

Emerging Models and Technologies for Computation (EMT)

Program Solicitation

NSF 07-523

Replaces Document(s):

NSF 05-626



National Science Foundation

Directorate for Computer & Information Science & Engineering
Division of Computing and Communication Foundations

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

February 16, 2007

REVISION NOTES

In furtherance of the President's Management Agenda, NSF has identified programs that will offer proposers the option to utilize Grants.gov to prepare and submit proposals, or will require that proposers utilize Grants.gov to prepare and submit proposals. Grants.gov provides a single Government-wide portal for finding and applying for Federal grants online.

In response to this program solicitation, proposers may opt to submit proposals via Grants.gov or via the [NSF FastLane](#) system. In determining which method to utilize in the electronic preparation and submission of the proposal, please note the following:

Collaborative Proposals. All collaborative proposals submitted as separate submissions from multiple organizations must be submitted via the [NSF FastLane](#) system. Chapter II, Section D.3 of the Grant Proposal Guide provides additional information on collaborative proposals.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Emerging Models and Technologies for Computation (EMT)

Synopsis of Program:

The EMT program seeks to advance the fundamental capabilities of computer and information sciences and engineering by capitalizing on advances and insights from areas such as biological systems, quantum phenomena, nanoscale science and engineering, and other novel computing concepts. To bring fundamental changes to software, hardware and architectural design aspects of future computing models, collaborations among computer scientists, engineers, mathematicians, biologists and other disciplinary scientists are imperative.

Research of interest should move beyond evolutionary technological advances to innovations that enable fundamentally different ways of computing. These innovations should promise much higher speeds/chip densities or should solve more complex problems than traditional approaches currently permit.

The EMT program supports cross- and inter-disciplinary research and education projects that explore ideas, theory and experiments which go beyond conventional wisdom and venture into a range of uncharted territories in order to advance computing capabilities, and/or that produce innovative curricula or educational materials to help advance the training of new experts in emerging computing models and technologies. Explicit efforts will be made to support untested theories and approaches that provide plausible but high-risk opportunities. Proposals that are not clearly collaborative and/or interdisciplinary in nature are likely to be less competitive.

Cognizant Program Officer(s):

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

- 47.070 --- Computer and Information Science and Engineering

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant or Cooperative Agreement

Estimated Number of Awards: 35 to 45 Up to 40 awards will be made, whose average size will be \$125,000/year up to three years. Up to 5 awards of \$500,000/year for well-integrated projects of larger scope are anticipated.

Anticipated Funding Amount: \$16,000,000 per year in fiscal year 2007 through 2009, pending the availability of funds

Eligibility Information

Organization Limit:

None Specified

PI Limit:

An investigator may participate as PI, co-PI or Senior Personnel in at most one proposal each calendar year in response to this solicitation.

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI:

None Specified

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Not Applicable
- **Full Proposals:**
 - Full Proposals submitted via FastLane: NSF Proposal and Award Policies and Procedures Guide, Part I: Grant Proposal Guide (GPG) Guidelines apply. 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.
 - Full Proposals submitted via Grants.gov: NSF Grants.gov Application Guide: A Guide for the Preparation

and Submission of NSF Applications via Grants.gov Guidelines apply (Note: The NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: <http://www.nsf.gov/bfa/dias/policy/docs/grantsgovguide.pdf>)

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required by NSF.
- **Indirect Cost (F&A) Limitations:** Not Applicable
- **Other Budgetary Limitations:** Not Applicable

C. Due Dates

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

February 16, 2007

Proposal Review Information Criteria

Merit Review Criteria: National Science Board approved criteria apply.

Award Administration Information

Award Conditions: Standard NSF award conditions apply

Reporting Requirements: Standard NSF reporting requirements apply

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I. INTRODUCTION

The EMT program seeks to advance the fundamental capabilities of computer and information sciences and engineering by capitalizing on advances and insights from areas such as biological systems, quantum phenomena, nanoscale science and engineering, and other novel computing concepts. To bring fundamental changes to software, hardware and architectural design aspects of future computing models, collaborations among computer scientists, engineers, mathematicians, biologists and other disciplinary scientists are imperative.

