

Informal Science Education (ISE)

PROGRAM SOLICITATION

NSF 11-546

REPLACES DOCUMENT(S):
NSF 10-565



National Science Foundation

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

Preliminary Proposal Due Date(s) (optional):

August 12, 2011

except Connecting Researchers and Public Audiences (CRPA) proposals, where preliminary proposals do not apply

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

January 11, 2012

except CRPA proposals (which do not have deadlines)

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 PAPP Guide Part I: *Grant Proposal Guide* (GPG) [Chapter II.C.2.g\(xi\)](#) for further information about the implementation of these recommendations.

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

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

Revision Summary

The due dates for the ISE program have been changed from those in [NSF 10-565](#).

Preliminary Proposals are now optional.

The description of the ISE program has changed. The Communicating Research to Public Audiences (CRPA) project type is now Connecting Researchers and Public Audiences (CRPA) and the description of this activity has been changed to permit the submission of proposals based on current research awards or within 12 months after their final expiration date.

Some elements of the proposal preparation process have changed.

The types of supplementary documents that can be submitted with a proposal have been changed.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Synopsis of Program:

The ISE program supports innovation in anywhere, anytime, lifelong learning, through investments in research, development, infrastructure, and capacity-building for STEM learning outside formal school settings.

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 the Program, telephone: (703)292-8616, email: DRLISE@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: 60 - Approximately 8 Research, 8 Pathways, 17 Full-Scale Development, 3 Broad Implementation, and up to 24 Connecting Researchers and Public Audiences awards (CRPA) will be made per year.

Anticipated Funding Amount: \$28,000,000 in FY 2012 for new awards, pending availability of funds.

Eligibility Information

Organization Limit:

None Specified

PI Limit:

For CRPA proposals only, the PI must have an active NSF research award in good standing or submit within 12 months after the research project's final expiration date. There are no PI limits for Research, Pathways, Full-Scale Development, and Broad Implementation project types.

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI:

None Specified

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Not Applicable
- **Preliminary Proposals:** Submission of Preliminary Proposals is optional. Please see the full text of this solicitation for further information.
- **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

- **Preliminary Proposal Due Date(s) (optional):**

August 12, 2011

except Connecting Researchers and Public Audiences (CRPA) proposals, where preliminary proposals do not apply

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

January 11, 2012

except CRPA proposals (which do not have deadlines)

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.

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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 part of this mission, the Directorate for Education and Human Resources (EHR) has primary responsibility for providing national and research-based leadership in STEM education. EHR emphasizes four themes in fulfilling this responsibility:

1. Build a globally competitive, diverse STEM workforce.
2. Inspire and engage the public as science learners.
3. Build capacity for citizens to address societal changes.
4. Through education research, advance understanding and anticipate the form and value of tomorrow's learning.

To address these themes, the Directorate sponsors programs in the Divisions of Research on Learning in Formal and Informal Settings (DRL), Undergraduate Education (DUE), Graduate Education (DGE), and Human Resource Development (HRD). The ISE program is managed in DRL.

The Division of Research on Learning in Formal and Informal Settings

DRL invests in projects to enhance STEM learning for people of all ages in both formal and informal learning settings. Its mission includes promoting innovative and transformative research and development, and evaluation of learning and teaching in all STEM disciplines. New and emerging areas of STEM must play prominent roles in efforts to improve STEM education. The integration of cutting-edge STEM content and the engagement of scientists, engineers, and educators from the range of disciplines represented at NSF is encouraged in all DRL initiatives. DRL's role is to be a catalyst for change by advancing theory, method, measurement, development, evaluation, and application in STEM education. The Division seeks to support both development of promising new ideas and large-scale implementation of proven educational innovations.

The Division's programs and activities offer a set of complementary approaches for advancing research, development, and

improvement of practice.

