Research and Evaluation on Education in Science and Engineering (REESE)

Program Solicitation
NSF 06-609

Replaces Document(s):
NSF 06-537

National Science Foundation

Directorate for Education & Human Resources
    Division of Research Evaluation and Communication

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

    January 29, 2007

        This deadline is for both the Synthesis Research and Evaluation Projects and the Empirical
        Research and Evaluation Projects

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:

    Research and Evaluation on Education in Science and Engineering (REESE)

Synopsis of Program:

    The Division of Research, Evaluation and Communication (REC) in the Directorate for Education and

Human Resources (EHR) of the National Science Foundation (NSF) supports basic and applied research and evaluation that enhances science, technology, engineering and mathematics (STEM) learning and teaching. This solicitation calls for two types of proposals—synthesis and empirical.

- *Synthesis Research and Evaluation Project proposals* should identify areas where the knowledge base in either evaluation or research is sufficiently robust to support strong scientific claims, identify areas of importance to education research and practice, and propose rigorous methods for synthesizing findings and drawing conclusions. Proposals for workshops and other meetings are permitted.
- *Empirical Research and Evaluation Project proposals* should identify areas that have the potential for advancing discovery and innovation at the frontiers of STEM learning. These proposals are expected to be based deeply in the STEM disciplines and be theoretically and methodologically strong with the potential of contributing to theory, methodology, and practice.

For either type of proposal, areas of interest include behavioral, cognitive, social, and technological aspects of learning and education; learning in formal and informal settings; diffusion, implementation, and the role of context in educational and learning innovations; and theoretical, methodological, and statistical issues of importance in advancing research and evaluation. Investigators from across the broad range of disciplines supported by the NSF are invited to submit proposals. Interdisciplinary proposals are particularly welcome.

Cognizant Program Officer(s):

- John C. Cherniavsky, Senior EHR Advisor for Research, 855 S, telephone: (703) 292-5136, fax: (703) 292-9046, email: jchernia@nsf.gov

- Gabriel M. Della-Piana, Program Director, 855 S, telephone: (703) 292-5141, fax: (703) 292-9046, email: gdellapi@nsf.gov

- James Dietz, Program Director, 855 S, telephone: (703) 292-5156, fax: (703) 292-9046, email: jdietz@nsf.gov

- Janice M. Earle, Program Director, 885 S, telephone: (703) 292-5097, fax: (703) 292-9044, email: jearle@nsf.gov

- Elmima C. Johnson, Program Director, 855 S, telephone: (703) 292-5137, fax: (703) 292-9046, email: ejohnson@nsf.gov

- Gregg Solomon, Program Director, 855 S, telephone: (703) 292-8333, fax: (703) 292-9046, email: gesolomo@nsf.gov

- Larry E. Suter, Program Director, 855 S, telephone: (703) 292-5144, fax: (703) 292-9046, email: lsuter@nsf.gov

- Elizabeth VanderPutten, Program Director, 855 S, telephone: (703) 292-5147, fax: (703) 292-9046, email: evanderp@nsf.gov

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

- 47.076 --- Education and Human Resources

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 25 to 32   It is anticipated that between 15 and 20 Synthesis Research and Evaluation Project awards will be made and between 10 and 12 Empirical Research and Evaluation Project awards will be made.

Anticipated Funding Amount: $10,000,000   pending availability of funds. The maximum award for Synthesis Research and Evaluation projects is $200,000 with a duration of 1 to 3 years. The maximum award size for Empirical Research and Evaluation Projects is $1,000,000 with a duration of 3 to 5 years.

Eligibility Information

Organization Limit:

 None Specified

PI Limit:

 None Specified

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: 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):

   January 29, 2007

     This deadline is for both the Synthesis Research and Evaluation Projects and the Empirical Research and Evaluation Projects

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

About the National Science Foundation and the Directorate for Education and Human Resources

The National Science Foundation (NSF) is charged with promoting the vitality of the nation's science, technology, engineering and mathematics (STEM) research and education enterprises. As one part of that mission, the Directorate for Education and Human Resources (EHR) has primary responsibility for NSF's efforts to provide national and research-based leadership in STEM. EHR promotes four goals in fulfilling this responsibility:

1. Prepare the next generation of STEM professionals and attract more U.S. citizens and permanent residents to these careers.