Research of interest should move beyond evolutionary technological advances to innovations that enable fundamentally different ways of computing. These innovations should promise much higher speeds/chip densities or should solve more complex problems than traditional approaches currently permit.

The EMT program supports cross- and inter-disciplinary research and education projects that explore ideas, theory and experiments which go beyond conventional wisdom and venture into a range of uncharted territories in order to advance computing capabilities, and/or that produce innovative curricula or educational materials to help advance the training of new experts in emerging computing models and technologies. Explicit efforts will be made to support untested theories and approaches that provide plausible but high-risk opportunities. Proposals that are not clearly collaborative and/or interdisciplinary in nature are likely to be less competitive.

II. PROGRAM DESCRIPTION

The EMT program will support research and education projects that investigate frameworks and foundations for novel computing models. Anticipated activities include, but are not limited to modeling and simulation of biosystems, design of computing models based on characteristics of biosystems, investigation of various aspects of quantum-based approaches to understanding and processing information, and nanoscale science approaches that will lead to better computing and communication systems. There are significant interdependencies among areas of interest in this cluster. The cluster seeks to promote interaction among these areas, while ultimately identifying promising new theoretical and experimental computing models.

Because of the exploratory nature of the work supported by EMT, the areas described in this solicitation are not limitations, rather they are illustrations, of research that is encouraged.

The EMT program also supports projects that develop innovative curricular materials and that have the potential to greatly improve higher education in EMT-related fields. Such projects may be proposed in stand-alone proposals or as one component in broader research and education proposals. Curriculum development activities must include strong justification of the need for the new materials and must include plans for disseminating them to the community and for evaluating their effectiveness.

Principal investigators range from faculty members beginning their careers to teams of senior investigators. Collaborations between computer scientists, engineers, and other disciplinary scientists are imperative because they have the potential to strengthen the resulting emerging models and technologies.

While each area described below deals with a set of specific topics internal to the subfield of interest, research issues inevitably spill over artificially imposed programmatic boundaries. The EMT program encourages proposals that transcend the confines of each of the sub-areas elaborated.

Computational biology

This area promotes understanding of biological systems in order to use them as models for new computing paradigms. Biology can serve as an existence proof that certain desirable behaviors are possible. Many biological behaviors and functions are desirable in a computing context. In-depth understanding of biological processes can provide (1) new insights on the strategic application of biology to advance computing, and (2) new perspectives on computational approaches that are enabled by the direct and active involvement of biology. In this respect, the emphasis of this research topic is on better techniques for modeling and simulation. The advancement of computational sciences has provided some avenues for simulation of living systems; however, a wide range of computational methods is required to enhance simulations. At one end are quantum, chemical and molecular dynamics, which predict behavior of biological systems at the atomic scale; these methods are currently limited by their need for high-end computing. At a higher scale of system complexity and size are

methods that combine experimental gene and protein sequence and structure data, as well as mathematical methods and physical simulations that predict the structure and function of proteins.

Examples of sub-areas of interest include, but are not limited to:

- Mathematical/stochastic modeling techniques for simulation and analysis of biosystems;
- New mathematical, computational and algorithmic tools/techniques specifically designed to deal with the complexity of biological systems;
- Modeling of genetic and biochemical networks at various scales; and
- Novel techniques for protein structure modeling and prediction and genome analysis.

Biologically motivated computational models

This area seeks to advance novel computational paradigms that draw inspirations from a systems biology perspective (e.g., multi-cell systems, organs, whole organisms and populations of organisms from bacteria to human). Systems biology examines the structure and dynamics of cellular and organismal function, rather than the characteristics of isolated parts of a cell or organism. Critical properties of biological systems such as complexity, robustness, reliability and degeneracy arise from the interactions of the components of a system as well as the features of those components. Although the dependence of these properties on the structure and features of biological systems are far from being well understood, they still might provide guidelines for design of artificial systems.