- The Informal Science Education (ISE) program supports innovation in anywhere, anytime, lifelong learning, through investments in research, development, infrastructure and capacity-building for STEM learning outside formal school settings.
- The Discovery Research K-12 (DR K-12) program enables significant advances in preK-12 and teacher learning of the STEM disciplines through research and development on innovative resources, models, and technologies for use by students, teachers, administrators and policy makers.
- The Innovative Technology Experiences for Students and Teachers (ITEST) program invests in projects designed to address the growing demand for professional and information technology workers through the design, implementation, scale-up, and testing of technology-intensive educational experiences for students and teachers, and through related research studies.
- The Research and Evaluation on Education in Science and Engineering (REESE) program advances research at the frontiers of STEM learning, education, and evaluation, in order to provide foundational knowledge for improving STEM teaching and learning at all educational levels and in all settings.
- The Promoting Research and Innovation for Methodologies in Evaluation (PRIME) program emphasizes innovative approaches for determining the impacts of STEM education projects and programs, and expanding the theoretical foundations for evaluating STEM education and workforce development initiatives.
- Transforming STEM Learning (TSL) explores the opportunities and challenges implied by radically innovative visions of the future for STEM learning.

Each of these programs and activities is also intended to improve their field's capacity to further STEM learning. They are central to NSF's strategic goals to: *Transform the Frontiers*, *Innovate for Society*, and *Perform as a Model Organization*. These goals emphasize "... the seamless integration of education and research..." and address the connections between NSF programs, societal needs, and the key role of new knowledge and creativity (NSF, 2011).

DRL and Innovation

All research and development activities within DRL aim at generating knowledge and transforming practice in STEM education. DRL's programs are designed to complement each other within a cycle of innovation and learning (see Figure 1) that forms the conceptual framework for its programs (adapted from American Statistical Association, 2007; NSF, 2005; RAND, 2003). All DRL programs are concerned with all five components of the cycle, to different degrees.

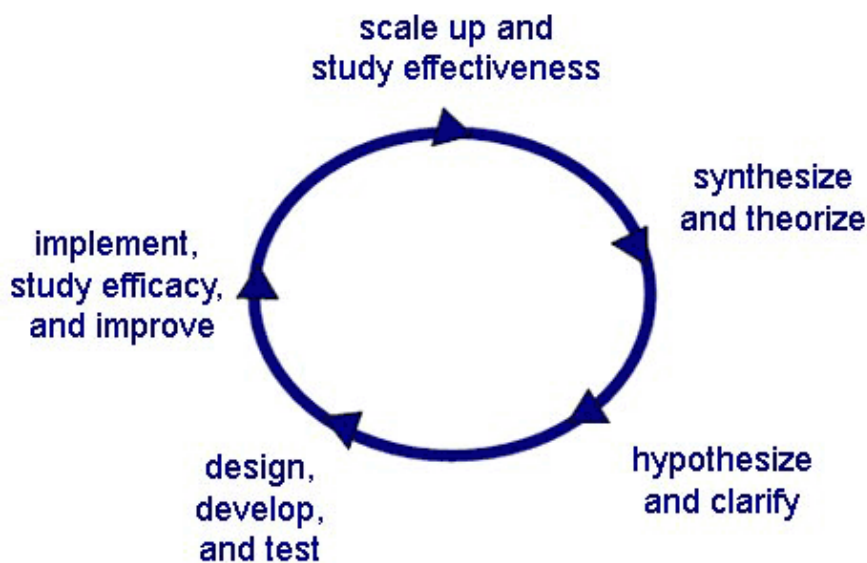


Figure 1. Cycle of Innovation

Each part of the cycle forms the vital and compelling foundation for transition to the next part of the cycle. The research, development, implementation and evaluation activities need to be appropriately rigorous. Projects funded by DRL are providing the ideas, resources, and human capacity to advance STEM learning and education in the 21st century:

- Challenging the STEM education and research communities with transformative ideas
- Conducting the pioneering and pragmatic research necessary to advance STEM learning
- Developing and studying world-class learning resources for teachers, students, and the public
- Addressing workforce needs through the design and study of technology-intensive educational experiences.
- Developing theories, methods, and tools for both research and evaluation of STEM education projects and programs.

II. PROGRAM DESCRIPTION

A. Introduction to Informal Science Education

"Informal" science education experiences are those that occur outside formal school settings. Americans spend over 80% of lifetime waking hours outside schools (Stevens & Bransford, 2007), and potentially have access to a vast array of learning resources, experiences, and educators. Moreover, mobile media and social networks have increased educational possibilities to create a global learning environment accessible by learners of all ages.

