International Materials Institutes (IMI)

Toward an International Materials Research Network

PROGRAM SOLICITATION
NSF 08-558

REPLACES DOCUMENT(S):
NSF 03-593

National Science Foundation

Directorate for Mathematical & Physical Sciences
Division of Materials Research

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

July 15, 2008

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

International Materials Institutes (IMI)

Synopsis of Program:

The National Science Foundation supports International Materials Institutes (IMIs) in order to enhance international collaboration between U.S. researchers and educators and their counterparts worldwide. These Institutes advance fundamental materials research by coordinating international research and education projects involving condensed matter and materials physics, solid state and materials chemistry, polymers, metals, ceramics, electronic materials, biomaterials and, in general, the design, synthesis, and characterization of and phenomena in materials to meet global and regional needs. The Institutes must be university-based and provide a research environment that will attract leading scientists and engineers. The Institutes' long term goal is the creation of a worldwide network in materials research and the development of a generation of scientists and engineers with enhanced international leadership capabilities. A critically important aspect of an IMI is its potential impact on advancing materials research on an international scale and developing an internationally competitive generation of materials researchers, and this distinguishes an IMI from other materials research centers that NSF supports.

Representative activities of an IMI may include, for example: identifying areas of important and innovative research for joint collaborative programs; organizing and coordinating international exchange programs; establishing mechanisms for long-term international collaborations among academia, industrial and government agencies and laboratories; organizing international workshops on materials research and education, and coordinating international research experiences for students and postdoctoral scholars; developing internet-based resources with video capabilities for international conferencing and learning; developing and supporting a materials research network that will provide access to research and education resources, such as searchable databases, publications, facilities, instruments, and experts; enhancing global public awareness of economic and societal contributions by materials researchers; and partnering with states, private foundations, industry, national laboratories, international organizations, other universities, centers, and national facilities to accomplish the stated goals of the IMI.

Through the new Cyber-enabled Discovery and Innovation (CDI) initiative, NSF is committed to development and deployment of tools and techniques for remote collaboration, sharing of data, remote control of instrumentation, and development of virtual organizations that are not constrained by geography. NSF also recognizes the importance of cyber-tools for promoting and maintaining partnerships that transcend national boundaries. The IMI program is especially well-positioned to benefit from the ideas embodied in CDI and IMI proposals that incorporate those ideas are 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.

- Michael Scott, 1065.29, telephone: (703) 292-4771, email: mjscott@nsf.gov

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

- 47.049 --- Mathematical and Physical Sciences

Award Information

Anticipated Type of Award: Continuing Grant

Estimated Number of Awards: 4 to 8, depending on quality of proposals and availability of funds

Anticipated Funding Amount: $4,000,000 to $5,000,000 estimated total in FY 2009, depending on availability of funds, with $600,000 to $1,200,000 per year per award.

Eligibility Information

Organization Limit:

Proposals may only be submitted by the following:

- Universities and Colleges - Universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Such organizations also are referred to as academic institutions.

PI Limit:

None Specified

Limit on Number of Proposals per Organization: 1

An organization may not be the lead organization in more than one proposal.

Limit on Number of Proposals per PI: 1

An individual may be the Principal Investigator in only one proposal.

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

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

  July 15, 2008

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: Standard NSF reporting requirements apply.

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I. INTRODUCTION

The basic properties of materials frequently define the capabilities, potential, reliability, and limitations of technology. Improved materials and processes will play an ever-increasing role in efforts to improve energy efficiency, promote environmental protection, reduce health-care costs, develop an information infrastructure, and provide modern and reliable transportation and civil infrastructure systems. Advances in materials research enable progress across a broad range of scientific disciplines and technological areas with dramatic impacts on society.

Continued progress in materials research is increasingly dependent upon collaborative efforts among chemists, physicists, biologists, mathematicians and engineers, as well as closer coordination among funding agencies and effective partnerships involving universities, industry, national laboratories, and international organizations. Because of the rapidly growing interdependence of regional priorities, partnerships are not only important at the national level but also from a global perspective.

