Collaboration in Mathematical Geosciences (CMG)

Opportunities for Research Collaborations Between the Mathematical Sciences and the Geosciences

PROGRAM SOLICITATION
NSF 09-520

REPLACES DOCUMENT(S):
NSF 05-535

National Science Foundation

Directorate for Mathematical & Physical Sciences
Division of Mathematical Sciences

Directorate for Geosciences

Office of Polar Programs

Submission Window Date(s) (due by 5 p.m. proposer's local time):

February 24, 2009 - March 10, 2009

January 08, 2010 - January 22, 2010

IMPORTANT INFORMATION AND REVISION NOTES

Please be advised that the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) includes revised guidelines to implement the mentoring provisions of the America COMPETES Act (ACA) (Pub. L. No. 110-69, Aug. 9, 2007.) As specified in the ACA, each proposal that requests funding to support postdoctoral researchers must include a description of the mentoring activities that will be provided for such individuals. Proposals that do not comply with this requirement will be returned without review (see the PAPP Guide Part I: *Grant Proposal Guide* Chapter II for further information about the implementation of this new requirement).

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Collaboration in Mathematical Geosciences (CMG)
Opportunities for Research Collaborations Between the Mathematical Sciences and the Geosciences

Synopsis of Program:

The purpose of the Collaboration in Mathematical Geosciences (CMG) activity is to enable collaborative research at the intersection of mathematical sciences and geosciences, and to encourage cross-disciplinary education. Projects should fall within one of three broad themes: (1) mathematical and statistical modeling of complex geosystems, (2) understanding and quantifying uncertainty in geosystems, or (3) analyzing large/complex geoscience data sets. Research projects supported under this activity must be essentially collaborative in nature. Research groups must include at least one mathematical/statistical scientist and at least one geoscientist. Proposals that address problems with relevance to global change and sustainability are especially encouraged.

Cognizant Program Officer(s):

Please note that the following information is current at the time of publishing. See program website for any updates to the points of contact.

- Junping Wang, Program Director, MPS/Division of Mathematical Sciences, telephone: (703) 292-4488, email: jwang@nsf.gov
- Gabor Szekely, Program Director, MPS/Division of Mathematical Sciences, telephone: (703) 292-8869, email: gszekely@nsf.gov
- Andrew D. Pollington, telephone: (703) 292-4878, email: adpollin@nsf.gov
- Robin Reichlin, Program Director, GEO/Division of Earth Sciences, telephone: (703) 292-8556, email: rreichli@nsf.gov
- William J. Wiseman, Program Director, Office of Polar Programs, telephone: (703) 292-4750, email: wwiseman@nsf.gov

- Eric T. DeWeaver, telephone: (703) 292-8527, email: edeweave@nsf.gov
- Baris M. Uz, telephone: (703) 292-4557, email: bmuz@nsf.gov

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

- 47.049 --- Mathematical and Physical Sciences
- 47.050 --- Geosciences
- 47.078 --- Office of Polar Programs

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 15 to 28

Anticipated Funding Amount: $12,000,000 in FY2009, subject to the availability of funds.

Eligibility Information

Organization Limit:

The categories of proposers eligible to submit proposals to the National Science Foundation are identified in the Grant Proposal Guide, Chapter I, Section E.

PI Limit:

None Specified

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI:

None Specified

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- Letters of Intent: Not Applicable
- Preliminary Proposal Submission: Not Applicable
- Full Proposal Preparation Instructions: This solicitation contains information that supplements the standard NSF Proposal and Award Policies and Procedures Guide, Part I: 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 under this solicitation.
- Indirect Cost (F&A) Limitations: Not Applicable
- Other Budgetary Limitations: Not Applicable

C. Due Dates

- Submission Window Date(s) (due by 5 p.m. proposer's local time):

  February 24, 2009 - March 10, 2009

  January 08, 2010 - January 22, 2010

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: 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

In many areas within the geosciences, researchers at the frontiers of theory, experiment, and modeling confront problems that current applied mathematical or statistical approaches are insufficient to solve. In mathematics and statistics, geoscience problems can serve as the impetus for fundamental research in the mathematical sciences. Equally, geoscience research can be advanced by the infusion of state of the art mathematical tools. Simultaneous advances in both disciplines are necessary, for example, to address the pressing problem of understanding and predicting the emergent behavior of Earth as a complex system.

