences of the National Science Foundation supports research and education in the atmospheric, earth, and ocean sciences. The **Opportunities for Enhancing Diversity in the Geosciences** (OEDG) program is designed to address the fact that certain groups are underrepresented in the geosciences relative to the proportions of those groups in the general population. The primary goal of the OEDG program is to increase participation in the geosciences by African Americans, Hispanic Americans, Native Americans (American Indians and Alaskan Natives), Native Pacific Islanders (Polynesians or Micronesians), and persons with disabilities. A secondary goal of the program is to increase the perceived relevance of the geosciences among broad and diverse segments of the population. The OEDG program supports activities that will increase the number of members of underrepresented groups that:

- Are involved in formal pre-college geoscience education programs;
- Pursue bachelor, master, and doctoral degrees in the geosciences;
- Enter geoscience careers; and
- Participate in informal geoscience education programs.

The OEDG program consists of two tracks, *Track 1: Proof-of-Concept Projects*, and *Track 2: Full-Scale Projects*.

Track 1: Proof-of-Concept Projects - This track supports short-term activities. Track 1 projects include activities that will occur only one time, as well as those that are intended as the testing phase of an anticipated long-term *Full-Scale Project*.

Track 2: Full-Scale Projects - This track supports longer-term activities that will identify and promote pathways to geoscience careers among members of underrepresented groups.

Proposals to the OEDG competition are solicited every other year. The next competition will be held in FY 2006.

Cognizant Program Officer(s):

- Jill L Karsten, Program Director for Diversity and Education, 705 N, telephone: (703) 292-7718, fax: (703) 292-9042, email: jkarsten@nsf.gov

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

- 47.050 --- Geosciences

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 42 (of the awards, 35 awards are anticipated in Track 1, and 7 awards are anticipated in Track 2)

Anticipated Funding Amount: $9,200,000 - ($4,600,000 is anticipated in both FY 2005 and FY 2006, pending availability of funds)

Eligibility Information

Organization Limit:

None Specified

PI Limit:

An individual may be a Principal Investigator on only one proposal submitted per competition to the OEDG Program, regardless of which Track the proposal is submitted under.

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI:

None Specified

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 Proposal Preparation Instructions:** This solicitation contains information that supplements the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full text of this solicitation for further information

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

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

  September 14, 2004

  September 14, 2006

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

  October 18, 2004

  October 18, 2006

Proposal Review Information Criteria

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

Award Administration Information

Award Conditions: Additional award conditions apply. Please see the full text of this solicitation for further information.

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

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I. INTRODUCTION

The National Science Foundation (NSF) has an express mandate from Congress to promote the full use of human resources in science and engineering. The *Science and Engineering Equal Opportunities Act of 1980* gives NSF broad authority to assist in "full development and use of the science and engineering talents of men and women, equally, of all ethnic, racial, and economic backgrounds." Statistical data (see *GEO Education and Diversity*) confirm the underrepresentation of certain groups in science and engineering in general, and in the geosciences in particular. African Americans, Hispanic Americans, Native Americans (American Indians and Alaskan Natives), Native Pacific Islanders (Polynesians or Micronesians), and persons with disabilities represent about one-quarter of the general population, but earned only 16% of the total number of bachelor's degrees granted in science, technology, engineering and mathematics (STEM) fields in 2001. The geosciences have the lowest diversity of any of the STEM disciplines. In 2001, only 7% of students graduating from bachelor's-level geoscience degree programs were from underrepresented groups. In the same year, only 5% of M.S. and 2% of Ph.D. graduates in the geosciences were members of underrepresented groups. In contrast, members of underrepresented groups earned 11% of the master's degrees and 7% of the doctorate degrees awarded in all STEM fields combined in 2001.

II. PROGRAM DESCRIPTION

The Directorate for Geosciences of the National Science Foundation supports research and education in the Earth, ocean, and atmospheric sciences. The primary goal of the **Opportunities for Enhancing Diversity in the Geosciences** (OEDG)

program is to increase participation in the geosciences by African Americans, Hispanics/Latinos/Chicanos, Native Americans (American Indians and Alaskan Natives), Native Pacific Islanders (Polynesians or Micronesians), and persons with disabilities. An important but secondary goal is to strengthen understanding of geoscience and its relevance to modern society among broad and diverse segments of the population. The ultimate goal of the OEDG program is to bring more members of underrepresented groups into geoscience disciplines.

