

Innovative Technology Experiences for Students and Teachers (ITEST)

PROGRAM SOLICITATION NSF 12-597

REPLACES DOCUMENT(S): NSF 11-525



National Science Foundation

Directorate for Education & Human Resources
Research on Learning in Formal and Informal Settings

Letter of Intent Due Date(s) (required) (due by 5 p.m. proposer's local time):

September 20, 2012

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

November 13, 2012

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.

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 PAPPG 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:

Innovative Technology Experiences for Students and Teachers (ITEST)

Synopsis of Program:

ITEST supports the research and development of innovative models for engaging K-12 students in authentic experiences that build their capacity to participate in the science, technology, engineering, and mathematics (STEM) and information and communications technology (ICT) workforce of the future. ITEST projects must include students and may include teachers.

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.

- Address questions to, telephone: (703) 292-8628, email: DRLITEST@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: 15 to 20 depending on the availability of funds for FY 2013.

Anticipated Funding Amount: \$20,000,000 for new Innovative Technology Experiences for Students and Teachers (ITEST) projects in FY 2013 pending availability of funds.

Eligibility Information

Organization Limit:

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

PI Limit:

None Specified

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI:

An individual may serve as the Principal Investigator (PI) for no more than one Scale-up, Strategies, or Research proposal under this solicitation.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Submission of Letters of Intent is required. Please see the full text of this solicitation for further information.
- **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:** Not Applicable
- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full text of this solicitation for further information.

C. Due Dates

- **Letter of Intent Due Date(s) (required)** (due by 5 p.m. proposer's local time):
September 20, 2012
- **Full Proposal Deadline(s)** (due by 5 p.m. proposer's local time):
November 13, 2012

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: Additional reporting requirements apply. Please see the full text of this solicitation for further information.

TABLE OF CONTENTS

Summary of Program Requirements

- I. **Introduction**
- II. **Program Description**
- III. **Award Information**
- IV. **Eligibility Information**
- V. **Proposal Preparation and Submission Instructions**
 - A. Proposal Preparation Instructions
 - B. Budgetary Information
 - C. Due Dates
 - D. FastLane/Grants.gov Requirements
- VI. **NSF Proposal Processing and Review Procedures**
 - A. NSF Merit Review Criteria
 - B. Review and Selection Process
- VII. **Award Administration Information**
 - A. Notification of the Award
 - B. Award Conditions
 - C. Reporting Requirements
- VIII. **Agency Contacts**
- IX. **Other Information**

I. INTRODUCTION

The ITEST program responds to current concerns and projections about the growing demand for science, technology, engineering, and mathematics (STEM) and information and communications technology (ICT) professionals in the U.S. and seeks solutions to help ensure the breadth and depth of the STEM and ICT workforce. ITEST supports the development, implementation, evaluation, and scale-up of implementation models. It also supports robust research studies to address questions that point to solutions for building a strong, competent STEM workforce. A variety of possible approaches to supporting the future STEM and ICT workforce and to building students' capacity to participate in that important workforce may be implemented and studied. ITEST projects must include students and may include teachers. The target audience is kindergarten through high school age, and projects may focus on any NSF supported content area related to the STEM and ICT workforce.

II. PROGRAM DESCRIPTION

The ITEST program is funded by H-1B visa revenues in direct response to the need to ensure a high-quality future STEM and ICT workforce that can meet U.S. technology needs. The goals of the ITEST program are as follows:

- To develop, implement, study, and evaluate interventions that encourage K-12 students to develop interest in and to be prepared for careers in the STEM and ICT workforce of the future.
- To produce research findings that build knowledge about approaches, models, and interventions involving K-12-aged children and teachers that are most likely to increase the nation's capacity and innovation in the STEM and ICT workforce of the future.
- To equip teachers with the resources to ensure that their students consider choosing and are prepared to enter the STEM and ICT workforce of the future.

For the purposes of this program, the "STEM and ICT workforce of the future" is defined broadly to include scientists, technologists, engineers, and mathematicians. The STEM workforce of the future is likely to require knowledge and experience with ICT, especially in fields such as nanotechnology, biotechnology, and computational biology (NRC, 2006). Therefore, ITEST proposals may focus on any STEM or ICT-intensive content area supported by NSF, provided the project addresses specific needs of K-12-aged students or teachers preparing for the future U.S. workforce. NSF is especially interested in supporting investigators to identify established or emerging STEM or ICT areas of focus and create new strategies, scale-ups, or research projects within those areas that may yield further development of innovation or capacity within the STEM workforce of the future. In addition to technical and STEM content, projects may also provide the opportunity for students to learn and practice essential skills (e.g., conflict management, leadership, knowledge of workplace ethics, negotiation, or self-direction) (<http://www.p21.org>).