With this in mind, the National Science Foundation (NSF) supports International Materials Institutes (IMIs) that enhance international collaboration between US researchers and educators and their counterparts in specific areas of the world such as major regions of Africa, the Americas, Asia, Europe, or the Pacific region. The Institutes' long term goal is the creation of a worldwide network in materials research and the development of a generation of scientists and engineers with enhanced international leadership capabilities.

As a result of the first IMI competition held in FY 2002, NSF established three International Materials Institutes. In FY 2004 NSF held a second IMI competition and established three additional IMIs. Information about currently funded IMIs can be found at http://www.nsf.gov/mps/dmr/awards/imi.jsp. Existing IMIs may compete against new proposals for continuing NSF support.

The report “Revolutionizing Science and Engineering through Cyberinfrastructure: Report of the NSF Blue-Ribbon Advisory Panel on Cyberinfrastructure” shows that the manner in which scientific and engineering research and education are conducted will be radically transformed by cyberinfrastructure. (http://www.cise.nsf.gov/sci/reports/atkins.pdf). The NSF Division of Materials Research shares this vision and held a workshop that identified research and education frontiers that would be enabled by investments in cyberinfrastructure. (http://www.mcc.uiuc.edu/nsf/ciw_2006/). The tools collectively referred to as cyberinfrastructure can enable new research and education activities through remote observation and control of instrumentation, sharing of computational resources and databases, computational modeling and visualization, and, more generally, creation of new research and education partnerships which transcend distance and national boundaries. The IMI program embodies all of these activities and cyberinfrastructure can extend the utility and variety of the partnerships that can be created in an IMI. Moreover, the access to expertise and resources that cyberinfrastructure provides can broaden participation in materials research and education to create a truly inclusive community across national boundaries on the scale envisioned in an IMI and, as such, development and use of cyberinfrastructure and related tools are strongly encouraged.

II. PROGRAM DESCRIPTION

The objective of the International Materials Institutes is to advance materials research by coordinating international projects involving condensed matter and materials physics; solid state and materials chemistry; and the design, synthesis, and characterization of materials to meet global and regional needs. A critically important aspect of an IMI is its potential impact on advancing materials research on an international scale and developing an internationally competitive generation of materials researchers, and this distinguishes an IMI from other materials research centers that NSF supports.

The Institutes must be university-based (single or multi-campus), and provide a research environment that will attract leading scientists and engineers. Various models may be considered for these institutes, including, but not limited to, broad-based institutes focusing on the advancement of materials research and education on a global scale; institutes focusing on the advancement of an area of materials research for which international collaborations are essential, either on a global or regional scale; and institutes based on consortia of universities, centers, and national facilities that enhance their international impact.

Each IMI must address two long-term goals: (1) creating elements of a global materials research network designed to coordinate and

support the rapidly growing interdependence of materials research priorities and related activities carried out in all regions of the world; and (2) developing a new generation of students, postdoctoral scholars, and materials researchers and educators with enhanced international leadership capabilities. The activities of the IMI may include some or all of the following:

- Identifying areas of important and innovative research for joint international collaborative programs;
- Organizing and coordinating international exchange programs at all professional levels;
- Establishing mechanisms for long-term international collaborations among academia, industrial and government agencies and laboratories;
- Organizing international workshops and coordinating international research experiences for students and post-doctoral scholars in the materials field;
- Developing internet-based activities with video capabilities for international conferencing and learning;
- Developing techniques for remote control of instrumentation and data-sharing across long distances;
- Developing and supporting research and education resources such as searchable databases, publications, facilities, instruments, and information about education activities and research expertise;
- Implementing at the international level materials education efforts designed to increase public awareness of the contributions materials research makes to society;
- Linking with institutes and research centers worldwide, including other IMIs, to coordinate and enhance materials research and education efforts;
- Partnering with states, private foundations, industry, national laboratories, international organizations, other universities, centers, and national facilities to accomplish the stated goals of the IMI.