Specifically, the OEDG program supports activities that increase the number of members of underrepresented groups that:

- Are involved in formal pre-college geoscience education programs;
- Pursue bachelor's, master's, and doctoral degrees in the geosciences;
- Enter geoscience careers; and
- Participate in informal geoscience education programs.

Proposals to the OEDG program should be firmly grounded in the results of current research about the participation of underrepresented groups in STEM fields in general, and the geosciences in particular.

The OEDG program consists of two tracks, *Track 1: Proof-of-Concept Projects*, and *Track 2: Full-Scale Projects*. Proposals to either track may include activities that will establish or enhance of geoscience education and research capabilities in Historically Black Colleges and Universities (HBCUs), Hispanic-Serving Institutions (HSIs), Minority-Serving Institutions (MSIs) and Tribal Colleges and Universities (TCUs).

Track 1: Proof-of-Concept Projects: This track supports short-term activities, including those that will occur only once, or are intended to be the testing phase of an anticipated long-term *Full-Scale Project*. Track 1 projects may test innovative mechanisms for increasing the participation of members of underrepresented groups in the geosciences. Alternatively, Track 1 projects may test the effectiveness of strategies that have been successful in a different geographic region, with a different target audience, at a different educational level, in a different academic discipline, or in a different venue (e.g., at a museum rather than in an after-school program). Track 1 awards support projects with durations of up to two years. The maximum award under Track 1 is $100,000, with appropriate justification. The average award size under Track 1 is anticipated to be $50,000 - $75,000. Track 1 awards are eligible for renewal.

Track 2: Full-Scale Projects: This track supports long-term activities that will identify and promote pathways to geoscience careers among members of underrepresented groups. Track 2 projects should either develop or make use of existing networks to improve access and retention in the geosciences by members of underrepresented groups. The networks should:

- Mentor members of underrepresented groups and communicate ways in which specific individuals can prepare themselves to enroll in college-level degree programs in the geosciences and subsequently pursue graduate degrees and careers in the geosciences or related fields;
- Expose students, families, and communities to the geosciences in culturally sensitive, locally relevant, age-appropriate, and pedagogically sound ways;
- Ensure that members of underrepresented groups receive information about career opportunities in the geosciences and related fields; and
- Provide the support necessary to ensure the success of members of underrepresented groups in the geosciences.

The effectiveness of networks in contributing to the success of underrepresented minority students in STEM disciplines has been demonstrated by the organizations that are part of the Louis Stokes Alliances for Minority Participation (LSAMP) program at NSF. Networks supported by the LSAMP program include two- and four-year degree-granting higher education institutions, businesses and industries, national research laboratories, and local, state, and federal government agencies. Proposals to the OEDG program that describe activities that will coordinate with and enhance an existing LSAMP network are strongly encouraged. Proposals involving networks that are not currently part of an LSAMP are also encouraged.

OEDG networks may be composed of institutions and agencies such as (but not limited to) K-12 schools and/or districts, two-year colleges, four-year colleges and universities, graduate-degree granting institutions, informal education facilities or groups, businesses and industries, and government agencies. The composition of any individual network will be determined by the characteristics of the target audience that will be served by the network. The Project Management Team (Principal Investigators plus Other Senior Personnel) assembled for Track 2 projects should include professionals with expertise in geoscience, education, *and* issues related to diversity in STEM disciplines.

Networks should be prepared to facilitate access to the geosciences among members of underrepresented groups. For example, a network composed of a four-year college or university, a community college, a school district, and a corporation might partner to encourage students to make the transition from high school to college, major in a geoscience discipline, obtain a bachelor's degree, and begin a career in the geosciences. Other networks consisting of community colleges, four-year colleges, and graduate degree granting universities might partner to increase the number of M.S. and Ph.D. degrees in the geosciences earned by members of underrepresented groups. After-school and community outreach programs targeting

families might be the focus of a network composed of a school district, and an informal education organization. A graduate degree granting university might partner with an HBCU to develop a summer research internship program in the geosciences. These examples are not intended to restrict proposers to specific types of networks or activities, but rather to clarify what is meant by the term 'network'. In all proposals, one institution must be identified as the Lead Institution. The Lead Institution will have primary responsibility for all aspects of the project.

Track 2 proposals will only be considered for funding when the proposal clearly demonstrates that the proposed approach will be effective in increasing the participation of underrepresented groups in the geosciences. Proposers may use the results of prior projects (including those funded by NSF) to demonstrate their capability. Track 2 awards support projects for up to five years. The maximum award under Track 2 is $2 million, but the average award size is expected to be on the order of $1 million. The five-year maximum duration of Track 2 awards is intended to allow networks sufficient time to either find other support for their project or make the project self-sustaining.

