

Joint DMS/NIGMS Initiative to Support Research in the Area of Mathematical Biology

Program Announcement

NSF 02-125

DIVISION OF MATHEMATICAL SCIENCES
DIRECTORATE FOR MATHEMATICAL AND PHYSICAL SCIENCES

NATIONAL INSTITUTE FOR GENERAL MEDICAL SCIENCES
NATIONAL INSTITUTES OF HEALTH

DEADLINE(S): August 11, 2002
June 30, 2003
June 30, 2004



NATIONAL INSTITUTE FOR GENERAL MEDICAL SCIENCES



NATIONAL SCIENCE FOUNDATION



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SUMMARY OF PROGRAM REQUIREMENTS

GENERAL INFORMATION

Program Title: Joint DMS/NIGMS Initiative to Support Research in the Area of Mathematical Biology

Synopsis of Program: The Division of Mathematical Sciences in the Directorate for Mathematical and Physical Sciences at the National Science Foundation and the National Institute of General Medical Sciences at the National Institutes of Health plan to support research in mathematics and statistics related to mathematical biology research. Both agencies recognize the need for additional research at the boundary between the mathematical sciences and the life sciences. This competition is designed to encourage new collaborations at this interface, as well as to support existing ones. Awards made through this competition are dependent upon responsiveness of the proposals to the announcement, the quality of the proposed research, and the availability of funds. DMS and NIGMS anticipate making 20-25 awards totaling about \$6 million, in each of fiscal years 2003-2005. The projected range is from \$100,000 to \$400,000 per award per year (total costs), with durations of 4-5 years. Awards made from this competition may be made by either DMS or NIGMS, at the option of the agencies, not the grantee.

Cognizant Program Officer(s):

- Dr. Keith N. Crank (General Questions), Mathematical Sciences, Program Director, Mathematical and Physical Sciences, Division of Mathematical Sciences, Room 1025, telephone: 703-292-4880, e-mail: kcrank@nsf.gov.
- Dr. Michael H. Steuerwalt (Mathematical Questions), Applied and Computational Mathematics, Program Director, Mathematical and Physical Sciences, Division of Mathematical Sciences, Room 1025, telephone: 703-292-4860, e-mail: msteuerw@nsf.gov.
- Dr. John Stufken (Statistical Questions), Statistics, Program Director, Mathematical and Physical Sciences, Division of Mathematical Sciences, Room 1025, telephone: 703-292-4881, e-mail: jstufken@nsf.gov.
- Dr. John Whitmarsh (Biological Questions), Program Director, Division of Cell Biology and Biophysics, NIGMS, Building 45, NIGMS, NIH, telephone: 301-594-0828, e-mail: whitmarj@nigms.nih.gov.
- Dr. James Anderson (Biological Questions), Program Director, Division of Genetics and Developmental Biology, NIGMS, Room 2AS.25A, Building 45, NIGMS, NIH, telephone: 301-594-0943, e-mail: andersoj@nigms.nih.gov.
- Dr. Samuel M. Scheiner (Biological Questions), Program Director, Directorate for Biological Sciences, Division of Environmental Biology, Room 635, telephone: 703-292- 7175 e-mail: sscheine@nsf.gov

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

- 47.049 --- Mathematical and Physical Sciences
- 93.821 --- NIGMS Cell Biology and Biophysics
- 93.862 --- NIGMS Genetics and Developmental Biology
- 93.859 --- NIGMS Pharmacology, Physiology and Biological Chemistry

ELIGIBILITY INFORMATION

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

AWARD INFORMATION

- **Anticipated Type of Award:** Standard or Continuing Grant
- **Estimated Number of Awards:** 20-25
- **Anticipated Funding Amount:** \$6 million in each of FY 2003-2005, subject to availability of funds. Award sizes are expected to range from \$100,000 to \$400,000 per year with durations of 4-5 years.

PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

- ***Full Proposal Preparation Instructions:*** Deviations From Standard Preparation Guidelines
 - The program announcement/solicitation contains deviations from the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full program announcement/solicitation for further information.