2. Increase the technological and scientific literacy of all U.S. citizens and residents so that they can participate responsibly in an increasingly technological society and acquire knowledge of science, technology, engineering, and mathematics that is appropriate to the development of workforce skills and life-long career opportunities.

3. Broaden participation of all groups and increase achievement in STEM.

4. Attend to critical workforce needs requiring significant math and science skills and knowledge, by attracting new people to these STEM careers and by providing support for the development of the current workforce.

To reach these goals, the Directorate sponsors programs in the Divisions of Elementary, Secondary, and Informal Education (ESIE), Undergraduate Education (DUE), Graduate Education (DGE), Human Resource Development (HRD), the Experimental Program to Stimulate Competitive Research (EPSCoR), and the Division of Research, Evaluation, and Communication (REC). The Directorate also supports the Math and Science Partnerships (MSP).

About the Division of Research, Evaluation, and Communication

The mission of the Division of Research, Evaluation, and Communication (REC) is: (1) to advance discovery and innovation at the frontiers of STEM learning; (2) to serve as the intellectual hub that unites education research and evaluation activities across the Foundation; and (3) to help coordinate the Foundation's education research and evaluation efforts with those of other government agencies. REC advances its mission by developing an interdisciplinary research and evaluation portfolio focusing on core scientific questions of learning in real and emerging educational contexts, from preschool through adulthood.

REC has funded research and evaluation projects on learning and education in STEM in order to enhance the knowledge base and improve educational practice, to increase the capacity of these communities to conduct and communicate the results of their research, and to broaden participation and promote equity. Its principal grant programs have been Research on Learning and Education (ROLE), Evaluative Research and Evaluation Capacity Building (EREC), Interagency Education Research Initiative (IERI), and Faculty Early Career Development (CAREER). Projects supported by these REC programs have made significant contributions to a broad range of important educational research areas.

Through the present solicitation for Research and Evaluation on Education in Science and Engineering (REESE), REC seeks to lay the foundation for advancing its program portfolio. Proposals are solicited in two general categories:

- Synthesis Research and Evaluation Projects
- Empirical Research and Evaluation Projects

II. PROGRAM DESCRIPTION

Synthesis Research and Evaluation Projects

REESE seeks proposals that synthesize research and evaluation with the aims of accumulating knowledge generated by past studies and identifying new research and evaluation opportunities in STEM education and learning. Progress in fields such as education research and evaluation requires the integration of insights from a broad range of research traditions and literatures. Unfortunately, this integration too rarely occurs. As a result, research efforts are fragmented so that, for example, expert knowledge of specific disciplinary content (such as resides in a department of physics) may not be brought into contact with expert knowledge about the development of learning (such as resides in a department of cognitive science) which, in turn, may not be brought into contact with expert knowledge of classroom implementation (such as resides in a department of teacher development). The fragmentation of research efforts also impedes efforts to explore, systematically and productively, the various research and evaluation methods considered appropriate for investigating questions across disciplines.

In order to address the challenges such fragmentation poses, REESE is providing an opportunity, through this solicitation, for researchers to synthesize knowledge on topics of national importance and to identify new research and evaluation opportunities. Proposals should identify areas where the existing research-based knowledge is compelling, appropriate for synthesis, and important to research and/or practice. It must describe the methodology that will be used to synthesize the existing research and to ensure conclusions and recommendations are rigorously derived from the work. Finally, the proposal must explain how the proposed synthesis has implications, whether direct or indirect, for the enhancement of STEM learning and education.

The syntheses invited under this program may be produced by a number of mechanisms. These include (but are not limited to): meta-analyses or new analyses of extant data; the identification and explanation of divergent research findings; literature surveys and other activities resulting in white papers that consolidate the state of research knowledge and identify gaps in it; and other activities, such as workshops or conferences, that address the consolidation of STEM educational research and evaluation and that yield visible, high-quality contributions to the literature.