Observational capabilities are rapidly improving and producing large and heterogeneous data sets. Understanding the structure of these complex data sets is a mathematical grand challenge. Sustained advances in computational and algorithmic capabilities are enabling simulations at ever-increasing resolution and complexity, often coupling multiple domains with different dynamics, scales, and processes. Parallel advances in mathematical and statistical techniques are necessary to combine or compare data sets of disparate nature, to extract patterns, low-dimensional features or other understanding from them, and to assess the uncertainty in observations and predictions. Effectively meeting these challenges requires the combined efforts of geoscientists and mathematical scientists.

The Division of Mathematical Sciences (DMS), within the Directorate for Mathematical and Physical Sciences (MPS), the Directorate for Geosciences (GEO), and the Office of Polar Programs of the National Science Foundation (NSF) expect to make a number of awards in FY 2009 and FY 2010 that will support the activities of groups of investigators working at the frontiers of mathematical geosciences. The CMG activity was originally a component of NSF's Mathematical Sciences Priority Area, and the participating divisions have agreed to extend the solicitation for an additional two years. For a list of awards funded in prior years of the Collaborations in Mathematical Geosciences competition, please go to http://www.nsf.gov/awardsearch/index.jsp. (Search for titles containing CMG.)

Proposals should bring together scientists from both the mathematics and geosciences communities in a truly collaborative effort. Proposals in three broad thematic areas are solicited in this competition:

- Mathematical and statistical modeling of complex geosystems
- Understanding and quantifying uncertainty in geosystems
- Analyzing large/complex geoscience data sets

II. PROGRAM DESCRIPTION

The primary purposes of the CMG activity are to promote cutting-edge research in areas that require the collaboration of experts in both the geosciences and the mathematical sciences, and to promote the training of researchers with skills in both the mathematical sciences and geosciences. We are particularly interested in supporting collaborations in areas where such interdisciplinary collaboration is presently uncommon, and to support the initiation of new collaborations. Proposals that develop new approaches to modeling and analyzing complex geosystems, especially those related to global change and sustainability are strongly encouraged.

Successful interdisciplinary research proposals should address at least one of the following: (i) research with a single coherent goal that significantly advances the understanding of an important phenomenon in the geosciences and at the same time requires significant research in one or more areas of the mathematical sciences to provide these advances, (ii) research on an important

phenomenon in a domain of geosciences that involves the use of more sophisticated mathematical or statistical approaches than are currently used in that domain, or (iii) research in an area of mathematics or statistics that is prompted by a problem in the geosciences.

For a proposal to be appropriate for CMG, the topic must have an intrinsic need for a non-trivial collaboration between at least one geoscientist and at least one mathematical scientist. For example, in a proposal addressing a research problem of type (ii), if the more sophisticated mathematics involved is nevertheless something that is well documented and could easily be applied to the problem at hand by a geoscientist who has read the appropriate literature, without the aid of a mathematician or statistician, reviewers will be expected to rank the proposal as non-competitive. Similar considerations apply to research problems of type (iii). Research groups must include at least one mathematical scientist and one geoscientist.

Projects supported under this activity should be essentially collaborative in nature and depend for their success on the interaction of the researchers in the group. Proposals should include a clear description of the nature of the collaboration in the management plan, and should also outline the training, mentoring and development activities for students and post doctoral researchers who may be involved in the project. Projects may be up to four years duration. It is not the intent of this activity to provide general support for infrastructure. The CMG competition is soliciting proposals that could lead to breakthroughs in one or more of the following three thematic areas.

1. Mathematical and Statistical modeling of complex geosystems:

Some examples of topics falling within this theme include, but are not limited to:

- Novel techniques for the computation and analysis of multi-physics or multidisciplinary models of geosystems
- Novel algorithms and methods in multi-scale modeling
- Novel modeling or computational techniques for decoupling or model reduction
- Fast and scalable numerical algorithms and solvers for multi-physics or multidisciplinary problems

2. Understanding and quantifying uncertainty in geosystems:

Some examples of topics falling within this theme include, but are not limited to:

- Novel methods for error/uncertainty quantification for inverse and state estimation problems
- Error estimation and uncertainty quantification in coupled nonlinear models
- Uncertainty assessment in the modeling of complex environmental systems

3. Analyzing large/complex geoscience data sets:

Some examples of topics falling within this theme include, but are not limited to:

- Research that links new insights about the internal dynamics of geosystems and novel methods of analyzing data sets from observations and/or large numerical models
- Methods and techniques for integration of, or inference from multiple data-types (i.e. biological, chemical and physical data)
- Robust mathematical/statistical methods for irregularly-sampled heterogeneous data sets
- Data analysis methods that enhance the utility of geoscience observatory infrastructure

The main themes are intentionally broad, and it is not required that proposals be related to any of the specific examples given above. It is the intent of the program to develop a broad portfolio across the various topical areas in geosciences and mathematical sciences, and new areas of collaboration are strongly encouraged. The aim of the CMG activity is to support projects for which the collective effort by a group of researchers with complementary expertise is necessary to reach the scientific goals. Investigators are encouraged to request support for, and provide mentoring to, students and/or post-doctoral researchers in their proposals. The researchers in the group may come from more than one institution or organization. Awards made under the CMG activity are intended to foster synergy between the disciplines and between the researchers in the group that cannot be easily achieved with individual grants. Awardees will be expected to show evidence of collaboration in their annual progress reports.

Prospective investigators in the CMG program should carefully consider whether a planned proposal is best suited for the CMG program or for some other program, keeping in mind that NSF does not accept substantially overlapping proposals that are submitted to different programs simultaneously without prior approval. If in doubt, please consult one of the cognizant Program Officers before submitting a proposal.

III. AWARD INFORMATION

NSF anticipates that approximately $12,000,000 will be available for making CMG awards in FY 2009, subject to the availability of funds. Similar amounts are anticipated in FY 2010. Proposals may be for up to four years duration. PIs are encouraged to submit proposals for projects with durations of three to four years. The anticipated date of funding recommendations is August of each year. The final number of awards will depend on the quality of submissions and the availability of funds.

IV. ELIGIBILITY INFORMATION

Organization Limit:

The categories of proposers eligible to submit proposals to the National Science Foundation are identified in the Grant Proposal Guide, Chapter I, Section E.

PI Limit:

None Specified

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI:

None Specified

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

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 nsfpubs@nsf.gov.

a) Cover page - To facilitate timely processing, the title of the proposed project should begin with the string "CMG RESEARCH:" or "CMG COLLABORATIVE RESEARCH:". The latter form should be used for multi-organizational proposals.

(b) Project Description, not to exceed fifteen pages, including the following items:

i) Proposed Research. (Narrative)

- An explanation of the scientific context and timeliness of the proposed project.
- A description of the proposed research.
- A justification for why a collaborative effort is necessary to carry out the proposed project.
- A timeline for the planned work and a justification for the duration.
- Plans for disseminating the results.
- Plans for student and posdoc mentoring, if applicable.
- Results from prior NSF support, whether or not applicable to the proposed activity. If not applicable, please explain why.

ii) Statement of eligibility for CMG. The proposal must include an explanation, clearly identified and not to exceed one page, within the 15-page project description, stating why the proposed research (a) is innovative and state-of-the-art, (b) lies in the interdisciplinary region in which the nature of the research problem addressed challenges both mathematical scientists and geoscientists, (c) requires a true collaboration between one or more mathematical scientists and one or more geoscientists. Reviewers will be asked to pay close attention to this explanation.

iii) Management Plan. Provide a management plan, describing how the group effort will be coordinated.

iv) Modes of Collaboration and Training. The following components are optional and can be included if appropriate:

- A description of new modes of collaboration.
- A description of new modes of training graduate students, postdoctoral researchers, or undergraduates.
- A description of planned workshops and a list of tentative participants.

(c) Biographical sketches. For all key personnel, please provide a brief biographical sketch. Do not exceed two pages per person for the sketch. Up to five publications most closely related to the proposal and up to five other significant publications may be included, including those accepted for publication. For each individual, up to one additional page describing how that individual will contribute to the project may also be included. Biographical Sketches must conform to the guidelines described in the GPG. Program Officers will pay close attention to whether sufficient information has been provided to permit the screening of potential reviewers for possible conflicts of interest.

(d) A full description of the total level of current and pending support from all sources for the key personnel. It is important to identify the number of salary-months covered by each source and whether these are summer, academic or calendar months.

(e) A description of the facilities (including laboratories and computational facilities) that will be made available to the project.

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 under this solicitation.