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required
- **Indirect Cost (F&A) Limitations:** None
- **Other Budgetary Limitations:** None

C. Deadline/Target Dates

- **Letter of Intent Due Date(s):** None
- **Preproposal Due Date(s):** None
- **Full Proposal Due Date(s):** August 11, 2002, June 30, 2003, and June 30, 2004

D. FastLane Requirements

- **FastLane Submission:** Required
- **FastLane Contact(s):**
 - Directorate for Mathematical and Physical Sciences, Division of Mathematical Sciences, Room 1005, telephone: 703-292-8802, e-mail: dmsfl@nsf.gov.

PROPOSAL REVIEW INFORMATION

- **Merit Review Criteria:** National Science Board and NIH approved criteria. Additional merit review considerations apply. Please see the full program announcement/solicitation for further information.

AWARD ADMINISTRATION INFORMATION

- **Award Conditions:** Additional award conditions apply. Please see the program announcement/solicitation for further information.
- **Reporting Requirements:** Additional reporting requirements apply. Please see the full program announcement/solicitation for further information.

I. INTRODUCTION

Revolutionary opportunities have emerged for mathematically driven advances in biological research. These opportunities are recognized by the National Institute of General Medical Sciences (NIGMS), as well as by the National Science Foundation (NSF). Expertise of the NSF in the mathematical sciences, along with its ties to the mathematical sciences research community, and the expertise of the NIH in biological and biomedical research make this an area where cooperation between the two agencies is appropriate.

This competition is designed to support research on mathematical problems related to biological problems in areas supported by NIGMS. A direct relationship between a biological application and the mathematics is expected. Research teams, which include scientists from both the life sciences community and the mathematical sciences community, are encouraged. Both new and existing collaborations will be supported. Proposals from individual investigators will need to make the case that the individual has expertise in both areas.

Successful proposals will identify innovative mathematics or statistics needed to solve an important biological problem. Research which would apply known mathematics or statistics to solve biological problems is not appropriate for this competition and should be submitted directly to NIH. Similarly, research in mathematics or statistics, which is not tied to a specific biological problem, should be submitted to the appropriate DMS Program at NSF. Applications designed to create new software tools based on existing models and methods will not be accepted in this competition.

II. PROGRAM DESCRIPTION

The Division of Mathematical Sciences within the Directorate for Mathematical and Physical Sciences and the National Institute of General Medical Sciences anticipate supporting research in the mathematical sciences with biological applications. Appropriate application areas are those currently supported by the National Institute of General Medical Sciences.

Proposals which are not appropriate for funding by NIGMS will be returned without review. Investigators are strongly encouraged to talk with an NIGMS contact person before submitting a proposal. Other questions should be addressed to the appropriate person in the list of contacts.

Examples of areas of research that are appropriate under this competition are the following:

- Evolutionary theory and practice arising from genomics advances;
- Statistical and other approaches to the discovery of genes contributing to complex behavior, and their environmental interactions;
- Explanatory and predictive models of the cellular state;
- Growth, motility, cell division, membrane trafficking, and other cellular behavior;
- Metabolic circuitry and dynamics;

- Signal transduction;
- Informational molecule dynamics;
- Design principles and dynamics of pattern formation in development and differentiation;
- New approaches to the prediction of molecular structure;
- Improved algorithms for structure determination by x-ray crystallography, NMR and electron microscopy;
- Simulations of the human systemic responses to burn, trauma and other injury;
- New approaches to understanding system wide effects of pharmacological agents and anesthetics, and their genetic and environmental modifiers.

These areas of research are examples only. They are not meant to be inclusive.

Mathematical scientists, both pure and applied, and others capable of developing the mathematical and statistical tools envisioned are encouraged to apply. The work that is supported under this initiative must impact biology and advance mathematics or statistics. Thus, collaborations between the applicant mathematical and appropriate biological scientists are expected. Other mechanisms to ensure impact are also possible and should be specified in the application.

III. ELIGIBILITY INFORMATION

The categories of proposers identified in the [Grant Proposal Guide](#) are eligible to submit proposals under this program announcement/solicitation. This includes scientists at Federally Funded Research and Development Centers (FFRDCs). Scientists at foreign institutions may also be supported, but proposals must be submitted by a US institution.

IV. AWARD INFORMATION

It is estimated that approximately \$6 million will be available for each year of this competition. Award sizes are expected to range from \$100,000 to \$400,000 per year (total costs) with durations of 4-5 years. Estimated program budget, number of awards and average award size/duration are subject to the availability of funds.

Upon conclusion of the review process, meritorious applications may be recommended for funding by either NIGMS or DMS, at the option of the agencies, not the applicant. Subsequent grant administration procedures will be in accordance with the individual policies of the awarding agency.