A successful proposal will identify and justify why the area of study is of national importance, how the study might lay the groundwork for future research and evaluation that will lead to new discoveries in learning and education in STEM, and how it

might enhance practice. Syntheses may also help to identify unproductive areas of study, theoretical claims, methodologies, or means of analysis that have been undermined empirically or logically, especially if such areas or approaches continue to exert undue influence on educational research or practice.

Below are some examples of the type of work that is welcomed under this solicitation. These examples do not constitute an exhaustive or mutually exclusive set of priorities.

- Syntheses of behavioral, cognitive, social, and technological aspects of the foundations of learning and education in STEM disciplines and across different populations. The synthesized research could identify compelling and innovative bridges between research in the cognitive and social sciences and research on learning and education within STEM content domains.
- Syntheses of learning in formal and informal settings could address what is known about learning and teaching in specific content areas, the development of expertise in an area over time, or the effectiveness of teaching practices, including technologically supported instruction. Results of these syntheses should provide a strong evidentiary base to support sustained improvement in STEM educational practice.
- Syntheses in the diffusion of educational innovations. Projects could examine demographic or contextual factors that affect how successfully innovations are spread, adopted, and implemented across changes in scale – whether such change is from individual to group, laboratory to field, classroom to higher organizational levels, or across place and time. Syntheses should further indicate which specific findings are ready for broad implementation, which findings remain to be tested in different contexts, and which findings should be re-examined.
- Syntheses may also address topics concerning theoretical, methodological, and statistical issues important to research and evaluation in education and learning in the context of STEM. Synthesis efforts may focus on where specific methodological, statistical, and measurement advancements have yielded valuable insights and discoveries. In addition, such work could examine various approaches used to study a particular problem with the aim of contributing insights about how that problem might be advanced by further developments and applications in method and theory.
- Syntheses addressing factors that contribute to broadening the participation of members of groups underrepresented in education research and evaluation are welcome. Investigators are encouraged to consider these factors in other synthesis areas as well.

Successful synthesis projects will explain why the topic is of importance to the enhancement of STEM learning; describe a rigorous methodology for synthesizing the research, and for validating conclusions and recommendations; and have clear plans for publications in peer reviewed journals as well as for widespread dissemination of materials of use to policy-makers and practitioners.

Empirical Research and Evaluation Projects

REESE seeks strategically important research studies that advance discovery and innovation at the frontiers of STEM learning. Advances in many related fields have transformed research on STEM learning and education in recent years. These developments have contributed to an emerging, multidisciplinary science of learning that bears directly on the educational and research goals of NSF. REESE welcomes proposals that seek to understand how to produce significant improvements in STEM learning through a comprehensive approach that contributes to research frontiers in both human learning and in the educational environments and systems that are structured to support STEM teaching and learning. REESE also seeks projects to increase the capacity and breadth of the research and evaluation communities contributing to these frontiers.

REESE encourages projects that reconcile basic research, evaluation, and educational practice, and that generate hypotheses from one disciplinary area that can be tested and refined in another in the support of content learning in the STEM disciplines. Funded research and evaluation projects are expected to enable the community to integrate investigations of learning into educational contexts effectively, to build and strengthen cross-disciplinary communities of research, and to advance the knowledge base within and across the relevant disciplines.

Examples of the type of work invited under this solicitation follow. They do not constitute an exhaustive or mutually exclusive set of priorities.

- Studies of behavioral, cognitive, social, and technological aspects of the foundations of learning and education in STEM disciplines and across different populations. Proposed projects could build compelling and innovative bridges between research in the cognitive and social sciences and research on learning and education within STEM content domains.
- Studies of learning in formal and informal settings through traditional and alternative media/technologies could address the learning and teaching of specific content areas, the development of expertise in an area over time, or the effectiveness of teaching practices, including technologically supported instruction. Results of these studies should significantly contribute to an evidentiary base to support sustained improvement in STEM educational practice.

- Studies of the diffusion of educational innovations. Projects could explore demographic or contextual factors that affect how successful innovations are spread, adopted, and implemented across changes in scales– whether such change is from individual to group, laboratory to field, classroom to higher organizational levels, or across place and time.
- Studies may also address topics concerning theoretical, methodological, and statistical issues important to advancing research and evaluation in education and learning in the context of STEM. Such projects must have important implications for research and evaluation methodological practice drawn from empirical foundations.