The ITEST program is aligned with the recommendations of recent reports, including *Fostering Learning in the Networked World: The Cyberlearning Opportunity and Challenge*, the President's Council of Advisors on Science and Technology (PCAST), the National Science Board's (NSB) report entitled *Preparing the Next Generation of STEM Innovators: Identifying and Developing Our Nation's Human Capital*, The U.S. Department of Education's National Education Technology Plan 2010, *Transforming American Education: Learning, Powered by Technology*, and the National Research Council's (NRC) report entitled *Expanding Underrepresented Minority Participation: America's Science and Technology Talent at the Crossroads* (2010) and others (please see references). The ability of the Nation to meet the demand for individuals with the knowledge, skills, curiosity, and creativity necessary to enter the STEM workforce and ICT-intensive careers is hindered by the limited involvement of segments of the population that are severely underrepresented in STEM and ICT occupations. The demand for skilled, knowledgeable professionals can be met only if

the STEM and ICT workforce is broad and diverse, and taps the potential of all students able to pursue careers in STEM and ICT fields.

NSF is especially interested in projects that focus on students from groups traditionally underrepresented in STEM and ICT-intensive careers (including but not limited to those residing in rural and economically disadvantaged communities), elementary student audiences, and innovative ways to connect mathematical reasoning with STEM and ICT career readiness.

ITEST invests in four types of projects: **Strategies**, **Research**, **Scale-up**, and **Resource Center** projects which are described below.

1. ITEST strategies projects

The goal of ITEST *Strategies* projects is to design, implement, and evaluate interventions that support K-12 students' engagement in authentic, relevant experiences that reflect the skills, knowledge, and practices represented in the STEM and ICT workforce and motivate students to pursue STEM and ICT career trajectories. ITEST strategies may also devise ways to equip teachers with the appropriate resources to ensure that their students consider and are prepared for choosing to enter the STEM and ICT workforce of the future. *Every strategies project is regarded as a learning laboratory in the sense that other STEM educators should be able to gain knowledge provided by the project to inform other, future activities.* Projects should describe the plans for a robust, objective evaluation, including outlining the questions and instruments being used to assess "how" and "why" the project did or did not meet the intended goals and objectives. Projects should be sure that the evaluation includes evidence of the ways in which the elements of the strategy have been implemented and achieved. NSF is particularly interested in building the capacity of the ITEST program to demonstrate projects' impact on students' pursuit of STEM and ICT career trajectories by supporting the development of mechanisms for longitudinal tracking of students.

In an effort to identify and grow our nation's STEM and ICT human capital, ITEST encourages projects to consider incorporating strategies that cultivate innovative and creative thinking among student participants. This may involve the use of various technologies and resources to increase exposure to open-ended, real-world problem solving, hands-on training, and interactions with practicing scientists, engineers and other experts. Principles of entrepreneurship (e.g. identifying and/or creating a need, communicating ideas, predictive analysis, etc.) may also be included in the overall project format while providing opportunities for students and teachers to design, make, and test their ideas. Example activities may include, but are not limited to, tinkering/making, rapid prototyping and digital fabrication, and/or modeling (e.g. programming, designing simulations/visualizations).

Strategies projects must make strong connections to one or more of the following questions:

- What coherent set of experiences best support student development (e.g. knowledge, skills, dispositions) for productive participation in the STEM and ICT workforce of the future?
- How can we more effectively prepare teachers to utilize and integrate technology into their STEM curricula to enhance student understanding of STEM and ICT careers?
- How can the burgeoning cyber-infrastructure be harnessed as a tool for STEM and ICT learning in classrooms and informal learning environments? Examples of cyber-infrastructure include (but are not limited to) tools for social networking, bridging formal and informal learning environments, expanding professional learning communities, innovative uses of mobile technology in and out of classroom settings, and /or connecting students to STEM-related datasets.
- What strategies can parents and caregivers adopt in the modern digital and computer age that develop student understanding of and appreciation for the scientific, mathematical, and engineering basis of technological developments?
- What strategies best engage principals, guidance counselors, and other school administrators to promote students' and teachers' adoption and effective use of technologies that support STEM and ICT learning and career awareness?