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 Web Site 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.

Biographical Sketches are limited to three pages each and are required for all senior personnel. In addition to the information required by the GPG, each Biographical Sketch must include a paragraph describing that person's role in the project.

Both NSF and NIH have rules regarding the use of human subjects and/or vertebrate animals in research. Proposals MUST include the information required by both agencies. See the NSF Grant Proposal Guide (Proposal Preparation, Special Guidelines) AND the PHS Form 398 (http://grants1.nih.gov/grants/funding/phs398/section_1.html#e_humansubs and http://grants1.nih.gov/grants/funding/phs398/section_1.html#f_vertibrate_animals) for additional information.

Proposers are reminded to identify the program solicitation number (Not Specified) in the program announcement/solicitation block on the proposal Cover Sheet. Proposals should be submitted to the Infrastructure Program, in the Division of Mathematical Sciences. 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 is not required in proposals submitted under this Program Announcement.

Indirect Cost (F&A) Limitations: None

Other Budgetary Limitations: None

C. Deadline/Target Dates

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

Full Proposals by 5:00 PM local time: August 11, 2002
June 30, 2003
June 30, 2004

D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this Program Announcement through the FastLane system. Detailed instructions for 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 Announcement 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. 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. Although the applicant, at the time of submission must not suggest the names of potential reviewers, NSF invites the proposer to list the names of 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.

Proposals will be reviewed against the following general review criteria established by the National Science Board. Following each criterion are potential considerations that the reviewer may employ in the evaluation. These are suggestions and not all will apply equally to any given proposal. Each reviewer will be asked to address only those that are relevant to the proposal and for which he/she is qualified to make judgements.

What is the intellectual merit of the proposed activity? (This criterion also includes the main considerations that are used by NIH to assess the merit of applications and assign priority scores. The specific NIH criteria are shown in Italics following the NSF considerations.)

How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? *Significance: Does this study address an important problem? If the aims of the application are achieved, how will scientific knowledge be advanced? What will be the effect of these studies on the concepts or methods that drive this field?*

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.) *Investigator: Is the investigator appropriately trained and well suited to carry out this work? Is the work proposed appropriate to the experience level of the principal investigator and other researchers (if any)?*

To what extent does the proposed activity suggest and explore creative and original concepts? *Innovation: Does the project employ novel concepts, approaches or methods? Are the aims original and innovative? Does the project challenge existing paradigms or develop new methodologies or technologies?*

How well conceived and organized is the proposed activity? *Approach: Are the conceptual framework, design, methods, and analyses adequately developed, well integrated, and appropriate to the aims of the project? Does the applicant acknowledge potential problem areas and consider alternative tactics?*

Is there sufficient access to resources? *Environment: Does the scientific environment in which the work will be done contribute to the probability of success? Do the proposed experiments take advantage of unique features of the scientific environment or employ useful collaborative arrangements? Is there evidence of institutional support?*

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?

Principal Investigators should address the following elements in their proposal to provide reviewers with the information necessary to respond fully to both of the above-described merit review criteria. NSF staff will give these elements careful consideration 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

Proposals submitted to this competition will be evaluated based on their value in advancing mathematical or statistical theory or methodology, as well as their impact on important biological problems.

Where relevant, applications will also be reviewed with respect to the following:

- The adequacy of the plans to include both genders, minorities and their subgroups, and children as appropriate to the scientific goals of the research. If the proposed research includes human subjects plans for the recruitment and retention of subjects should be included. (see http://grants.nih.gov/grants/funding/women_min/guidelines_update.htm and <http://grants.nih.gov/grants/funding/children/children.htm>)
- The reasonableness of the proposed budget and duration in relation to the proposed research.
- The adequacy of the proposed protection for humans, animals, or the environment, to the extent they may be adversely affected by the project proposed in the application.

A summary rating and accompanying narrative will be completed and signed 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.

B. Review Protocol and Associated Customer Service Standard

All proposals are carefully reviewed by at least three other persons outside NSF/NIH who are experts in the particular field represented by the proposal. Proposals submitted in response to this announcement/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.

NSF will be able to tell applicants whether their proposals have been declined or recommended for funding within six months for 95 percent of proposals. The time interval begins on the proposal deadline or target date or from the date of receipt, if deadlines or target dates are not used by the program. 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 its own risk.