Successful empirical proposals must meet, as appropriate to the goals of the project, the following requirements:

- The project must advance the frontiers of knowledge and discovery. Proposals should rigorously address core research or evaluation questions that will enable the research and education communities to make advancements of national importance in improving STEM learning, from preschool through adulthood.
- Projects must be deeply rooted in one or more specific STEM content domains. Proposals should describe how the project will exploit significant scientific research questions at the intersection of specific STEM domains and the domains of education and learning. Appropriate expertise in the relevant STEM domains and in education or social science research and evaluation should be clearly represented on the proposed project team.
- Projects must advance theory and method. Proposals should show a logical and coherent union of theory and method based on appropriate literatures. In addition, proposals should describe how the proposed research or evaluation could result in significant advancements in theory, method, and practice that could be built upon by others in the STEM education communities.
- Projects must advance human resource development and promote efforts to broaden participation in science and engineering. Proposals should describe how the project will further the nation's capacity to educate future generations of scientists, engineers, educators, and evaluators.

Evaluation Plan

Both Synthesis Research and Evaluation Projects, and Empirical Research and Evaluation Projects must have an evaluation plan, including performance indicators and other specific measures, that will be used by the project team to assess the project's success in meeting its goals and objectives. Although each project should propose its own measures, some later standardization is anticipated so that NSF can conduct a program-wide evaluation of the quality and effectiveness of programs.

III. AWARD INFORMATION

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

NSF expects to make standard or continuing grant awards. The estimated number of awards will be 25 to 32. It is anticipated that between 15 and 20 Synthesis Research and Evaluation Project awards will be made. It is anticipated that between 10 and 12 Empirical Research and Evaluation Project awards will be made. The anticipated funding amount is $10,000,000. The maximum award for Synthesis Research and Evaluation projects is $200,000 with a duration of 1 to 3 years. The average award size is expected to be $100,000. The maximum award size for Empirical Research and Evaluation Projects is $1,000,000 with a duration of 3 to 5 years. The average award size is expected to be $700,000.

IV. ELIGIBILITY INFORMATION

The categories of proposers eligible to submit proposals to the National Science Foundation are identified in the Grant Proposal Guide, Chapter I, Section E.

Organization Limit:

None Specified

PI Limit:

None Specified

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 in proposals submitted to the National Science Foundation.

C. Due Dates

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

>   January 29, 2007

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>>   and the Empirical Research and Evaluation Projects

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 and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

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

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

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

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

B. Review and Selection Process

Proposals submitted in response to this program solicitation will be reviewed by Adhoc Review 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 *Grant Policy Manual* (GPM) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpm.

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:

- John C. Cherniavsky, Senior EHR Advisor for Research, 855 S, telephone: (703) 292-5136, fax: (703) 292-9046, email: jchernia@nsf.gov

- Gabriel M. Della-Piana, Program Director, 855 S, telephone: (703) 292-5141, fax: (703) 292-9046, email: gdellapi@nsf.gov

- James Dietz, Program Director, 855 S, telephone: (703) 292-5156, fax: (703) 292-9046, email: jdietz@nsf.gov

- Janice M. Earle, Program Director, 885 S, telephone: (703) 292-5097, fax: (703) 292-9044, email: jearle@nsf.gov

- Elmima C. Johnson, Program Director, 855 S, telephone: (703) 292-5137, fax: (703) 292-9046, email: ejohnson@nsf.gov

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- Larry E. Suter, Program Director, 855 S, telephone: (703) 292-5144, fax: (703) 292-9046, email: lsuter@nsf.gov

- Elizabeth VanderPutten, Program Director, 855 S, telephone: (703) 292-5147, fax: (703) 292-9046, email: evanderp@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@nsf.gov.

- DeMonica L. Parks, Program Specialist, 855 S, telephone: (703) 292-5167, fax: (703) 292-9046, email: dparks@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**   (703) 292-5111
  (NSF Information Center)**:**

- **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,

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