In the larger landscape of 21st century STEM education, informal settings are positioned to play a pivotal role. They offer a number of fundamental strengths to STEM learners, with related challenges that NSF encourages the field to address:

Continuity: Almost any environment such as a home, a museum, a street or a virtual or augmented reality game can provide informal science education experiences. Yet, this ubiquity challenges continuity. How can learners be supported to make conscious and strategic bridges between what they learn in one setting and another, to be cumulative over their lifetimes?

Equity of access: Informal environments are, in principle, accessible to all learners including underserved and underrepresented audiences. Evidence suggests that these environments have particular potential for supporting learners from non-dominant groups (National Research Council, 2009). How can projects explore community partnerships and creative learning experiences that are relevant to and inclusive of all learners, at all learning levels?

Breadth of science practice: Informal settings typically offer learners direct access to compelling and even unique phenomena in the natural and designed world. How can these phenomena be leveraged to engage learners in all aspects of science practices such as reflection, abstraction, or grappling with scientific principles?

Assessment: In informal environments, learners advance and share their knowledge voluntarily, without the constraints of mandated curricula and high-stakes tests. How can such unconstrained experiences be supported to demonstrate what learners know and can do, in ways that are seen as legitimate by themselves and others?

Professional development: Ubiquity, digital networks, and lack of formal accreditation procedures mean that anyone with appropriate expertise can facilitate STEM learning in the informal world. What can be done to develop and support a network of professional development opportunities to take advantage of this enormous resource?

Coherence: The informal science education sector consists of many distinct, independent entities and communities and thus adapts quickly to new knowledge, systems, and opportunities. How can increased coherence of effort and impact be achieved, while maintaining innovation?

B. ISE Investment Areas

To advance the field of informal science education, the ISE program encourages project proposals that incorporate activities in *research and evaluation, design and development, or capacity-building*.

The ISE program seeks to advance **research** by building the theoretical and empirical foundations for effective informal STEM learning, furthering the assessment of such learning, and supporting the use of innovative methods to address questions of importance to those who work in informal science education settings. Investigators proposing to conduct research about informal STEM learning should clearly articulate the importance of such research to the informal science education field, the questions to be investigated, the specific approaches that will be used, and how the research process and findings would be evaluated and disseminated. Researchers are encouraged to involve informal learning practitioners as partners in their projects.

The ISE program invests in the **design and development of models, resources, and programs** for STEM learning throughout the lifespan. Proposals can use a broad range of communication formats and experiences, such as mobile and broadcast media, virtual learning environments, exhibitions, TV, radio, films, citizen science, and after-school and/or out-of-school programs. Proposals that help learners identify, navigate, and integrate among multiple resources are particularly encouraged. Investigators should make a case for the innovative contributions of such deliverables. Examples include building innovative technology platforms with multiple uses, creating virtual organizations, building cross-sector partnerships, or developing connections among the wealth of existing informal science education resources in the physical and online worlds. Such approaches should advance the field toward a more seamless informal learning infrastructure in which participants can learn anywhere and anytime, and are deliberately supported to deepen their STEM expertise over their lifetimes.

The ISE program seeks to **build the STEM and education expertise** of informal science education's broad community of professionals, volunteers, parents and caregivers, and all those with potential to facilitate the learning of others. All proposers should provide a plan for the substantial dissemination of promising practices for engaging the public in STEM learning to maximize impact, particularly design and development that systemically reaches public and/or professional audiences on a national scale. The program particularly encourages proposals that have the potential to diversify the field and participation at all levels or support broader use of existing research, evaluation, and best practices. Partnerships among creators of informal science education experiences, STEM experts, and learning researchers that encourage the integration of institutional programs and resources are highly desirable.

C. Promoting Linkages to STEM Education and Scientific Research

Proposers are encouraged to situate their proposals within the larger STEM education landscape. For example, the ISE program supports efforts to respond to issues of national importance in STEM education, such as building links between formal and informal learning settings, using informal science resources to support learning progressions in STEM content areas, strengthening the connections between research and practice, and inspiring learners to become future innovators and/or pursue careers in STEM fields. Such efforts contribute to a more seamless infrastructure of lifelong STEM learning.