Additional Information:

Before submitting to the OEDG program, proposers should review the abstracts of funded projects. The abstracts are available online at http://www.nsf.gov/geo/diversity/.

Proposers may also find one or more of the following documents to be of interest:

1. Report of the Geosciences Diversity Workshop, August 2000: National Science Foundation (available at: http://www.nsf.gov/geo/diversity/).

2. Strategy to Increase Diversity in the Geosciences: National Science Foundation Publication NSF 01-53 (available at: http://www.nsf.gov/geo/diversity/).

3. In Pursuit of a Diverse Science, Technology, Engineering, and Mathematics Workforce; Recommended Research Priorities to Enhance Participation by Underrepresented Minorities: American Association for the Advancement of Science (available at: http://ehrweb.aaas.org/index.shtml).

4. New Career Paths for Students with Disabilities: American Association for the Advancement of Science (available at: http://ehrweb.aaas.org/index.shtml).

5. Land of Plenty: Diversity as America's Competitive Edge in Science, Engineering and Technology: Report of the Congressional Commission on the Advancement of Women and Minorities in Science, Engineering and Technology Development (available at: http://www.nsf.gov/od/cawmset/).

6. CEOSE 2002 Biennial Report to Congress: National Science Foundation, Committee on Equal Opportunities in Science and Engineering (available at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=ceose2002rpt).

7. Geoscience Education: A Recommended Strategy: National Science Foundation Publication NSF 97-171 (available at: http://www.nsf.gov/geo/adgeo/geoedu/97_171.jsp).

8. Blueprint for Change: Report from the National Conference on the Revolution in Earth and Space Science Education: TERC (available at: http://www.earthscienceedrevolution.org/).

9. Science Education Resource Center at Carleton College: (http://serc.carleton.edu/).

10. Shaping the Future of Undergraduate Earth Science Education; Innovation and Change Using an Earth System Approach: American Geophysical Union (available at: http://www.agu.org/sci_soc/spheres/).

III. AWARD INFORMATION

Anticipated funding for the OEDG Program is expected to be $4.6 million in FY 2005 and $4.6 million in FY2006.

A total of 42 awards are anticipated. Of these 42 awards, 35 are anticipated under Track 1, and 7 are anticipated under Track 2.

Track 1 awards are for a maximum duration of 2 years. The maximum allowable funding request under Track 1 is $100,000, but the average award size is expected to be on the order of $50,000 - $75,000.

Track 2 awards are for a maximum duration of 5 years. The maximum allowable funding request under Track 2 is $2 million, but the average award size is expected to be on the order of $1 million.

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

IV. ELIGIBILITY INFORMATION

Organization Limit:

None Specified

PI Limit:

An individual may be a Principal Investigator on only one proposal submitted per competition to the OEDG Program, regardless of which Track the proposal is submitted under.

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI:

None Specified

Additional Eligibility Info:

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

An individual may be a Principal Investigator on only one proposal submitted per competition to the OEDG Program, regardless of which Track the proposal is submitted under.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Letters of Intent *(required):*

Letters of Intent must be submitted via email to Dr. Jill Karsten (jkarsten@nsf.gov), Program Director for Diversity and Education, Directorate for Geosciences, National Science Foundation.

Letters must include the following information.

- Name and affiliation of Principal Investigator
- Identify Project for consideration under Track 1 or Track 2
- Name(s) and affiliation(s) of Co-Principal Investigators

- Name(s) and affiliation(s) of Other Senior Personnel
- Name(s) of other participating organizations - for example: school districts, research consortia, or museums, etc.
- Brief description of the proposed project
- Characteristics of target audience

Letter of Intent Management Conditions:

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

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

Full Proposal Instructions: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the guidelines specified 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-PUBS (7827) or by e-mail from pubs@nsf.gov.

Specific guidance below supplements the GPG's general guidance and modifies some requirements.

Advice to Proposal Writers

GEO staff often provide informal guidance to proposers about potential projects. The advice most frequently sought about proposal writing in general has been collected in *A Guide for Proposal Writing* (NSF 04-016). For examples of OEDG-funded projects, refer to the OEDG Website: http://www.nsf.gov/geo/diversity/.

