

Methodology, Measurement, and Statistics (MMS)

PROGRAM SOLICITATION

NSF 08-561

REPLACES DOCUMENT(S):

NSF 06-571



National Science Foundation

Directorate for Social, Behavioral & Economic Sciences
Division of Social and Economic Sciences

Full Proposal Target Date(s):

August 16, 2008

August 16, Annually Thereafter

January 16, 2009

January 16, Annually Thereafter

IMPORTANT INFORMATION AND REVISION NOTES

A revised version of the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG), [NSF 11-1](#), was issued on October 1, 2010 and is effective for proposals submitted, or due, on or after January 18, 2011. Please be advised that the guidelines contained in [NSF 11-1](#) apply to proposals submitted in response to this funding opportunity. Proposers who opt to submit prior to January 18, 2011, must also follow the guidelines contained in [NSF 11-1](#).

Cost Sharing: The PAPPG has been revised to implement the National Science Board's recommendations regarding cost sharing. Inclusion of voluntary committed cost sharing is prohibited. In order to assess the scope of the project, all organizational resources necessary for the project must be described in the Facilities, Equipment and Other Resources section of the proposal. The description should be narrative in nature and must not include any quantifiable financial information. Mandatory cost sharing will only be required when explicitly authorized by the NSF Director. See the PAPP Guide Part I: *Grant Proposal Guide (GPG)* [Chapter II.C.2.g\(xi\)](#) for further information about the implementation of these recommendations.

Data Management Plan: The PAPPG contains a clarification of NSF's long standing data policy. All proposals must describe plans for data management and sharing of the products of research, or assert the absence of the need for such plans. FastLane will not permit submission of a proposal that is missing a Data Management Plan. The Data Management Plan will be reviewed as part of the intellectual merit or broader impacts of the proposal, or both, as appropriate. Links to data management requirements and plans relevant to specific Directorates, Offices, Divisions, Programs, or other NSF units are available on the NSF website at: <http://www.nsf.gov/bfa/dias/policy/dmp.jsp> See [Chapter II.C.2.j](#) of the GPG for further information about the implementation of this requirement.

Postdoctoral Researcher Mentoring Plan: As a reminder, each proposal that requests funding to support postdoctoral researchers must include, as a supplementary document, a description of the mentoring activities that will be provided for such individuals. Please be advised that if required, FastLane will not permit submission of a proposal that is missing a Postdoctoral Researcher Mentoring Plan. See [Chapter II.C.2.j](#) of the GPG for further information about the implementation of this requirement.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Methodology, Measurement, and Statistics (MMS)

Synopsis of Program:

The Methodology, Measurement, and Statistics (MMS) Program is an interdisciplinary program in the Social, Behavioral, and Economic Sciences that supports the development of innovative analytical and statistical methods and models for those sciences. MMS seeks proposals that are methodologically innovative, grounded in theory, and have potential utility for multiple fields within the social and behavioral sciences. As part of its larger portfolio, the MMS Program partners with a consortium of federal statistical agencies to support research proposals that further the development of new and innovative approaches to surveys and to the analysis of survey data.

The MMS Program supports a variety of different types of awards, including:

- 1) Regular Research Awards
- 2) Mid-Career Research Fellowships
- 3) Doctoral Dissertation Research Improvement Grants
- 4) Research Experience for Undergraduates (REU) Supplements

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.

- Cheryl L. Eavey-Program Director, Program Director/Cluster Coordinator, 995 N, telephone: (703) 292-7269, fax: (703) 292-9068, email: ceavey@nsf.gov
- Quinn A. Conklin, 995 N, telephone: (703) 292-4927, email: qconklin@nsf.gov
- Carolyn D. McKinnon-Jones, 995 N, telephone: (703) 292-7275, email: cmckinno@nsf.gov

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

- 47.075 --- Social Behavioral and Economic Sciences

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 40 to 50

Anticipated Funding Amount: \$3,500,000 (Approximately \$3.5 million will be awarded annually, contingent upon the availability of funds. Additional funds may be available from participating federal statistical agencies for competitive survey and statistical methodology proposals.)