The use of biological systems as metaphors can lead to efficient information systems and technologies. There are many sources of inspirations from the cell to tissue and higher levels that suggest new models of computation, such as understanding the relationships between parallel architectures and the range of cell and tissue signaling systems with respect to improving latency and throughput. Another example is the exploitation of the parallel, distributed and emergent computational capabilities of particular genomic systems such as bacteria, yeast and *C. elegans* for developing robust adaptive evolving systems. Systemic metaphors can provide a basis for model development and a general framework for integrating a range of key constructs, such as hierarchy and organization. The idea of cognitive systems as metaphors may provide a basic conceptual structure to encapsulate general notions about networks, hierarchies and nesting across scale and time. Self-governance properties i.e., self-configuration, self-maintenance and self-optimization of nervous systems may offer insights on designing and managing large complex dynamical systems.

Examples of sub-areas of interest include, but are not limited to:

- Theories and models of computation that exploit biological properties, such as degeneracy to maintain robustness, and show promise for new kinds of information technologies and systems;
- Models inspired by small multi-cellular organisms for better rendering of a small set of vital biological functions;
- Theories that exploit similarities in biological network structures (from gene regulatory networks and biochemical networks to social networks) to model self-organization and self-assembly;
- Theories and architecture inspired by biological immune system components and processes;
- Theories and architecture that mimic the neurophysiological basis of behavior, including adaptive responses to a changing environment; and
- Novel computer architectures using nano/silicon/hybrid materials whose primary objective is to achieve essential capabilities of biological systems.

Quantum information science

The goal of this area is to facilitate new insights and understanding in the area of Quantum Information Science (QIS), ultimately leading to deeper unification of information sciences, quantum foundations, and molecular biology. This would lead to significant advances in computing capabilities.

QIS includes quantum computers, quantum communication, quantum optics, and other quantum-based and related approaches to processing and understanding information. There are two more fundamental, long-term issues in QIS: (1) research that probes the physical foundations that are relevant not only to QIS but to other areas of possible future technology; and (2) strategies to develop quantum computing principles for general-purpose computing and systems-level computing design, as well as special-purpose algorithms that transcend the limitations of special purpose algorithms now available for niche applications such as cryptography and number theory.

Examples of sub-areas of interest include, but are not limited to:

- Understanding of fundamental decoherence effects;
- Better understanding of novel types of entanglement;
- Development of a broad and general collection of quantum algorithms;
- Extension of concepts of information theory to the realm of quantum foundations and experiments;
- Quantum simulation of quantum systems (e.g., CAD like tools for quantum system design);

- Architectural modeling and design of quantum computers and systems;
- Use of quantum information in communication and networking; and
- Novel approaches to fault tolerance and to managing the stochastic errors in quantum systems.

Nanotechnology applications to computing and communication

The NSF-wide Nanoscale Science and Engineering program supports broad nanoscience and engineering research and education (NSF 04043, <http://www.nsf.gov/pubs/2004/nsf04043/nsf04043.pdf>). The EMT program supports complementary activities, with a focus on research that aids and advances the physical design/realization of novel computing, communication and information processing models. There is considerable evidence that building a physically stable structure, molecule by molecule, is quite feasible. For example, self-assembly - a method of fabrication that relies on chemicals forming larger structures without centralized or external control - is potentially an important technique for producing computing components at the nanoscale. Both theoretical and experimental research with proper emphasis on education are encouraged.

Examples of sub-areas of interest include, but are not limited to:

- Nanoscale architectures;
- Molecular communication for nanoscale machines
- Computing models at the nanometer scale; and
- Experimental system technologies at the nanometer scale.

III. AWARD INFORMATION

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

Anticipated Type of Award: Standard or Continuing Grants

Estimated Number of Awards: 35 to 45. NSF expects to make the following types of award(s): Standard or Continuing Grants. Up to 40 awards will be made, whose average size will be \$125,000/year up to three years. Up to 5 awards of \$500,000/year for well-integrated projects of larger scope are anticipated.

