Water Cycle Research (WCR)

Program Solicitation
NSF 04-577
Replaces Document **NSF-02-101**

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

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

July 26, 2004

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Water Cycle Research (WCR)

Synopsis of Program:

The scope of this Program Solicitation encompasses innovative basic research that contributes to an enhanced understanding of the water cycle and its function as a transport agent for energy and mass (water and biologically/geochemically reactive substances). Proposals giving specific attention to (1) mass and energy transfer across the interfaces between land-atmosphere, land-ocean and ocean-atmosphere; (2) research that crosses traditional NSF Division (Atmospheric, Earth and Ocean Sciences) boundaries; and/or (3) research that crosses disciplinary boundaries with appropriate research teams are especially encouraged. This Solicitation encourages investigators to integrate research and build interdisciplinary research teams to pursue topics that cannot readily be addressed by individual core programs within the National Science Foundation.

Cognizant Program Officer(s):

- Lydia Dumenil-Gates, Program Director, Directorate for Geosciences, Division of Atmospheric Sciences, 775 S, telephone: (703) 292-8522, fax: (703) 292-9022, email: lgates@nsf.gov
- L. Douglas James, Program Director, Directorate for Geosciences, Division of Earth Sciences, 785 S, telephone: (703) 292-8549, email: ldjames@nsf.gov
- Rodey Batiza, Program Director, Directorate for Geosciences, Division of Ocean Sciences, 725 N, fax: (703) 292-9085, email: rbatiza@nsf.gov

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

- 47.050 --- Geosciences

Eligibility Information

- **Organization Limit:** None Specified.
- **PI Eligibility Limit:** None Specified.
- **Limit on Number of Proposals:** None Specified.

Award Information

- **Anticipated Type of Award:** Standard Grant
- **Estimated Number of Awards:** 7 to 15
- **Anticipated Funding Amount:** $5,000,000 in FY05 pending availability of funds

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **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.
- **Indirect Cost (F&A) Limitations:** Not Applicable.
- **Other Budgetary Limitations:** Not Applicable.

C. Due Dates

- **Full Proposal Deadline Date(s)** (due by 5 p.m. proposer's local time):
  July 26, 2004

Proposal Review Information

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

Award Administration Information

- **Award Conditions:** Standard NSF award conditions apply.
- **Reporting Requirements:** Standard NSF reporting requirements apply.

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I. INTRODUCTION

The vitality of all life on Earth and our economic prosperity depend on water. The maintenance of a reliable water supply will be one of the greatest challenges to the future of our cities, agriculture and the well being of people throughout the world. Water continuously circulates within and among the Earth's oceans, atmosphere, biosphere, cryosphere, land surface and land subsurface. These movements of water are termed the global water cycle. The water cycle, however, involves much more than the fluxes of water itself. The water cycle sustains life by transporting both mass and energy. The water cycle sustains a habitable environment through the transport of biologically and geochemically reactive substances necessary to life and through the latent heat exchange and radiative effects that play a central role in the planet's climate. Effective management of our water resources will require a deeper understanding of the water cycle and the factors that determine the distribution, availability, and composition of water. Nevertheless, the water cycle and its role as an agent of transport for mass and energy are both poorly understood. Building on recent advances in the geosciences, this Water Cycle Research Solicitation supports the goal to advance "the scientific understanding of the integrated Earth systems through supporting high quality research..." ("Geosciences Beyond 2000", NSF 00-27; http://www.geo.nsf.gov/adgeo/geo2000.htm).

Determining how natural fluctuations and anthropogenic factors may impact the water cycle and its function as an agent of transport for multiple biologically and geochemically reactive substances is a major scientific challenge for the geosciences in the coming years. The challenge is heightened as coupled processes of the environment alter the water cycle, energy transport and biogeochemical cycles. In order to meet this challenge, geoscientists must probe more deeply into the coupled, interactive processes of the water cycle, quantify inherent variabilities and alterations in the system(s) caused by global change, and determine the impacts of these processes on water resources and water cycle functions. The Water Cycle Research program envisioned for support by NSF focuses on those fundamental processes and interactions where NSF can contribute basic understanding that complements other activities in Federal programs.