Eligibility Information

Organization Limit:

Proposals may only be submitted by the following:

- Proposals for Regular Research Awards conform to standard GPG guidelines. See Section II. Program Description for detailed information about the organizational limits for other modes of support.

PI Limit:

PI eligibility limit varies by the mode of support. See Section II. Program Description for detailed information about each mode of support.

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI:

None Specified

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- Letters of Intent: Not Applicable
- Preliminary Proposal Submission: Not Applicable
- Full 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/publications/pub_summ.jsp?ods_key=grantsgovguide)

B. Budgetary Information

- Cost Sharing Requirements: Inclusion of voluntary committed cost sharing is prohibited.
- Indirect Cost (F&A) Limitations:

Some awards do not allow for indirect costs. See specific information in Section II. Program Description.
- Other Budgetary Limitations: Other budgetary limitations apply. Please see the full text of this solicitation for further information.

C. Due Dates

- Full Proposal Target Date(s):
 - August 16, 2008
 - August 16, Annually Thereafter
 - January 16, 2009
 - January 16, Annually Thereafter

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 Methodology, Measurement, and Statistics (MMS) Program is a standing, interdisciplinary program in the Directorate for Social, Behavioral, and Economic Sciences (SBE). MMS supports the development of innovative analytical and statistical methods and models for those sciences. The Program interacts with the other programs in SBE as well as other programs in the Foundation, most notably the Statistics Program in the Directorate for Mathematical and Physical Sciences (MPS). The Program also partners with a consortium of federal statistical agencies to support research proposals that further the development of new and innovative approaches to surveys and to the analysis of survey data.

II. PROGRAM DESCRIPTION

Program Mission Statement

The MMS Program seeks proposals that are methodologically innovative, grounded in theory, and have potential utility for multiple fields within the social, behavioral, and economic sciences. Successful proposals often integrate across the following areas:

- The development, application, and extension of formal models and methodology for social and behavioral research,

including methods for improving measurement. The proposed research must have implications for one or more of the social and behavioral sciences.

- The development of formal models that cross traditional disciplinary boundaries, including research on statistical methodology or statistical modeling having direct implications for one or more of the social and behavioral sciences.
- Research on methodological aspects of new or existing procedures for data collection, including methodology for survey research, and research to evaluate or compare existing data bases and data collection procedures.
- The collection of unique databases with cross disciplinary implications, especially when paired with developments in measurement or methodology.
- The organizational infrastructure of social and behavioral research.

The MMS Program supports a variety of different types of awards, including:

- 1) Regular Research Awards
- 2) Mid-career Research Fellowships
- 3) Doctoral Dissertation Research Improvement Grants
- 4) Research Experience for Undergraduates (REU) Supplements

Modes of Support

- 1) Regular Research Awards

Most of the proposals submitted to the MMS Program fall into the category of regular research awards. With the exception of a long-standing partnership with a consortium of federal statistical agencies (described in detail below) and the occasional NSF Dear Colleague letter (see, for example, [Research on Data Confidentiality](#)), the MMS Program does not solicit particular areas of research. Rather, the Program invites the community to submit a broad range of cutting-edge methodological research for the social, behavioral, and economic sciences.

The Program also supports some infrastructure-type activities for the social, behavioral, and economic sciences, including conferences and workshops. Infrastructure proposals must demonstrate the value of the proposed activities for the broader community of social, behavioral, and economic scientists. The full portfolio of active MMS awards is available on the [MMS Home Page](#).