Each IMI has the responsibility to manage and evaluate its own operation with respect to program administration, planning, content and direction. NSF support is intended to promote optimal use of university resources and capabilities, and to provide maximum flexibility in setting research directions, developing cooperative activities with other institutions, nations, global regions and international communities, and aiding the international materials research community to respond quickly and effectively to new opportunities to advance materials research and education.

It is anticipated that the IMIs will interact among themselves, as appropriate to the nature of each Institute, with the long term goal of developing a network among the IMIs. Towards this goal, the IMI Directors are expected to meet annually to discuss matters of common interest, share best practices, and examine opportunities for leveraging efforts.

III. AWARD INFORMATION

NSF anticipates total funding between $4,000,000 and $5,000,000 in FY 2009, contingent upon availability of funds. NSF support for each IMI is expected to range from $600,000 to $1,200,000 per year. Awards will be made for an initial period of up to five years. Funding for the fifth year will be contingent upon the outcome of a comprehensive review during the fourth year. The number of awards will depend on the availability of funds and the quality of proposals received. The anticipated date of awards is February 4, 2009.

IV. ELIGIBILITY INFORMATION

Organization Limit:

Proposals may only be submitted by the following:

- Universities and Colleges - Universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Such organizations also are referred to as academic institutions.

PI Limit:

None Specified

Limit on Number of Proposals per Organization: 1

An organization may not be the lead organization in more than one proposal.

Limit on Number of Proposals per PI: 1

An individual may be the Principal Investigator in only one proposal.

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.

The following instructions supplement the GPG and NSF Grants.gov Application Guide guidelines and supersede such guidelines regarding page limits for each section of the proposal as noted below:

- Project Summary

  Provide a clear rationale for and description of the proposed IMI and its potential impact on advancing international materials research and developing an internationally competitive generation of materials researchers. Briefly describe the vision for the Institute; its institutional setting; its proposed international scope and organization, including international networking components; activities in materials research and education and their integration; plans for the development of human resources; and management plan. It must clearly address in separate statements:

  - the intellectual merit of the proposed activity; and
  - the broader impacts resulting from the proposed activity.

  Limit: 2 pages.

- Project Description (20 pages total) should include the following:

  1. List of Participants

     List each senior investigator (faculty level or equivalent), by full name, and her/his institutional and departmental affiliation; also enter each name in "Add/Delete Non Co-PI Senior Personnel" FastLane Form.

  2. Results from Prior NSF Support

     Describe achievements under prior NSF support that pertain to the present proposal. Limit: 5 pages.

     The following activities, (3) through (11), should be described to an extent consistent with the nature of the proposed IMI:

  3. International Research Collaborations

     Describe how the Institute will identify areas of important and innovative research for joint collaborative programs and establish mechanisms for substantive, long-term international collaborations involving academic, industrial and/or government laboratories. List names and institutions of foreign collaborators.

  4. Research Opportunities

     Describe how the Institute will attract leading materials researchers as participants. Describe the research themes to be addressed and the research proposed by the IMI, and describe proposed mechanisms for networking with other IMIs, universities, centers, and national facilities.

  5. Education and Training

     Describe mechanisms to enhance materials education at the international level and increase the public's awareness of the contributions materials research makes to society.

  6. Exchange Programs

     Describe the proposed activities of the Institute towards human resource development, including plans for international exchange programs involving undergraduate and graduate students, postdoctoral scholars, and junior and senior investigators.

  7. Partnerships

     Describe how the Institute plans to develop partnerships with states, private foundations, industries, national laboratories, and international organizations in order to fully advance the stated goals of the IMI.

  8. Cyberinfrastructure

     Describe how the Institute plans to provide capabilities for international conferencing and learning, and develop and support a materials network that will provide access to research and education resources, such as searchable databases, publications, and information about education activities and professional expertise. Software architectures should address both security and openness issues. If applicable, describe how the Institute would provide access for remote use of instruments and facilities through the internet.