A number of recent technical reports have influenced the scope of science for this particular solicitation and may be of interest to prospective investigators:

"Geosciences Beyond 2000", NSF, 00-27; http://www.geo.nsf.gov/adgeo/geo2000.htm

"Strategic Plan for the Climate Change Science Program, Final Report, July 2003"; http://www.climatescience.gov/Library/stratplan2003/final/default.htm

"A Plan for a New Science Initiative on the Global Water Cycle", USGCRP, 2001; http://www.usgcrp.gov/usgcrp/Library/watercycle/wcsgreport2001/default.htm

"Grand Challenges in Environmental Sciences", NRC, 2001; http://www.nap.edu/books/0309072549/html/

"Envisioning the Agenda for Water Resources Research in the Twenty-First Century", NRC, 2001; http://www.nap.edu/books/0309075661/html

“Report on the Workshop on Emerging Research Questions for Limnology: The Study of Inland Waters”, ASLO, 2003; http://www.aslo.org/announce/limnology_screen.pdf

“Complex Environmental Systems; Synthesis for Earth Life and Society in the 21st Century”; NSF 2003; http://www.nsf.gov/geo/ere/ereweb/ac-ere/acere_synthesis_rpt_full.pdf

“RiOMar: The Transport, Transformation and Fate of Carbon in River Dominated Ocean Margins”, 2003; http://www.Tulane.edu/~riomar

"Arctic Freshwater Cycle: Land/Ocean Linkages", NSF 02-071; http://www.nsf.gov/pubs/2002/nsf02071/nsf02071.html

II. PROGRAM DESCRIPTION

The scope of this Program Solicitation encompasses innovative basic research that contributes to an enhanced understanding of the water cycle and its function as a transport agent for energy and mass (water and biologically/geochemically reactive substances). Proposals giving specific attention to (1) mass and energy transfer across the interfaces between land-atmosphere, land-ocean and ocean-atmosphere; (2) research that crosses traditional NSF Division (Atmospheric, Earth and Ocean Sciences) boundaries; and/or (3) research that crosses disciplinary boundaries with appropriate research teams, are especially encouraged. This Solicitation encourages investigators to integrate research and build interdisciplinary research teams to pursue topics that cannot readily be addressed by individual core programs within the National Science Foundation. Additionally, as Federal agencies other than the National Science Foundation bear primary responsibility for developing and maintaining an observational infrastructure required for the day-to-day assessment of water distribution, movement and quality, this Solicitation seeks to take advantage of (rather than extend) infrastructure. With this Solicitation, the second in a series of solicitations to study the fundamental processes that underpin the water cycle, the NSF Directorate for Geosciences builds upon the scientific momentum of the community and continues an open competition in support of innovative basic research into the science of the water cycle and its function.

Principal Investigators should carefully identify within the proposal the innovative aspects that are the focus of their project. They should also provide clear explanation and justification of the importance (within the context of the water cycle) of the enhanced understanding that will be generated by their project. Regarding specifically the enhanced understanding of the water cycle and its function as a transport agent for mass and energy, the following areas of research are presented as examples of concepts and projects that could be included under this solicitation but do not specifically define or limit what is possible.

1. **Pathways and fluxes of water, solids and dissolved components among hydrologic reservoirs** --- fluxes across interfaces, rates of flux changes; mechanisms and components of water and water-transported biogeochemical fluxes; the impacts of flux changes
2. **Causes of water cycle flux variability and water-transported mass/energy flux variability** --- natural and

anthropogenically-related extremes of the water cycle and water-transported fluxes; natural and anthropogenic causes of flux variability on pertinent time and space scales; local and remotely triggered causes of variability; the processes and mechanisms that control flux variability

3. **Prediction of water cycle flux variations and water-transported mass/energy flux variations** --- quantification of processes and mechanisms that can be used to predict flux variations over longer/shorter times, in different places (times) and/or with changes in boundary conditions and forcing functions (heterogeneity, land use, land cover, etc.)
4. **Flux linkages and coupling between the mass/energy transport function of the water cycle and biogeochemical systems of the Earth ---** quantification of the coupled, interdependent interactions among the water and the important biologically and geochemically reactive substances

The documents cited above provide examples of the kind of research that might be pursued in this Water Cycle Research program. As gleaned from the documents cited above, the following are illustrative examples only and DO NOT define nor imply priority for this competition:

- Impacts of ground and surface water discharges on the physical, biogeochemical and ecological processes within coastal and nearshore marine waters and the mechanisms that control the gross and net fluxes across these interfaces
- Chemical and biological interactions of water, biota, soils, and landforms from precipitation to river discharge including the hyporheic zone
- Development of numerical models and statistical techniques for understanding and predicting droughts, floods and transport events and their impact on mass/energy transport and ecosystems locally and downstream
- Characterization and prediction of water and mass/energy fluxes at pertinent temporal and spatial scales *(*with justification of pertinence)
- Subsurface transport/flow and biogeochemical fluxes within soils, alluvial aquifers and through geological formations (time scales of days to decades) and their fluxes across pertinent interfaces (with justification of pertinence)
- Impacts of remote ocean surface characteristics on hydrologic variability and/or biogeochemical fluxes on distant land areas (teleconnections)
- Vadose/unsaturated zone biogeochemical reaction, transport and water fluxes and their functional dependence on rainfall duration, intensity and periodicity
- Transport and partitioning of atmospheric water vapor from evaporation sources to precipitation sinks across the land surface and in reservoirs with different residence times and/or its biogeochemical impact
- Numerical simulation of the water cycle and the biogeochemical flux variability across interfaces among the atmosphere, land and ocean for paleo-, present day and future conditions
- Quantification of local and regional feedback mechanisms that affect the response of hydrologic systems to local and external forcing factors
- Numerical simulation for coupling component models and effective methods for representing subgrid-scale processes in system models
- Effects of natural and human induced land use and land cover changes on the cycling of water and the transport of dissolved and particulate constituents
- Ecosystem feedbacks to the water cycle and water-transported nutrient fluxes
- ... many others