Research on Survey and Statistical Methodology

Since 1999, the MMS Program has collaborated with a consortium of federal statistical agencies represented by the Interagency Council on Statistical Policy (ICSP) and the Federal Committee on Statistical Methodology (FCSM) to further the development of new and innovative approaches to surveys and to the analysis of survey data. The Federal Statistical System faces the challenge of gathering relevant and reliable data for the next decade and beyond. The potential for conducting surveys via the web, for example, raises a host of important methodological questions. Questions regarding the affects of nonresponse on the validity and reliability of survey data need to be addressed. The increasing use of multi-mode surveys, in part to address declining response, has raised new methodological challenges.

Researchers need to think creatively regarding the development of methods for survey research in the 21st century. Potential topics for consideration include, but are not limited to:

- a) Measurement Issues (e.g., Investigation of measurement implications of multi-mode surveys.)
- b) Questionnaire Design (e.g., Applications of psychology or linguistics to questionnaire design.)
- c) Survey Design and Technology (e.g., Methodological issues associated with web-based surveys or multi-mode surveys.)
- d) Analytical Issues (e.g., Uses of administrative records or paradata to supplement surveys.)
- e) Small Area Estimation (e.g., Improvements in current estimation methods.)

Although proposals submitted in response to this solicitation may address any aspect of survey methodology, priority will be given to basic research proposals that are interdisciplinary in nature, have broad implications for the field in general, and have the greatest potential for creating fundamental knowledge of value to the Federal Statistical System. Because methodological problems often require knowledge and expertise from multiple disciplines, collaborations are especially encouraged among the relevant sciences, including the social sciences, linguistics, cognitive science, statistics, computer science, and economics. The Program encourages proposals where participating scientists are also advancing knowledge in their respective disciplines. Although survey methods proposals may be submitted to either one of the two MMS target dates, only proposals submitted to the January 16 target date are guaranteed full consideration by the federal statistical agencies.

Grantees for awards funded with support from the federal statistical agencies may be invited to participate in a one- or two-day meeting in the Washington, DC area to report on their activities and interact with other grantees and federal agency staffers. Budget requests should include travel funds to accommodate that possibility.

Information on Participating Federal Statistical Agencies

The Interagency Council on Statistical Policy (ICSP) consists of the heads of the 14 largest statistical agencies and is chaired by the chief statistician of the Office of Management and Budget. It was formally established by the Paperwork Reduction Act of 1995 to discuss and determine statistical policy issues. The Federal Committee on Statistical Methodology (FCSM) consists of experts from within the Federal Statistical System who consider methodological issues of importance to the statistical system. The Federal Statistical System includes 10 agencies that have statistical activities as their principal mission and about 60 agencies that carry out statistical activities in conjunction with other missions, such as providing services or enforcing regulations.

Proposals may include the direct participation of consortium agencies. Consortium agencies include:

Department of Agriculture (National Agricultural Statistics Service; Economic Research Service)
Department of Commerce (Bureau of the Census; Bureau of Economic Analysis)
Department of Education (National Center for Education Statistics)
Department of Energy (Energy Information Administration)
Department of Health and Human Services (National Center for Health Statistics)
Department of Justice (Bureau of Justice Statistics)
Department of Labor (Bureau of Labor Statistics)
Department of Transportation (Bureau of Transportation Statistics)
Department of Treasury (Statistics of Income Division, IRS)
National Science Foundation (Science Resources Statistics)
Social Security Administration

2) Mid-Career Research Fellowships

The MMS Program supports mid-career research fellowships in the social, behavioral, economic, and statistical sciences. The primary goal of the fellowships is to facilitate the development of innovative methods and models for understanding complex social and behavioral science phenomena. A secondary goal is to facilitate interactions across the social, behavioral, economic, statistical, and other relevant sciences.

In fulfillment of the primary goal, proposals must concretely demonstrate how the proposed fellowship activities will further the development of new methods for increased understanding of complex, substantive problems in the social and behavioral sciences. These new insights may result from the expansion of the investigator's personal research program or from collaborations established by the investigator with other researchers during the fellowship period.