Projects that cross multiple grade levels and align with district and individual school professional development plans are encouraged. Investigators are encouraged to create partnerships with (1) K-12 schools, colleges (two or four year), universities, informal science education organizations, government laboratories, and /or community-based organizations to address the needs of the target audiences as appropriate; (2) industry to support career awareness and cultivate interest among student participants. These partnerships can provide opportunities for career exploration and mentoring, interactions with technology and STEM professionals, and workplace applications of technology skills.

Strategies projects can be up to three years in duration with maximum award sizes at \$1,200,000.

2. ITEST Research projects

The goal of ITEST *Research* projects is to produce empirical findings and research tools that contribute to knowledge about which approaches, models, and interventions with K-12 students and teachers are most likely to increase capacity in the STEM and ICT-intensive workforce of the future.

Effective strategies must be developed and studied for engaging American youth of the 21st century in ICT and STEM learning in a manner that leads them to pursue career trajectories that focus on technology-intensive STEM fields. Research in this area has the potential to transform policy and education in STEM. To that end, the ITEST program is seeking projects that bring together researchers in STEM education (qualitative and/or quantitative), career development, psychology, sociology, anthropology, STEM disciplines, and other critical areas that heavily invest in STEM and ICT careers. Projects in this category are guided by the following questions:

- What educational activities would increase the nation's capacity to participate in transformative, innovative discoveries in STEM?
- How can we reliably and validly measure and/or predict interests, attitudes, or motivation to participate in STEM or ICT-intensive careers?
- How can we validly measure and rigorously study the impact of various models to encourage participation in STEM or ICT-intensive careers?
- What is the influence or impact of K-12 student participation in activities outside of the formal school setting (e.g. robotics competitions or at nature centers) on students choosing STEM or ICT intensive careers?
- How can we reliably and validly measure student engagement over time as a result of a coherent set of experiences using technology?

These general questions signal areas where ITEST will support systematic, rigorous studies to enlarge and make more substantive the knowledge base upon which efforts to improve and expand the STEM and ICT-intensive

workforce can build. ITEST encourages (1) well-crafted and rigorous research studies to examine the effectiveness of currently active or previously developed interventions and strategies for STEM and ICT workforce growth are strongly encouraged.; (2) longitudinal or retrospective studies that range from analysis of individual ITEST projects to a more comprehensive analysis of the ITEST portfolio as a whole. This may also involve structuring the integration of student longitudinal data from K-12 district and state databases with data from higher educational and/or workplace databases.

The ITEST program is also interested in developing a greater understanding of the conditions that are necessary to support the diffusion and scaling of ITEST projects by examining how different strategies are implemented, institutionalized and sustained with the aim of understanding the organizational elements necessary for implementing the innovation successfully. Research questions for such studies might focus on implementation factors such as: (1) school or district financial investments, leadership, and organizational practices; (2) feasibility and fidelity of classroom implementation; (3) teacher professional development in support of the innovation; (4) engagement of teachers, administrators, and community representatives in adoption and implementation decisions; and/or (5) policy issues such as the innovation's alignment with state standards or assessments. Studies of the implementation and scale-up process might employ qualitative, quantitative, or mixed research methods to document, analyze, and interpret relationships between critical implementation factors and outcomes.

ITEST *Research* projects should contribute to the knowledge base regarding these research problems; while each project may involve evaluation of a particular intervention or strategy, the likely project outcomes should address the underlying research problem and be broadly informative for the field.

Research projects may be from three to five years in duration and be awarded up to \$1,200,000. The size and duration of the request should be appropriate to the scope of the project.

3. ITEST Scale-up projects

The goal of ITEST *Scale-up* projects is to apply strategies to enhance student or teacher knowledge of, or disposition toward, STEM and ICT careers that have evidence of effectiveness under routine conditions to a broader audience for the purpose of learning effective steps in expanding the adoption of successful innovations in school and out-of-school settings. *Scale-up* projects can include expanding existing designs, implementations, and tests of research and theory-based models or models based in best practice and professional expertise, to engage, motivate, and prepare students to be participants in the STEM and ICT workforce of the future.