Requested project budgets may be smaller or larger than the averages. By requesting budgets consistent with their level of effort and other support, investigators can indicate their requirements to reviewers and NSF staff. This can aid NSF Program Officers in recommending awards that maintain program balance and best use NSF's limited funds. Investigators are encouraged to discuss budget requests with NSF program directors before submitting proposals.

Anticipated Funding Amount: \$16,000,000 per year in fiscal year 2007 through 2009 pending the availability of funds.

IV. ELIGIBILITY INFORMATION

Organization Limit:

None Specified

PI Limit:

An investigator may participate as PI, co-PI or Senior Personnel in at most one proposal each calendar year in response to this solicitation.

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI:

None Specified

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Full Proposal Preparation Instructions: Proposers may opt to submit proposals in response to this Program Solicitation via Grants.gov or via the NSF FastLane system.

- Full proposals submitted via FastLane: Proposals submitted in response to this program 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/publications/pub_summ.jsp?ods_key=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. Proposers are reminded to identify this program solicitation number 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.
- Full proposals submitted via Grants.gov: Proposals submitted in response to this program solicitation via Grants.gov should be prepared and submitted in accordance with the NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov. The complete text of the NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: (<http://www.nsf.gov/bfa/dias/policy/docs/grantsgovguide.pdf>). To obtain copies of the Application Guide and Application Forms Package, click on the Apply tab on the Grants.gov site, then click on the Apply Step 1: Download a Grant Application Package and Application Instructions link and enter the funding opportunity number, (the program solicitation number without the NSF prefix) and press the Download Package button. Paper copies of the Grants.gov Application Guide also may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from pubs@nsf.gov.

In determining which method to utilize in the electronic preparation and submission of the proposal, please note the following:

Collaborative Proposals. All collaborative proposals submitted as separate submissions from multiple organizations must be submitted via the NSF FastLane system. Chapter II, Section D.3 of the Grant Proposal Guide provides additional information on collaborative proposals.

B. Budgetary Information

Cost Sharing: Cost sharing is not required by NSF.

C. Due Dates

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

February 16, 2007

D. FastLane/Grants.gov Requirements

- **For Proposals Submitted Via FastLane:**

Detailed technical instructions regarding the technical aspects of 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 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>.

• For Proposals Submitted Via Grants.gov:

Before using Grants.gov for the first time, each organization must register to create an institutional profile. Once registered, the applicant's organization can then apply for any federal grant on the Grants.gov website. The Grants.gov's Grant Community User Guide is a comprehensive reference document that provides technical information about Grants.gov. Proposers can download the User Guide as a Microsoft Word document or as a PDF document. The Grants.gov User Guide is available at: <http://www.grants.gov/CustomerSupport>. In addition, the NSF Grants.gov Application Guide provides additional technical guidance regarding preparation of proposals via Grants.gov. For Grants.gov user support, contact the Grants.gov Contact Center at 1-800-518-4726 or by email: support@grants.gov. The Grants.gov Contact Center answers general technical questions related to the use of Grants.gov. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this solicitation.

Submitting the Proposal: Once all documents have been completed, the Authorized Organizational Representative (AOR) must submit the application to Grants.gov and verify the desired funding opportunity and agency to which the application is submitted. The AOR must then sign and submit the application to Grants.gov. The completed application will be transferred to the NSF FastLane system for further processing.

VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

Proposals received by NSF are assigned to the appropriate NSF program and, if they meet NSF proposal preparation requirements, for review. All proposals are carefully reviewed by a scientist, engineer, or educator serving as an NSF Program Officer, and usually by three to ten other persons outside NSF who are experts in the particular fields represented by the proposal. These reviewers are selected by Program Officers charged with the oversight of the review process. Proposers are invited to suggest names of persons they believe are especially well qualified to review the proposal and/or persons they would prefer not review the proposal. These suggestions may serve as one source in the reviewer selection process at the Program Officer's discretion. Submission of such names, however, is optional. Care is taken to ensure that reviewers have no conflicts with the proposer.