For those grants to be considered for funding by NIH, the applicant will be asked to prepare a second submission on the standard PHS 398 form. The results of the review will be presented to the National Advisory General Medical Sciences Council for the second level of review. This review is designed to assess the relevance of proposals to the mission of NIGMS. Subsequent to the Council review, NIGMS will make its funding determination and selected awards will be made.

VII. AWARD ADMINISTRATION INFORMATION

This section provides an overview of the award administration policies and process for the NSF. The NIH has similar procedures and requirements with some differences in details and deadlines. For more information on NIH policy and requirements for grants, see <http://grants.nih.gov/grants/oer.htm>. Specific questions on NIH and NIGMS policies can be addressed to the contacts listed at the end of this announcement.

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 or by a Grants Management Officer at NIGMS. 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) 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 Web site 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 Web site 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 Web site at <http://www.gpo.gov>.

C. Reporting Requirements

Grants made by NSF will be subject to NSF's reporting requirements. Grants made by NIH will be subject to NIH's reporting requirements. The following information is for NSF grants only. For information about NIH reporting requirements, contact the NIH grants officer listed in the next section.

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.

Approximately 30 days before expiration, NSF will send a notice to remind the PI of the requirement to file the final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

NSF has implemented an electronic project reporting system, available through FastLane. 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 Joint NSF/NIGMS Initiative to Support Research in the Area of Mathematical Biology should be made to:

- Dr. Keith N. Crank (General Questions), Mathematical Sciences, Program Director, Mathematical and Physical Sciences, Division of Mathematical Sciences, Room 1025, telephone: 703-292-4880, e-mail: kcrank@nsf.gov.

- Dr. Michael H. Steuerwalt (Mathematical Questions), Applied and Computational Mathematics, Program Director, Mathematical and Physical Sciences, Division of Mathematical Sciences, Room 1025, telephone: 703-292-4860, e-mail: msteuerw@nsf.gov.
- Dr. John Stufken (Statistical Questions), Statistics, Program Director, Mathematical and Physical Sciences, Division of Mathematical Sciences, Room 1025, telephone: 703-292-4881, e-mail: jstufken@nsf.gov.
- Dr. John Whitmarsh (Biological Questions), Program Director, Division of Cell Biology and Biophysics, NIGMS, Building 45, NIGMS, NIH, telephone: 301-594-0828, e-mail: whitmarj@nigms.nih.gov.
- Dr. James Anderson (Biological Questions), Program Director, Division of Genetics and Developmental Biology, NIGMS, Room 2AS.25A, Building 45, NIGMS, NIH, telephone: 301-594-0943, e-mail: andersoj@nigms.nih.gov.
- Dr. Samuel M. Scheiner (Biological Questions), Program Director, Directorate for Biological Sciences, Division of Environmental Biology, Room 635, telephone: 703-292-7175, e-mail: sscheine@nsf.gov

For questions related to the use of FastLane, contact:

- Directorate for Mathematical and Physical Sciences, Division of Mathematical Sciences, Room 1005, telephone: 703-292-4854, e-mail: dmsfl@nsf.gov.

For questions related to NIGMS grants management issues, contact:

- Joe Ellis, Grants Management Officer, NIGMS, NIH; telephone: 301-594-5135, e-mail: ellisj@nigms.nih.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 Web site 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) (<http://www.nsf.gov/home/cns/start.htm>) to be notified of new funding opportunities that become available.

NIGMS has a number of programs related to complex systems and the desire to bring mathematicians into the area of biomedical research. Information can be obtained at: http://www.nigms.nih.gov/funding/complex_systems.html.

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 (unless otherwise specified in the eligibility requirements for a particular program).

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 program announcement/solicitation for further information.

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 or (800) 281-8749, FIRS at 1-800-877-8339.

The National Science Foundation is committed to making all of the information we publish easy to understand. If you have a suggestion about how to improve the clarity of this document or other NSF-published materials, please contact us at plainlanguage@nsf.gov.

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.

Pursuant to 5 CFR 1320.5(b), 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, or to Office of Information and Regulatory Affairs of OMB, Attention: Desk Officer for National Science Foundation (3145-0058), 725 17th Street, N.W. Room 10235, Washington, D.C. 20503.

OMB control number: 3145-0058.

Replaces NSF 01-128