A number of fruitful and important directions for future research, development, and capacity building efforts may be found in recent reports such as *Learning Science in Informal Environments: People, Places, and Pursuits* (National Research Council, 2009), *Surrounded by Science* (National Research Council, 2009), *Prepare and Inspire: K-12 Education in Science, Technology, Engineering, Math (STEM) for America's Future* (President's Council of Advisors on Science and Technology, 2010), and *Preparing the Next Generation of STEM Innovators* (National Science Board, 2010). These reports highlight effective strategies for integrating informal science education projects with the broader goals of K-12 STEM education. Additionally, the Center for Advancement of Informal Science Education (CAISE) has produced a number of timely field-generated reports which explore critical topics such as collaborations with K-12 schools, policy, accessibility, and public engagement with science. Collectively, the recommendations found in these publications could generate transformative models and research, thereby supporting learning, engagement, development of 21st century skills, and STEM career interest among youth at all

ability levels.

Appropriate STEM content for ISE proposals may be drawn from any STEM research area supported by NSF including the behavioral and social sciences, and should be discussed in sufficient depth to provide a clear understanding of the STEM concepts, topics, processes, and associated skills that are conveyed to the target audience. Collaborations with research scientists (including graduate students) are strongly encouraged to strengthen ISE projects. For example, scientists may serve as content specialists, co-designers of materials, advisors, or presenters trained to engage directly with public audiences. Proposers are encouraged to consider STEM topics that are of particular relevance to their target audiences, of broad societal concern (e.g., energy, sustainability), are foundational to understanding such issues (e.g., dynamic systems) or are at important intersections of STEM disciplines, arts, and humanities. The ISE program encourages proposals that could contribute to the Science, Engineering and Education for Sustainability initiative (<http://www.nsf.gov/sees>).

D. ISE Project Types

Like all NSF programs, ISE invests in Conferences, Symposia, and Workshops; EAGER and RAPID grants; and Grant Supplements (see section D below and the GPG). The ISE program also invests in five types of projects that are specific to the program: **Research; Connecting Researchers and Public Audiences; Pathways; Full-Scale Development; and Broad Implementation**. These project categories relate to the DRL cycle of innovation, as mentioned above, and are not listed in any order of priority. Although all proposals should have a foundation of prior work and research, the cycle sequence is not meant to be taken literally. For example, Full-Scale Development projects must build on extant literature and the state of the informal learning field, but they do not necessarily require completed prior Research or Pathways projects.

1. **Research projects** contribute to the "hypothesize and clarify" and "synthesize and theorize" components of the DRL cycle of innovation. The primary goal of research projects is to advance knowledge in the informal STEM learning field rather than to develop specific deliverables for implementation. Research projects may be innovative empirical studies, methodological advances, syntheses of research, or theoretical studies intended to move the field forward. They might develop innovative approaches for assessing societal, economic, or learning impacts of informal science activities. Of interest are projects to develop, validate, and disseminate assessment tools, especially if these have potential utility for a group of related projects and activities in the informal science education field. One question of particular interest to the ISE program is how to create improved measurement models and methods for assessing changes in public understanding of science, science literacy, and engagement with science. Such research proposals could assess the current status of measurement in these areas, and propose methods to increase their reliability and validity. Projects that synthesize existing research or evaluation studies, or that study learners across multiple or distributed settings and over time are strongly encouraged as well.

A research project may involve the creation of new learning resources, applications, media, artifacts, programs, or environments if these are necessary to answer the research questions or test hypotheses that are posed. ISE Research projects are distinguished from proposals submitted to the REESE program by their emphasis on the connections to practice in informal science education. They should involve informal learning organizations and practitioners as active partners.

Research projects can be funded for up to \$1.2 million total and up to three years in duration.

2. **Connecting Researchers and Public Audiences (CRPA) projects** relate to the "implement, study efficacy, and improve" component of the DRL cycle of innovation and promote knowledge-building in society, thereby enhancing the intellectual capital of the Nation. These awards, formerly known as Communicating Research to Public Audiences, provide an opportunity for NSF-funded researchers to convey to diverse audiences key features of their research such as the methods, results, and significance. This type of ISE investment is an effort to broaden the impacts of NSF research by promoting the general public's STEM literacy and engagement with research in out-of-school settings. To encourage the use of best practices in informal science education, collaborations with informal science education institutions and/or professionals in the design and implementation of project activities are required.