To meet the secondary goal, investigators are expected to spend their fellowship period at a host location immersing themselves in an area of study outside their current areas of expertise. The host location may be at a different organization from the investigator's home organization or simply a different department within the home organization. For example, a statistician interested in developing methods for population projection may elect to spend the fellowship period in the sociology department on his home campus. Likewise, an economist interested in spatial externalities may select as a host location a geography department at a distant institution. The selection of the host location must be justified in the body of the proposal, as well as the proposed fellowship activities. In addition, the proposal must include a detailed letter of support signed by the department head or equivalent official at the host location outlining the nature of the relationship between the investigator and host location. In order to assess the value added of the proposed training activity, information on any formal training in the area to be studied should also be included. The letter, background information, and other supporting materials can be scanned and submitted via FastLane as Supplementary Documentation.

It is expected that the selection of the host location will necessitate the crossing of disciplinary boundaries. Proposals may be jointly reviewed with the relevant disciplinary program at NSF; e.g., proposals involving interactions among statisticians and social, behavioral, or economic scientists may be jointly reviewed with the Statistics Program in the Directorate for Mathematical and Physical Sciences.

Mid-Career awards will be made for up to a twelve-month period. Applicants are encouraged to coordinate proposed activities with a sabbatical leave or other forms of release time. Allowable costs include a stipend, a special allowance, a relocation allowance, and an institutional allowance. The maximum stipend available for the duration of the award is \$60,000. Fringe benefits may be provided at a rate not to exceed the normal home institution fringe benefit rate. A special allowance of \$3,000 is available at the Fellow's discretion and is intended for scientific supplies, travel, publication expenses, and other research related costs. Investigators may request a relocation travel allowance of up to \$3,000 if the host location is different from the home institution. An institutional allowance paid to the host institution of \$300 per month of tenure is allowed for partial reimbursement of expenses incurred in support of the Fellow (e.g., space, equipment, secretarial assistance, and provision of general support). The institutional allowance is in lieu of indirect costs. There is no dependency allowance.

The MMS Program accepts and reviews Mid-Career proposals for both the January 16 and August 16 target dates. Any qualified researcher may submit a proposal through normal institutional channels at either the home or host organization. To be qualified, the researcher must be employed at a U.S. organization. Although applications may be submitted from researchers at any level beyond the Ph.D., NSF especially encourages the submission of proposals from senior (post-tenure) researchers. An applicant may receive only one mid-career fellowship award under this solicitation or its successors.

3) Doctoral Dissertation Research Improvement Awards

In an effort to improve the quality of dissertation research, the Methodology, Measurement, and Statistics Program accepts and reviews doctoral dissertation research proposals for both the January 16 and August 16 target dates. The proposal should describe the scientific significance of the proposed work, including its relationship to other current research, and the design of the project in sufficient detail to permit evaluation. If the project is already underway, the proposal should present and interpret progress to date. A research schedule should be included. Although the student cannot submit a proposal independently, it is expected that the intellectual input to the proposed research be predominantly that of the student. The funds are to be used for expenses associated with the conduct of the dissertation research that normally are not underwritten by the home institution.

The proposal must be submitted by a U.S. university on behalf of the dissertation advisor and graduate student who is at the point of initiating or already conducting dissertation research. The advisor serves as the principal investigator and the student as the co-principal investigator. The student must be enrolled at a U.S. institution but does not need to be a U.S. citizen.

Doctoral Dissertation Research awards will be made for up to a 24-month period. These awards provide supplemental funds for items not usually available from the student's university; the awards are not intended to provide the full costs of a student's doctoral dissertation research. Funds may be used for valid research expenses, which include (but are not limited to) conducting field research in settings away from campus that would not otherwise be possible, data collection and sample survey costs, payments to subjects or informants, specialized research equipment, analysis and services not otherwise available, supplies, travel to archives, travel to specialized collections and facilities or field research locations, and partial living expenses for conducting necessary research away from the student's university. Funds are to be used exclusively for necessary expenses incurred in the actual conduct of the dissertation research. These funds may not be used as a stipend for the student, for tuition, textbooks, journals, or for the typing, reproduction, or publication costs of the student's dissertation. Although stipends are not permitted, an allowance for expenses during time away from the student's home institution may be allowed. Funds may be requested for research assistants only in special circumstances, which should be carefully justified. The maximum amount that will be awarded for doctoral research is \$12,000. NSF does not reimburse grantee institutions for the indirect costs associated with doctoral dissertation research (see the SBE Doctoral Dissertation Research Improvement Grants solicitation, [NSF 06-605](#)).