This Solicitation seeks proposals to integrate research and to build research teams from the disciplinary sciences to pursue topics that cannot readily be addressed by core programs within the National Science Foundation. Furthermore, it is expected that the momentum built by these innovative collaborations will steer the research community into pursuing even larger efforts in water cycle science.

III. ELIGIBILITY INFORMATION

The categories of proposers identified in the Grant Proposal Guide are eligible to submit proposals under this program announcement/solicitation. There is no PI eligibility limit, nor is their a limit on the number of proposals that can be submitted by an institution.

IV. AWARD INFORMATION

Approximately $5,000,000 is expected to be available for the FY2005 competition pending the availability of funds. An estimated 7-15 total awards will be made. This Solicitation encourages projects of a 3 to 5 year duration; awards will be funded as standard grants. Awards from $100,000 to $800,000 total will be considered under this Solicitation. Award size and duration will be commensurate with the project scope.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Full Proposal Instructions:

Proposals submitted in response to this program announcement/solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF *Grant Proposal Guide* (GPG). The complete text of the GPG is available electronically on the NSF Website at: http://www.nsf.gov/cgi-bin/getpub?gpg. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from pubs@nsf.gov.

Principal Investigators should carefully identify within the proposal the innovative aspects that are the focus of their project. They should also provide clear explanation and justification of the importance (within the context of the water cycle) of the enhanced understanding that will be generated by their project.

Proposals should work from clear theoretical foundations grounded in the relevant literature and observations. Proposals should be well organized, show thoughtful (experimental) design, include a team and an organization suited to the question, and propose the collection/use of data and/or information sufficient to the task. Proposals should specify the research methods to be used, the expertise that each team member would bring to the project, and how and where results would be disseminated. Where appropriate, investigators are encouraged to work in association with existing projects, observational networks, experimental watersheds, or research centers, whether supported by NSF or other agencies. In such proposals, the project description should make clear how the proposed work differs from and augments activities already supported. A letter stating the specifics of cooperation or support from the on-going activity for the proposed project should be included as Supplementary Documentation.

The Water Cycle Research Program will support the use of innovative instrumentation and associated software for observing, modeling and analyzing complex water cycle processes. Proposals should clearly discuss how the instrumentation and the field measurement techniques or strategies will be used. However, proposals for the development of specific in situ instrumentation or remote sensing technologies are directed to other programs.

Proposers are reminded to identify the program announcement/solicitation number (04-577) in the program announcement/ solicitation block on the proposal Cover Sheet. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

B. Budgetary Information

Cost Sharing:

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

Budget Preparation Instructions:

Research Platform Requirements: Project requirements for research platform support must be explicitly described in the proposal. Costs should be clearly discussed in the budget justification and appropriate forms, requests, and/or supplemental documents should be appended to the proposal.

For purposes of preparing the proposal budget, two categories of platforms must be distinguished:

Platform costs that MUST appear in the proposal budget: These include costs incurred for the use, rental, or lease of relatively small platforms - for example, small marine craft, field vehicles, space and facilities support at remote field stations, etc. The grantee institution would be paying these costs directly to the operator.

Platform costs that MUST NOT appear in the proposal budget: These include costs incurred for specifically designated types of research platform support (research cruises, polar logistics, arctic logistics, use of aircraft or other Earth sciences and atmospheric sciences field facilities). The PI should submit a copy of the UNOLS request, OPP logistics form, ATM facilities form or EAR facilities form with the proposal. Please check with the Earthscope program officer for the latest applicable forms. The need for and estimate of the cost associated with the use of these major research platforms would not normally be included in the budget of an NSF proposal but **must be included as an appendix to the proposal**. Principal investigators are responsible for filing the appropriate requests with the operators of such major research platforms; a copy of the request must be attached as an appendix to the proposal.