Formal Proposal Preparation

Cover Sheet

The proposal title should include informative key words that indicate, for example, the target audience and the approach of the proposed project. The proposal title should also indicate whether the proposal should be considered under Track 1 or Track 2.

Project Summary

The Project Summary is the first statement that reviewers and NSF staff will read about a proposed project, and it sets the context in which the rest of the proposal will be read. Thus, the summary should be a clear, concise, self-contained description of the project. It should be informative to people working in the same or related fields, and insofar as possible, understandable to a scientifically literate reader. It should not contain extraneous descriptions of an institution, department, or Principal Investigator (PI). In no more than 250 words the summary should describe:

- The problem(s) being addressed by the proposal;
- The objectives and expected outcomes, including any tangible products;
- How the objectives will be accomplished;
- Characteristics of audience(s) targeted by the project;
- Notable collaborations; and
- Themes addressed in a significant way (such as teacher preparation, faculty development, capacity-building, community outreach, use of technology, research experiences, mentoring, etc.).

All Project Summaries MUST include separate statements addressing the National Science Board (NSB) approved review criteria of Intellectual Merit and Broader Impacts, or the proposal will be returned without review.

Project Description, including Results from Prior NSF Support

Text in this section must be single-spaced (6 lines per 2.5 cm). The format must be clear and legible. Use no less than 2.5-cm margins and a standard font that is no smaller than 12 point in size. No Project Description

may exceed 15 single-spaced pages in length.

The Project Description should address the criteria used by reviewers to judge the merit of the proposal. NSF's two general merit review criteria (Intellectual Merit and Broader Impacts) often lead to questions, including the examples that follow, during the review process. A proposal need not explicitly answer each of the questions below, these examples are meant to help proposal writers understand the types of issues that may be considered during the review process.

Examples of Reviewers' Questions Related to Intellectual Merit:

Does the project have the potential to increase understanding of the geosciences by members of underrepresented groups?

Are the goals and objectives, and the plans and procedures for achieving them worthwhile, well developed, and realistic?

Is the rationale for including particular activities or undertaking particular development tasks clearly articulated?

Does the project design consider the background, preparation, and experience of the target audience?

Is the project informed by research on teaching and learning, the efforts of others, and literature relevant to diversity?

Are plans for evaluation of the project appropriate and adequate for the project's size and scope and will the evaluation appropriately inform project development?

Is the project led by and supported by capable and qualified personnel who have recent and relevant experience in education, research, or the workplace?

Is the project supported by adequate facilities, resources, and institutional commitment?

Examples of Reviewers' Questions Related to Broader Impacts:

Are the proposed activities consistent with the proposing institutions' long-term goals?

To what extent will the results of the project contribute information that will help the geoscience community at large identify successful (and unsuccessful) practices related to increasing diversity in the geosciences?

Will the project evaluation inform others through communication of results?

Are the results of the project likely to be exportable to other institutions?

What is the potential for the project to develop connections with industry?

Will the project result in a significant increase in diversity in the geosciences?

Does the project involve MSIs, HBCUs, HSIs, or TCUs?

Will the project provide increased access to the geosciences by persons with disabilities?

Will the project result in significant involvement of communities and/or families?

Will the project significantly improve the quality and quantity of pre-college geoscience instruction in schools with large numbers of students from underrepresented groups?

Will the project involve significant numbers of underrepresented minorities in informal geoscience programs?

The Project Description in proposals submitted to both Track 1 and 2 should contain:

1. **Results from Prior NSF Support:** If the prospective PI or Co-PI(s) has received support from NSF pertaining to diversity-enhancing or geoscience-education efforts in the past five years, briefly describe the earlier project(s) and the outcomes of those projects. Provide sufficient detail to permit a reviewer to reach an informed conclusion regarding the value of the results achieved. Include the NSF award number, amount and period of support, title of the project, a summary of the results of the completed work, and a list of publications and formal presentations that acknowledged the NSF award (do not submit copies with the proposal). Note that the PI and all Co-PIs must submit a Final Project Report for any completed NSF-funded project before a new grant can be awarded.

2. **Goals and Objectives:** Describe the goals clearly and concisely. Relate the goal to local or national needs and recent trends as appropriate.