Any *scale-up* proposal must directly impact K-12-aged students or teachers of K-12 students and must involve a partnership among different types of institutions. Projects in this category are guided by the following questions

- What innovative strategies that have strong and rigorous evidence of effectiveness for supporting K-12 students' development for productive participation in the STEM and ICT workforce of the future are also efficacious across a wider range of settings?
- What are the conditions under which strategies or innovations that are effective in some settings can be expanded to new settings to increase the knowledge, skills, and dispositions that students need in order to participate productively in the changing workforce in STEM and ICT workforce?
- How can innovations be expanded to cover additional scope within STEM and ICT workforce preparation?

Projects should clearly describe (1) the program, model, strategy, or intervention that will be scaled-up and explain the nature of the scale-up (e.g., size of affected population, variety of contexts). The proposal should provide evidence of the effectiveness of the project from previous research or evaluation to make an argument for why the project is ready for scale-up. Empirical evidence of the viability of the scale-up should also be included; (2) the plan for implementing the scaled-up version, including the study goals and, population, the participants and any planned adaptations of the earlier model. Key elements of the study, design, and implementation should be described including data quality and collection protocols and analysis methodologies. One clear outcome of the scale-up study should be reliable estimates of the average impact of the intervention. Plans for scale-up studies should also include mechanisms for determining the extent to which the implementation in the wider settings have varied from the original program model, strategy or intervention; (3) the evidentiary base that will be established to demonstrate, through rigorous, well-controlled, large-scale empirical studies, the impact of the proposed strategy or intervention on practice or student outcomes. To the extent possible, scale-up studies should estimate impacts for sample subgroups as appropriately defined by the setting, population group, or cohort.

Scale-up projects will range in duration from three to five years with a total award size of up to \$2 million. The size and duration of the request should be appropriate to the scope of the project.

4. ITEST Resource Center

One Resource Center will be funded to provide technical support for all ITEST projects and have responsibility for national dissemination of program models, materials, and best practices. The Resource Center should be organized in the following way:

- Lead Institution.* It is anticipated that the lead institution for the ITEST Resource Center will be a service-oriented educational organization or institution with demonstrated capacity to plan, develop, and manage a national center that provides technical support for a diverse portfolio of ITEST projects across the United States. It should have known expertise targeting STEM and ICT-related disciplines, formal and informal science education, and/or teacher professional development. Finally, it is expected that the lead institution will have known expertise dealing with issues around capacity building, broadening participation, and/or career development.
- Technical Support.* The Resource Center is expected to monitor ITEST projects in the various stages of implementation. This may include, but is not limited to, facilitating communities of practice and identifying best practices and resources (including print and electronic) that may augment or enhance projects in meeting their goals. In addition, the Resource Center is expected to support discussions, provide supporting materials to projects, and disseminate ideas and materials from the projects to the field.
- Dissemination.* The primary responsibility for the dissemination of project findings to the field rests with the Resource Center. In addition to submitting a comprehensive report to NSF, the Center should include a plan for dissemination of findings to both formal and informal science education professionals, industry and policy stakeholders, and the STEM education research community.
- Outreach.* The Resource Center is expected to outreach to areas and institutions (community colleges, school districts, informal science institutions, minority serving institutions (MSIs), etc.) not represented in the ITEST portfolio.

The Resource Center project will be supported for a 3 year duration with a total award size of up to \$2 million. The size of the request should be appropriate to the scope of the project.

Expectations for All ITEST projects

Because the ITEST program will be involved in a set of interrelated program evaluations, all projects must include project-level evaluation plans. These plans should be for formative and summative evaluations that assess the impact of the project's activities, progress, and success in meeting goals. An external evaluator who conducts at least the summative evaluation is required.

Evaluations of **strategies, scale-up, and resource center** projects must: (1) include a clear presentation of the questions that will guide the evaluation; (2) specify indicators of impact on participants, such as the specific outcomes that will be measured (e.g., knowledge, attitude, motivation); (3) provide clear descriptions of the research design that is appropriate for the questions including the sampling strategy used; (4) describe how the data will be collected including the instruments to be used and evidence of their quality; (5) explain the methods of analysis; (6) describe any basis for comparisons; and (7) provide the timeline for the evaluation process. If materials are developed as part of the intervention, appropriate plans for expert review and field-testing of materials should be included. In some cases the evaluation plans for **strategies** projects will be closely intertwined with plans to conduct research about the effectiveness of the strategy to achieve desired outcomes.

Research projects also must include evaluation plans appropriate to the goals of the research activity. These plans might include expert review at key stages of the project, development of indicators to assess the levels of rigor with which the research is implemented, or assessment of the scope and impact of the products of the research by an independent advisory committee. Specific plans need to be included in the proposal to show how the project will use formative evaluation findings and will report the summative evaluation of research conducted.