C. Due Dates

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

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

July 26, 2004

D. FastLane Requirements

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

Submission of Electronically Signed Cover Sheets. The Authorized Organizational Representative (AOR) must electronically sign the proposal Cover Sheet to submit the required proposal certifications (see Chapter II, Section C of the Grant Proposal Guide for a listing of the certifications). The AOR must provide the required electronic certifications within five working days following the electronic submission of the proposal. Proposers are no longer required to provide a paper copy of the signed Proposal Cover Sheet to NSF. Further instructions regarding this process are available on the FastLane Website at: http://www.fastlane.nsf.gov

VI. PROPOSAL REVIEW INFORMATION

A. NSF Proposal Review Process

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

The National Science Board approved revised criteria for evaluating proposals at its meeting on March 28, 1997 (NSB 97-

72). All NSF proposals are evaluated through use of the two merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

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

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

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

The two National Science Board approved merit review criteria are listed below (see the Grant Proposal Guide Chapter III.A for further information). The criteria include considerations that help define them. These considerations are suggestions and not all will apply to any given proposal. While proposers must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which he/she is qualified to make judgments.

What is the intellectual merit of the proposed activity?
How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of the prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

What are the broader impacts of the proposed activity?
How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

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

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

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

Additional Review Criteria:

High priority will be given to those proposals with the potential to break new interdisciplinary ground and that are distinct from what might be submitted to NSF's core programs.

The time and dollar amount requested should be appropriate to the question posed, the methodological design and the necessary manpower. Competitive proposals should include a question worth asking, a workable methodological design and an answer that is both achieveable and contributes to true advances in the integration and synthesis of the disciplinary components including those that cross typical disciplinary and/or divisional boundaries.

B. Review Protocol and Associated Customer Service Standard

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

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

A summary rating and accompanying narrative will be completed and submitted by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, are sent to the Principal Investigator/Project Director by the Program Director. In addition, the proposer will receive an explanation of the decision to award or decline funding.

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

In all cases, after programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at their own risk.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See section VI.A. for additional information on the review process.)

B. Award Conditions

An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (NSF-GC-1); * or Federal Demonstration Partnership (FDP) Terms and Conditions * and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreement awards also are administered in accordance

with NSF Cooperative Agreement Terms and Conditions (CA-1). Electronic mail notification is the preferred way to transmit NSF awards to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

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

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/cgi-bin/getpub?gpm. The GPM is also for sale through the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402. The telephone number at GPO for subscription information is (202) 512-1800. The GPM may be ordered through the GPO Website at http://www.gpo.gov.

C. Reporting Requirements

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

Within 90 days after the expiration of an award, the PI also is required to submit a final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for the PI and all Co-PIs. PIs should examine the formats of the required reports in advance to assure availability of required data.

PIs are required to use NSF's electronic project reporting system, available through FastLane, for preparation and submission of annual and final project reports. This system permits electronic submission and updating of project reports, including information on project participants (individual and organizational), activities and findings, publications, and other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system.

VIII. CONTACTS FOR ADDITIONAL INFORMATION

General inquiries regarding this program should be made to:

- Lydia Dumenil-Gates, Program Director, Directorate for Geosciences, Division of Atmospheric Sciences, 775 S, telephone: (703) 292-8522, fax: (703) 292-9022, email: lgates@nsf.gov
- L. Douglas James, Program Director, Directorate for Geosciences, Division of Earth Sciences, 785 S, telephone: (703) 292-8549, email: ldjames@nsf.gov
- Rodey Batiza, Program Director, Directorate for Geosciences, Division of Ocean Sciences, 725 N, fax: (703) 292-9085, email: rbatiza@nsf.gov

For questions related to the use of FastLane, contact:

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

IX. OTHER PROGRAMS OF INTEREST

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

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

ABOUT THE NATIONAL SCIENCE FOUNDATION

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

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities and persons with disabilities to compete fully in its programs. In accordance with Federal statutes, regulations and NSF policies, no person on grounds of race, color, age, sex, national origin or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF, although some programs may have special requirements that limit eligibility.

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

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at http://www.nsf.gov

- **Location:** 4201 Wilson Blvd. Arlington, VA 22230
- **For General Information** (NSF Information Center)**:** (703) 292-5111
- **TDD (for the hearing-impaired):** (703) 292-5090
- **To Order Publications or Forms:**

  Send an e-mail to: pubs@nsf.gov

  or telephone: (703) 292-7827

- **To Locate NSF Employees:** (703) 292-5111

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to applicant institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

An agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid OMB control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton, Reports Clearance Officer, Division of Administrative Services, National Science Foundation, Arlington, VA 22230.

OMB control number: 3145-0058.

National Science Foundation
Celebrating 50 Years

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