  9. International Workshops

     Describe the role of the Institute in facilitating the advancement of materials research through national and international scientific organizations, international meetings, symposia and workshops, and describe the role of the institute in coordinating international research experiences for students and postdoctoral scholars in materials research.

  10. International Materials Research Network

      Describe how the Institute plans to work with organizations in the US, other countries and world regions to create a global materials research network that would coordinate the efforts of regional networks, counterpart institutes and other organizations.

  11. Management

Describe the plans for administration of the Institute, including the functions of key personnel and the role of any proposed advisory committee, executive committee, and/or program committee or their equivalent. Describe the procedures and criteria that will be used to select, administer and evaluate the programs of the Institute.

NOTE: References are not part of the project description and therefore are not included in the 20-page limit.

- Budget.

  The budget request should include travel funds for the Principal Investigator, or IMI Director, to attend an annual coordinating meeting with other IMI Directors and NSF staff (see Section II). Such meeting may take place in the US or abroad.

- Biographical Sketches

  Include a biographical sketch for each senior participant (faculty level or equivalent) according to GPG guidelines.

- Current and Pending Support

  List current and pending support for each senior participant.

- Supplementary Documentation

  Include only letters documenting collaborative arrangements of significance to the IMI from participating institutions. Scan signed letters into the Supplementary Documents section of FastLane. For Grants.gov users, supplementary documents should be attached in Field 11 of the R&R Other Project Information Form. Limit: 5 pages

Proposers are reminded to identify the program solicitation number (NSF 08-558) 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

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

  July 15, 2008

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 judgements.

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

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.

Additional Review Criteria:

A critically important aspect of an IMI is its potential impact on advancing materials research on an international scale and developing an internationally competitive generation of materials researchers. In addition to the standard NSF review criteria, reviewers will be asked to use the following criteria:

- The merit of the proposed international activities and the expected mutual benefit to be derived from the contributions of the scientists and engineers in each country or region.
- Potential international and global impact of the IMI on advancing national and international collaborations that integrate materials research with education and foster interactive approaches to both.
- Participation of U.S.-based students, postdoctoral associates and junior researchers in international materials research and education experiences.
- Plans for contributing to the development of a worldwide materials research and education network, including development of partnerships with states, private foundations, industry, national laboratories, international organizations, other IMIs, universities, centers, and national facilities.
- Achievements under relevant prior NSF support, where applicable.
- Institutional setting and rationale for the Institute. Relationship to existing and planned institutional programs; capabilities in materials research and education; intellectual breadth of the research and education opportunities; potential for stimulating interdisciplinary international collaborations.
- Institutional arrangements, management plan, and budget. Institutional arrangements established toward the stated goals of the IMI. Likely effectiveness of the proposed management plan, including allocation of resources, plans and potential for implementing flexible and innovative programs, and plans for evaluating the programs of the Institute. Appropriateness of the requested budget.

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.

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:

- Michael Scott, 1065.29, telephone: (703) 292-4771, email: mjscott@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@nsf.gov.
- William P. Daniels, telephone: (703) 292-4755, email: wdaniels@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 40,000 proposals each year for research, education and training projects, of which approximately 11,000 are funded. In addition, the Foundation receives several thousand applications for graduate and postdoctoral fellowships. The agency operates no laboratories itself but does support National Research Centers, user facilities, certain oceanographic vessels and Antarctic research stations. The Foundation also supports cooperative research between universities and industry, US participation in international scientific and engineering efforts, and educational activities at every academic level.

Facilitation Awards for Scientists and Engineers with Disabilities provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See Grant Proposal Guide Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090 and (800) 281-8749, FIRS at (800) 877-8339.

The National Science Foundation Information Center may be reached at (703) 292-5111.

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

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

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

  Send an e-mail to: 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