4) Research Experience for Undergraduates (REU) Supplements

To enhance undergraduate education and training in the development of methods for the social, behavioral, and economic sciences and to broaden the participation of underrepresented students in high-quality research projects, the MMS Program encourages the submission of REU supplements to ongoing MMS-supported research projects or as a component of proposals for new or renewal MMS awards. The supplement request should not exceed three pages and should describe the proposed student's involvement in the project, identifying the value of the student's participation both for the conduct of the research and for the student's academic development. The experience of the investigator in involving undergraduates in research should be discussed, including the results of prior REU supplement support (if applicable). If the student has been preselected, the supplement request should describe the grounds for selection and include a brief biographical sketch of the student. If the student has not been preselected, the supplement request should discuss the process and criteria for selecting the student. The MMS Program particularly encourages the submission of REU supplements to support the participation of women and other underrepresented groups in the research process.

Undergraduate student participants must be citizens or permanent residents of the United States or its possessions. The maximum

amount that will be awarded for an REU supplement is \$8,000 per student. An administrative allowance, limited to 25% of the participant support stipend amount only, is allowed for REU Supplement awards in lieu of indirect costs (see the NSF Research Experience for Undergraduates (REU) solicitation, [NSF 07-569](#)). The Program generally will consider no more than one REU supplement per award.

Investigators may submit REU supplement requests at any time. It is recommended, however, that the investigator contact the program officer prior to submission.

III. AWARD INFORMATION

Estimated program budget, number of awards, and average award size/duration are subject to the availability of funds. The MMS Program budget is approximately \$3.5 million annually. Additional funds may be available from participating federal statistical agencies for competitive survey and statistical methodology proposals.

IV. ELIGIBILITY INFORMATION

Organization Limit:

Proposals may only be submitted by the following:

- Proposals for Regular Research Awards conform to standard GPG guidelines. See Section II. Program Description for detailed information about the organizational limits for other modes of support.

PI Limit:

PI eligibility limit varies by the mode of support. See Section II. Program Description for detailed information about each mode of support.

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 nsfpubs@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/publications/pub_summ.jsp?ods_key=grantsgovguide). 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 nsfpubs@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.4 of the Grant Proposal Guide provides additional information on collaborative proposals.

B. Budgetary Information

Cost Sharing: Inclusion of voluntary committed cost sharing is prohibited

Indirect Cost (F&A) Limitations:

Some awards do not allow for indirect costs. See specific information in Section II. Program Description.

C. Due Dates

- Full Proposal Target Date(s):

August 16, 2008

August 16, Annually Thereafter

January 16, 2009

January 16, Annually Thereafter

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. Comprehensive information about using Grants.gov is available on the Grants.gov Applicant Resources webpage: http://www07.grants.gov/applicants/app_help_reso.jsp. 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 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.

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:

- Cheryl L. Eavey-Program Director, Program Director/Cluster Coordinator, 995 N, telephone: (703) 292-7269, fax: (703) 292-9068, email: ceavey@nsf.gov
- Quinn A. Conklin, 995 N, telephone: (703) 292-4927, email: qconklin@nsf.gov
- Carolyn D. McKinnon-Jones, 995 N, telephone: (703) 292-7275, email: cmckinno@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@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, 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 Arctic and Antarctic research stations. The Foundation also supports cooperative research between universities and industry, US participation in international scientific and engineering efforts, and educational activities at every academic level.

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

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

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

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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:
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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