An external evaluation conducted by an evaluation firm contracted by NSF will track the entire ITEST program's progress in meeting overall goals, as well as assess the overall impact on students, teachers, and the field, and potential effect on the STEM and ICT pipelines. All projects are expected to collaborate with the program evaluation team and provide data and responses as requested.

All projects will be asked to consider using common instruments and to consider sharing data from these instruments (with IRB approval) to support improved coordination and understanding of program impacts.

The **Resource Center** provides technical assistance to ITEST grantees and collects project data to contribute to the existing repository of data on ITEST projects. All projects are expected to support the Resource Center's monitoring efforts to gather data, build models and disseminate findings.

References

American Statistical Association. (2007). *Using statistics effectively in mathematics education research*. Retrieved August 19, 2008.

Borgman, C. L., Abelson, H., Dirks, L. Johnson, R., Koedinger, K. R., Linn, M. C., et al. (2008). *Fostering learning in the networked world: The cyberlearning opportunity and challenge, Report of the NSF Task Force on Cyberlearning* (Publication No. NSF-08-204). Retrieved September 14, 2008, from <http://www.nsf.gov/pubs/2008/nsf08204/nsf08204.pdf>

Dede, C., Honan, J., & Peters. L. (Eds.). (2005). *Scaling up success: Lessons learned from technology-based educational innovation*. New York: Jossey-Bass.

Dede, C. & Rockman, S. (2007, spring). Lessons learned from studying how innovations can achieve scale. *Threshold: Exploring the Future of Education*, 5, 4-10.

National Research Council (2006). *ICT fluency and high schools: A workshop summary*. Planning Committee on ICT Fluency and High School Graduation Outcomes. Board on Science Education, Center for Education. Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.

National Science Foundation (2005). *The mathematics education portfolio brief*, (Publication No. NSF 05-03). Retrieved July 9, 2008, from <http://www.nsf.gov/pubs/2005/nsf0503/nsf0503.pdf>.

National Science Foundation (2008, January). *Science and engineering indicators 2008*, (Publication No. NSB 08-01; NSB 08-01A). Retrieved September 14, 2008, from <http://www.nsf.gov/statistics/seind08/start.htm>

National Science Foundation (2010, May). *Preparing the next generation of STEM innovators: Identifying and developing our nation's human capital*. (Publication No. NSB-10-33). Retrieved October 14, 2010 from <http://www.nsf.gov/nsb/publications/2010/nsb1033.pdf>

Partnership for 21st Century Skills (2009, December). *P21 Framework Definitions*. Retrieved November 16, 2010 from http://www.p21.org/documents/P21_Framework_Definitions.pdf

President's Council of Advisors on Science and Technology (2010, September). *Prepare and inspire: K-12 Education in science, technology, engineering and math (STEM) for America's future*. Retrieved October 14, 2010 from <http://www.whitehouse.gov/ostp/pcast>

RAND Mathematics Study Panel (2003). *Mathematical proficiency for all students: Toward a strategic research and development program in mathematics education*, (Publication No. MR-1643.0-OERI). Santa Monica, CA: RAND.

Schneider, B., & McDonald, S.K. (Eds.). (2007). *Scale-up in education, volume 1: Ideas in principle*. Lanham, MD: Rowman & Littlefield.

Frechting, J., Mark, M., Rog, D., Thomas, V., Frierson, H., Hood, S., Hughes, G., Johnson, E. (2010) The 2010 User-Friendly Handbook for Project Evaluation, <http://www.westat.com/Westat/pdf/news/UFHB.pdf>

Common Core State Standards for Mathematics (2010)
http://www.corestandards.org/assets/CCSSI_Math%20Standards.pdf

National Research Council (2002). *Scientific Research in Education*. Washington, DC: National Academy Press.

National Research Council (2008), *Research on Future Skill Demands*. Washington, DC: National Academy Press.

National Research Council (2009). Learning Science in Informal Environments: People, Places, and Pursuits. Washington, DC: National Academy Press.

National Research Council (2011). Successful K-12 STEM Education: Identifying Effective Approaches in Science, Technology, Engineering, and Mathematics. Washington, DC: National Academy Press.

U.S. Department of Education, Office of Educational Technology (March 5, 2010). Transforming American Education: Learning Powered by Technology.