3. **Detailed Project Plan:** This should be the longest section of the Project Description. Describe the project's features, clearly delineating the need or problem that will be addressed and the research base on which the project builds, what will be done during the project, how the expected outcomes will be achieved, the timetable for executing the project, and the facilities and resources available for realizing the project's objectives. Where appropriate, include evidence of past successes that support the methods proposed. Such evidence may come from the current literature or from other projects conducted by the proposers. Note that reviewers are not required to access URLs, and they may not have access to the internet during the review process. Therefore, all essential materials should be submitted in written format. The literature cited in the bibliography should reflect an understanding of the state of knowledge related to diversity in science, engineering, mathematics, and technology (STEM) generally, and in the geosciences particularly. Appropriate literature about research on teaching and learning should be cited. Any literature cited should be clearly and specifically related to the proposed project, and it should be clear to reviewers how referenced information played a role in the design of the project.

4. **Experience and Capability of the Principal Investigator(s):** Briefly describe the experience and capability of the PI(s). Include a brief description of the rationale for including specific personnel and institutions. State the role of each and cite the expertise that each will contribute to the project.

5. **Evaluation Plan:** The OEDG Program as a whole is evaluated by a contractor to the National Science Foundation. This contractor works with OEDG awardees to collect data and identify best practices. Track 1 proposers need not submit a detailed evaluation plan, but must be prepared to work with the contractor to collect and report information as necessary. Track 2 proposers must also be prepared to work with the contractor. Track 2 proposers should additionally include a detailed evaluation plan in their proposal. The detailed evaluation plan should describe the criteria that will be used to evaluate the project and how the project impacts diversity in the geosciences. The process for collecting and analyzing information should be described. A timeline for evaluation activities should be included. The qualifications of the individuals who will perform the evaluation tasks should be described. The objectivity and credibility of the evaluation team should be made evident to reviewers. The following references may be helpful in designing an evaluation plan:

    - *The 2002 User-Friendly Handbook for Project Evaluation* (NSF 02-057).
    - *User Friendly Handbook for Mixed Method Evaluations* (NSF 97-153).
    - *Online Evaluation Resource Library*.
    - *Field-tested Learning Assessment Guide* (FLAG).

6. **Dissemination of Results:** Describe plans to communicate the results of the project to others in the geosciences, STEM, and education communities, both during and after the project, and to disseminate any tangible products that may be produced. Identify the audiences that will be reached through dissemination efforts, and the means of dissemination (e.g., faculty development workshops, journal articles, conference presentations, the Digital Library for Earth System Education {DLESE}, presentations to industry, press releases, etc.). It is anticipated that the data

collected for the evaluation component of Track 2 projects will form the basis of scholarly publications.

Budget and Budget Justification

The amounts indicated on the budget forms should include only the amounts requested from NSF. Text for the budget justification is limited to a maximum of 3 pages.

For a proposal involving multiple organizations, the budget justification should include the amount each organization will receive from the grant.

For Track 2 projects, the results of the project should be used to cultivate sources of additional or long-term support outside of NSF. Collaborations with industry are encouraged. Plans for long-term sustainability and institutionalization of programs should be identified.

NSF funds may not be used to support expenditures that would have been undertaken in the absence of an award, such as the cost of activities that are considered part of a faculty member's normal duties.

Preparation of Instrumentation Budget Items and Justification - If instrumentation is required for the project, the need for the instrumentation should be clearly justified as part of the Budget Justification. Reviewers must be able to recognize the function of any requested instrumentation. Many manufacturers routinely offer educational or institutional discounts. When preparing the budget, contact manufacturers or distributors to obtain discounted prices. If research instrumentation or equipment is requested in a proposal to the OEDG program, the proposal should include plans for maintenance and technical support of the instrumentation after the end of the award period.

Participant Support Costs - Note that indirect costs may not be charged on participant support costs.

Workshops - The proposal may include participant support costs for subsistence (lodging and meals) during workshops. In addition, funds may be requested for stipends for participants. Requests for such stipends must be specific and fully justified. No tuition or other fees may be charged to workshop participants. The host institution is expected to provide the facilities and instrumentation necessary to conduct the workshop, therefore NSF will not ordinarily support permanent instrumentation or new facilities. The host institution is also expected to cover expenses incurred by their own faculty participants.

Other Participant Support Costs - Participant support costs necessary for the success of the project should be included in the budget. The total cost per participant varies with the type of participant and the type of activity. For example, to ensure participation by teachers, it may be necessary to pay for substitute teachers while the targeted teachers participate in the project. Similarly, to ensure participation in summer research programs by students who are members of underrepresented groups, it may be necessary to provide stipends that are competitive with wages received by students who obtain full-time summer employment.