A. NSF Merit Review Criteria

All NSF proposals are evaluated through use of the two National Science Board (NSB)-approved merit review criteria: intellectual merit and the broader impacts of the proposed effort. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two NSB-approved merit review criteria are listed below. The criteria include considerations that help define them. These considerations are suggestions and not all will apply to any given proposal. While proposers must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which the reviewer is qualified to make judgements.

What is the intellectual merit of the proposed activity?

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

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.

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 date of receipt. The interval ends when the Division Director accepts the Program Officer's recommendation.

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

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

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

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

B. Award Conditions

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

*These documents may be accessed electronically on NSF's Website at http://www.nsf.gov/awards/managing/general_conditions.jsp?org=NSF. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from pubs@nsf.gov.

More comprehensive information on NSF Award Conditions and other important information on the administration of NSF awards is contained in the *NSF Award & Administration Guide (AAG)* Chapter II, available electronically on the NSF Website

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the Principal Investigator must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period. (Some programs or awards require more frequent project reports). Within 90 days after expiration of a grant, the PI also is required to submit a final project report.

Failure to provide the required annual or final project reports will delay NSF review and processing of any future funding increments as well as any pending proposals for that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

PIs are required to use NSF's electronic project-reporting system, available through FastLane, for preparation and submission of annual and final project reports. Such reports provide information on activities and findings, project participants (individual and organizational) publications; and, other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system. Submission of the report via FastLane constitutes certification by the PI that the contents of the report are accurate and complete.

VIII. AGENCY CONTACTS

General inquiries regarding this program should be made to:

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@nsf.gov.
- Velma Lawson, Integrative Activities Specialist, 1115 N, telephone: (703) 292-8910, fax: (703) 292-9059, email: vlawson@nsf.gov

For questions relating to Grants.gov contact:

- Grants.gov Contact Center: If the Authorized Organizational Representatives (AOR) has not received a confirmation message from Grants.gov within 48 hours of submission of application, please contact via telephone: 1-800-518-4726; e-mail: support@grants.gov.

IX. OTHER INFORMATION

The NSF Website provides the most comprehensive source of information on NSF Directorates (including contact information), programs and funding opportunities. Use of this Website by potential proposers is strongly encouraged. In addition, MyNSF (formerly the Custom News Service) is an information-delivery system designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF Regional Grants Conferences. Subscribers are informed through e-mail or the user's Web browser each time new publications are issued that match their identified interests. MyNSF also is available on NSF's Website at <http://www.nsf.gov/mynsf/>.

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

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) is an independent Federal agency created by the National Science Foundation Act

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

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

NSF receives approximately 40,000 proposals each year for research, education and training projects, of which approximately 11,000 are funded. In addition, the Foundation receives several thousand applications for graduate and postdoctoral fellowships. The agency operates no laboratories itself but does support National Research Centers, user facilities, certain oceanographic vessels and Antarctic research stations. The Foundation also supports cooperative research between universities and industry, US participation in international scientific and engineering efforts, and educational activities at every academic level.

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

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

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

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

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

- **Location:** 4201 Wilson Blvd. Arlington, VA 22230

- **For General Information** (NSF Information Center): (703) 292-5111

- **TDD (for the hearing-impaired):** (703) 292-5090

- **To Order Publications or Forms:**

Send an e-mail to: pubs@nsf.gov
or telephone: (703) 292-7827

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

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; and project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to proposer institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies or other entities needing information regarding applicants or nominees as part of a joint application review process, or in order to coordinate programs or policy; and to another Federal agency, court, or party in a court or Federal administrative proceeding if the government is a

party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004), and NSF-51, "Reviewer/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

An agency may not conduct or sponsor, and a person is not required to respond to, an information collection unless it displays a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding the burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to:

Suzanne H. Plimpton
Reports Clearance Officer
Division of Administrative Services
National Science Foundation
Arlington, VA 22230

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