III. AWARD INFORMATION

Duration and Funding Level are all pending availability of funds for FY2013: Strategies projects will be for up to three years in duration, with award sizes at most \$1.2 million. Research projects will range from three to five years in duration, with award sizes up to \$1,200,000. Scale-up projects will range from three to five years in duration, with award sizes up to \$2 million. The Resource Center project will be supported for a 3 year duration with a total award size of up to \$2 million. The size of the request should be appropriate to the scope of the project. The requests should be appropriate to the duration and scope of the Strategies, Research, or Scale-up project.

IV. ELIGIBILITY INFORMATION

Organization Limit:

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

PI Limit:

None Specified

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI:

An individual may serve as the Principal Investigator (PI) for no more than one Scale-up, Strategies, or Research proposal under this solicitation.

Additional Eligibility Info:

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Letters of Intent (required):

Letters of Intent must be submitted via the NSF FastLane system, using the Letter of Intent module in FastLane, for ITTEST **Strategies, Research, Scale-up, and Resource Center** projects.

Letters of Intent are limited to 2,500 characters, including spaces (approximately 350 words). Your Letter of Intent should contain a brief narrative that describes the project and provides the following information: (1) a project title; (2) clear identification of the proposal's content focus (e.g. general STEM, mathematics, engineering, geo-science) and the proposal category -- Strategies, Research, Scale-up, or Resource Center; (3) a list of proposed Principal Investigators and Co-Principal Investigators, including organizational affiliations and departments; (4) partnering institutions; (5) STEM disciplines represented and relationship to the STEM or ICT workforce; and (6) grade band, if applicable.

Letter of Intent Preparation Instructions:

When submitting a Letter of Intent through FastLane in response to this Program Solicitation please note the conditions outlined below:

- Sponsored Projects Office (SPO) Submission is not required when submitting Letters of Intent
- Submission of multiple Letters of Intent is not allowed

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.

The following information supplements the standard GPG or NSF Grants.gov Application Guide proposal preparation guidelines:

Cover Sheet: The Cover Sheet must contain all requested information. Complete this form with the appropriate information and make sure to check the human subjects box when appropriate. If project funds are requested from another Federal agency or another NSF program, it must be indicated on the cover sheet. If such funds are requested subsequent to proposal submission, a letter should be sent to the attention of the ITEST program, identifying the proposal by its NSF number. In the title section on the cover sheet, begin each title with the type of ITEST proposal being submitted (e.g., Strategies, Research, Scale-up, or Resource Center proposals).

To avoid delays in processing, it is also suggested that PIs begin the process of obtaining appropriate Institutional Review Board (IRB) approvals or exemptions as needed for projects involving human subjects.

Project Summary: A one-page Project Summary should be prepared, suitable for public release, which presents a self-contained description of the activity that would result if the proposal were funded. The initial sentences must describe the ITEST program component to which the proposal is submitted (*Strategies, Research, Scale-up, or Resource Center*). *Strategies* projects must describe the STEM or ICT content emphases, the strategy to be designed, implemented, and evaluated, and the audiences to be involved. *Research* projects must state the research questions to be explored, the design and instruments to be used, and plans for analysis and dissemination. *Scale-up* projects must discuss the evidence collected from previous efforts with an innovation that justifies an expansion of the effort. *Resource Center* projects must emphasize plans for technical assistance to funded projects, strategies for the dissemination of ITEST resources, and outreach activities.

All summaries **must** specifically address the project's **intellectual merit** and **broader impacts**. If the Summary does **not** specifically address **both** review criteria in separate statements, the proposal **will be returned without review**.

Project Description (maximum of 15 pages; including results from prior NSF support): The Project Description contains most of the information that determines whether a grant will be awarded. Competitive proposals respond fully to the ITEST program description in this solicitation. Reviewers will judge the merit of each proposal based on the content of the Project Description.

The narrative section of a competitive ITEST **Strategies, Research, Scale-up, or Resource Center** project should include the following:

- project overview
- project goals and objectives
- summary of results from prior support
- explanation of principles that guided the project design, informed by the literature
- detailed project description with a timeline
- qualifications of key personnel who will be coordinating the project
- anticipated results
- evaluation plan
- dissemination plan
- sustainability plan

Include a description of the responsibilities, qualifications, and level of effort of the key personnel involved in the project, including the role of consultants and advisors at each stage of the project. Provide documentation of collaborative relationships and partnerships that are essential to the project, such as letters of support.