C. Due Dates

- Submission Window Date(s) (due by 5 p.m. proposer's local time):

  February 24, 2009 - March 10, 2009

  January 08, 2010 - January 22, 2010

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 where they will be reviewed if they meet NSF proposal preparation requirements. 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 of interest with the proposal.

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 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, original, or potentially transformative 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?

Examples illustrating activities likely to demonstrate broader impacts are available electronically on the NSF website at: http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf.

Mentoring activities provided to postdoctoral researchers supported on the project, as described in a one-page supplementary document, will be evaluated under the Broader Impacts criterion.

Additional Solicitation Specific Review Criteria

In addition to the National Science Board merit review criteria, reviewers will be asked to apply several specific criteria when reviewing CMG proposals. These criteria include:

- The extent to which the proposed research goes beyond existing approaches or ideas
- Extent to which the whole of the proposed group project will be greater than the sum of its parts
- Extent to which the group effort is focused on a cohesive, well-delineated goal
- Timeliness of the planned work
- Likelihood of substantial progress
- Long-term scientific impact of the proposed activity
- Appropriateness of the group members and group structure for the task
- Appropriateness of the proposed modes of collaboration
- Adequacy and appropriateness of the proposed timeline
- Adequacy of the management plan
- Adequacy of the plans for dissemination

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

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

research through the diversity of learning perspectives.

Integrating Diversity into NSF Programs, Projects, and Activities
Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

B. Review and Selection Process

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

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

After scientific, technical and programmatic review and consideration of appropriate factors, the NSF Program Officer recommends to the cognizant Division Director whether the proposal should be declined or recommended for award. NSF is striving to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. The time interval begins on the deadline or target date, or receipt date, whichever is later. 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 Research 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/award_conditions.jsp?org=NSF. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov.

More comprehensive information on NSF Award Conditions and other important information on the administration of NSF awards is contained in the NSF *Award & Administration Guide* (AAG) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag.

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, and a project outcomes report for the general public.

Failure to provide the required annual or final project reports, or the project outcomes report 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 project outcomes report must be prepared and submitted using Research.gov. This report serves as a brief summary, prepared specifically for the public, of the nature and outcomes of the project. This report will be posted on the NSF website exactly as it is submitted by the PI.

More comprehensive information on NSF Reporting Requirements and other important information on the administration of NSF awards is contained in the NSF *Award & Administration Guide* (AAG) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag.

In their annual and final project reports, recipients of awards made must explicitly describe the ways in which the mathematical scientists and geoscientists involved have collaborated and the products of this collaboration.

VIII. AGENCY CONTACTS

Please note that the program contact information is current at the time of publishing. See program website for any updates to the points of contact.

General inquiries regarding this program should be made to:

- Junping Wang, Program Director, MPS/Division of Mathematical Sciences, telephone: (703) 292-4488, email: jwang@nsf.gov
- Gabor Szekely, Program Director, MPS/Division of Mathematical Sciences, telephone: (703) 292-8869, email: gszekely@nsf.gov
- Andrew D. Pollington, telephone: (703) 292-4878, email: adpollin@nsf.gov
- Robin Reichlin, Program Director, GEO/Division of Earth Sciences, telephone: (703) 292-8556, email: rreichli@nsf.gov
- William J. Wiseman, Program Director, Office of Polar Programs, telephone: (703) 292-4750, email: wwiseman@nsf.gov
- Eric T. DeWeaver, telephone: (703) 292-8527, email: edeweave@nsf.gov
- Baris M. Uz, telephone: (703) 292-4557, email: bmuz@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@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, National Science Foundation Update is a free e-mail subscription service 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 when new publications are issued that match their identified interests. Users can subscribe to this service by clicking the "Get NSF Updates by Email" link on the NSF web site.

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

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) is an independent Federal agency created by the National Science Foundation Act of 1950, as amended (42 USC 1861-75). The Act states the purpose of the NSF is "to promote the progress of science; [and] to advance the national health, prosperity, and welfare by supporting research and education in all fields of science and engineering."

NSF funds research and education in most fields of science and engineering. It does this through grants and cooperative agreements to more than 2,000 colleges, universities, K-12 school systems, businesses, informal science organizations and other research organizations throughout the US. The Foundation accounts for about one-fourth of Federal support to academic institutions for basic research.

NSF receives approximately 55,000 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 Arctic 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: nsfpubs@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