Collaborative Proposals

Collaborative Proposals (see the Collaborative Proposals section of the GPG) may be submitted either as a single proposal or as simultaneously submitted proposals from different organizations. In the latter case, the collaborating organizations must exactly follow the instructions for electronic submission specified in GPG. The project titles of the collaborative proposals must be identical and must begin with the words "Collaborative Project," and the *combined* budgets of the related proposals should conform to the award size limits specified in this solicitation.

Special Information (Track 2 proposals only)

Proposals to Track 2 must include the results of evaluation of prior, related project(s) that can be used to demonstrate that the proposed project has a high probability of success. The goals of prior project(s) and the method(s) used to measure success at achieving goals must be clearly identified and explained. Both quantitative and qualitative data may be included and discussed. Track 2 proposals that lack documentation of the effectiveness of prior efforts will be returned without review.

Proposers are reminded to identify the program solicitation number (Populated with NSF Number at Clearance) 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.

B. Budgetary Information

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

Budget Preparation Instructions:

At least one Principal Investigator from each funded project is required to attend OEDG PI meetings held every other year, beginning in 2005, in Washington, DC. At these meetings, PIs discuss the basic components of their projects and work with a professional evaluator to implement and improve their evaluation strategies and identify key strengths and weaknesses in their projects. The PI meeting should be viewed as an opportunity for PIs to obtain assistance with the evaluation component of their project and to share information about their experiences with other OEDG PIs. The results of these meetings are anticipated to lead to identification of a set of "best practices" related to increasing diversity in the geosciences that can be shared with the geoscience and STEM communities at large via DLESE.

C. Due Dates

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

  September 14, 2004

  September 14, 2006

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

  October 18, 2004

  October 18, 2006

D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this program solicitation through use of the NSF FastLane system. Detailed instructions regarding the technical aspects of proposal preparation and submission via FastLane are available at: http://www.fastlane.nsf.gov/a1/newstan.htm. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov. The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this funding opportunity.

Submission of Electronically Signed Cover Sheets. The Authorized Organizational Representative (AOR) must electronically sign the proposal Cover Sheet to submit the required proposal certifications (see Chapter II, Section C of the Grant Proposal Guide for a listing of the certifications). The AOR must provide the required electronic certifications within five working days following the electronic submission of the proposal. Further instructions regarding this process are available on the FastLane Website at: https://www.fastlane.nsf.gov/fastlane.jsp.

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.

Additional Review Criteria:

Is the project team capable of successfully carrying out the stated goals?

Is there evidence of institutional commitment to achieving and realizing the goals of the proposal?

Does the project have the potential to increase the diversity of geoscience students, or increase understanding of the relevance of the geosciences among broad, diverse segments of the population?

For Track 2 proposals, does the project team have prior experience planning and managing successful programs directed toward increasing diversity in the geosciences?

For Track 2 proposals, is there evidence that the project will become self-sustaining or be sustained by funding from sources other than NSF at the end of the funding period?

B. Review and Selection Process

Proposals submitted in response to this program solicitation will be reviewed by 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 administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See Section VI.B. for additional information on the review process.)

B. Award Conditions

An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (GC-1); * or Federal Demonstration Partnership (FDP) Terms and Conditions * and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreements also are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC) and the applicable Programmatic Terms and Conditions. NSF awards are electronically signed by an NSF Grants and Agreements Officer and transmitted electronically to the organization via e-mail.

*These documents may be accessed electronically on NSF's Website at http://www.nsf.gov/awards/managing/general_conditions.jsp?org=NSF. 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 and other important information on the administration of NSF awards is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpm.

Special Award Conditions:

Principal Investigators will participate in meetings held every other year, beginning in 2005, in Washington, DC. Awardees will collect data as necessary to evaluate the success of each particular project and the OEDG program as a whole.

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.

The awardee will report data as requested by NSF to assess the effectiveness of the project. Data collected for each project will be determined by the nature of the project but will likely include: numbers of individuals served, types of experiences provided, results of evaluations, and results of longitudinal tracking.

VIII. AGENCY CONTACTS

General inquiries regarding this program should be made to:

- Jill L. Karsten, Program Director for Diversity and Education, 705 N, telephone: (703) 292-7718, fax: (703) 292-9042, email: jkarsten@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@nsf.gov.
- Brian E. Dawson, Information Technology Specialist, 705 N, telephone: (703) 292-4727, fax: (703) 292-9042, email: bdawson@nsf.gov

IX. OTHER INFORMATION

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

Related Programs:

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