Results from Prior Support: If the prospective PI or Co-PIs received support for related NSF activities within the past five years, a description of the project(s) and outcomes must be provided in sufficient detail to enable reviewers to assess the value of results achieved. Past projects should be identified by NSF award number, funding amount, period of support, title, summary of results, and a list of publications and formal presentations that acknowledge the NSF award (do not submit copies of the latter). Evaluation data should be clearly described. Details regarding evaluation data from past projects should be included in the Supplementary Documentation. PIs and co-PIs with overdue Final Reports on previous NSF awards (not submitted within 90 days after previous NSF awards expired) may not receive any new grants until those Final Reports have been submitted.

Evaluation: It is expected that ITEST projects will include, at a minimum, two stages of evaluation (formative and summative) at a level commensurate with the nature and scope of the proposed project. Elements to be addressed in the Evaluation Plan of a proposal:

- The evaluation questions
- Strategies used for the various phases of the project
- General information about the evaluation processes including sample sizes, instruments used, nature of the data (quantitative and qualitative), and analytical methods
- Timeline: When, during the various phases of the project, evaluation work will take place; be sure to allot adequate time for all phases including an adequate and thorough summative evaluation
- Budget: The budget should be adequate to enable the evaluator to conduct a thorough project evaluation
- Name, credentials, and responsibilities of the evaluator(s)

Dissemination: Describe, as appropriate, how information about the project and any knowledge gained in developing the project will be shared with the field.

Timeline: Provide a detailed (e.g., quarterly) schedule for each year of the project that indicates the major developmental steps for all the aspects of the project.

Sustainability: Describe the plans to sustain the project efforts beyond the period of the grant, as appropriate.

Other sections (in addition to the 15 page narrative):

References Cited: Any literature cited should be specifically related to the proposed project, and the Project Description should make clear how each reference has played a role in the motivation for, or design of, the project.

Biographical Sketches: Biographical information (no more than two pages each) must be provided for each senior person listed on the budget forms, including consultants, and advisors. Include career and academic credentials, as well as e-mail and mailing address.

Special Information/Supplementary Documentation: The only items permitted in the Supplementary information section are the LOI confirmation receipt, letters of commitment from project partners, evaluation results from prior support as appropriate, the postdoctoral researcher mentoring plan (if applicable) and the data management plan. *The first page should be your LOI confirmation receipt from FastLane which shows the LOI ID, title, PI name, and submission date.*

Appendix: Not permitted. The 15 page Project Description should contain all of the information needed to describe the projects. Proposals submitted with an Appendix will be returned without review.

B. Budgetary Information

Cost Sharing: Inclusion of voluntary committed cost sharing is prohibited

Other Budgetary Limitations:

Additional limitations to consider include the following:

- Major research equipment purchases are not supported. The ITEST program limits the purchase of equipment to software, probes, and general equipment needed to implement a given project.

C. Due Dates

- **Letter of Intent Due Date(s) (required)** (due by 5 p.m. proposer's local time):

September 20, 2012

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

November 13, 2012

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 judgments.

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 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.

More comprehensive information on NSF Reporting Requirements 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.

Additional reporting requirements may be included, e.g., to support program evaluation, as required.

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:

- Address questions to, telephone: (703) 292-8628, email: DRLITEST@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 55,000 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.

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

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

- **Location:** 4201 Wilson Blvd. Arlington, VA 22230
- **For General Information** (NSF Information Center): (703) 292-5111
- **TDD (for the hearing-impaired):** (703) 292-5090
- **To Order Publications or Forms:**
 - Send an e-mail to: nsfpubs@nsf.gov
 - or telephone: (703) 292-7827
- **To Locate NSF Employees:** (703) 292-5111

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; and project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to proposer institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies or other entities needing information regarding applicants or nominees as part of a joint application review process, or in order to coordinate programs or policy; and to another Federal agency, court, or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, *NSF-50*, "Principal Investigator/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004), and *NSF-51*, "Reviewer/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

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

Suzanne H. Plimpton

[Policies and Important Links](#)

[Privacy](#)

[FOIA](#)

[Help](#)

[Contact NSF](#)

[Contact Web Master](#)

[SiteMap](#)



The National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia 22230, USA
Tel: (703) 292-5111, FIRS: (800) 877-8339 | TDD: (800) 281-8749

Last Updated:
11/07/06
[Text Only](#)