Projects will be based on current NSF research awards (or be submitted within 12 months after their final expiration date). Any research subject area supported by NSF is eligible for CRPA funding and collaborations that incorporate multiple research proposals and scientists to address a common theme are also appropriate. The research award results may be communicated to the public by any platform (such as media presentations, exhibits, youth-based activities, web-based, or cyber-enabled learning) using contemporary, evidenced-based approaches. It is expected that the product (s) will be sustained beyond the expiration of the CRPA award. ISE is collaborating with NSF Directorates and programs to advance CRPA goals.

CRPA projects can be funded up to \$150,000 total and up to two years in duration.

3. **Pathways projects** relate to the "design, develop, and test" component of the DRL cycle of innovation. They include planning activities, pilot studies, and feasibility studies, or, in general, innovative work that is on a path toward a major ISE project (Research, Full-Scale Development, or Broad Implementation) but needs to address critical issues or decisions before major projects can be formulated. Pathways proposals should be more focused than general planning work normally required for submission of a major proposal, and should result in lessons learned that can inform the informal science education field as well as the project team. Not all of the Pathways projects will necessarily result in a subsequent proposal.

Pathways projects can be funded for up to \$250,000 total and up to two years in duration.

4. **Full-Scale Development projects** relate to the "implement, study efficacy, and improve" component of the DRL cycle of innovation. These projects generate an innovative idea or approach to informal science education, develop and fully implement the concept, and evaluate its effectiveness. Such initiatives can be directed at improving STEM learning by the public, increasing capacity of the professional audience, contributing to the informal science education infrastructure, or embracing several of these goals. While many Full-Scale Development projects create complete STEM learning resources, programs, or experiences, they need to be guided by an explicit conceptual framework and should generate significant knowledge about impact and efficacy.

Full-Scale Development proposals typically will be funded in the \$1 million to \$3 million total range and may be up to five years in duration; projects requiring less than \$1 million total can

also be supported.

5. **Broad Implementation projects** relate to the "scale up and study effectiveness" component of the DRL cycle of innovation, proposing strategies for maximizing prior investments in informal STEM education. These projects are expected to substantially broaden the reach of products or programs within the informal science education field that have demonstrated success with the audience they already reach without sacrificing quality. Definitions of expanded reach may include, but are not limited to, geography, age, socio-economic status, cultural/linguistic group, gender, or learning setting. Proposers are particularly encouraged to consider underrepresented groups as target audiences. Broad Implementation projects will generally, but not necessarily, extend work done with prior ISE program funding.

Broad Implementation proposals must describe substantive evidence from summative evaluations or efficacy studies that the already-developed educational products are effective with some populations or in some settings and are ready for wider distribution to a broader population or new setting(s). It is likely that such projects will involve innovative integration or incremental improvements or adaptations.

Broad Implementation projects are typically funded in the \$1 million to \$3 million total range and may be up to five years in duration, in order to encourage wide distribution.

E. Other Funding Opportunities

The ISE program also funds Conferences, Symposia, and Workshops; EAGER and RAPID grants; and Grant Supplements for existing awards. Such proposals may be submitted at any time, as described in the Grant Proposal Guide (GPG), which is available at <http://www.nsf.gov/> by searching for "current GPG."

- Conferences, Symposia and Workshops (see [GPG, II.D.8.](#))
- Early-concept Grants for Exploratory Research (EAGER) (see [GPG II.D.2](#))
- Grants for Rapid Response Research (RAPID) (see [GPG, II.D.1](#))
- Faculty Early Career Development (CAREER)
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503214

The programs listed below may also be of interest; see individual solicitations for due dates:

- Cyberinfrastructure Training, Education, Advancement and Mentoring for Our 21st Century Workforce (CI-TEAM)
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=12782&org=OCI&from=home
- Climate Change Education Partnership (CCEP)
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503465
- Cyber-Enabled Discovery and Innovation (CDI)
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503163
- Transforming STEM Learning (TSL)
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503571&org=DRL&from=home
- Virtual Organizations as Sociotechnical Systems (VOSS)
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503256

F. Resources and References

Online Resources

<http://www.nsf.gov/>: Information about the NSF Education and Human Resources (EHR) Directorate, the Division of Research on Learning in Formal and Informal Settings (DRL) and the NSF Strategic Plan.

<http://www.caise.insci.org/>: General resource for informal science education professionals. Includes Frequently Asked Questions section about the Informal Science Education program proposal process, deadlines, and evaluation. Also, Inquiry Group Reports on a number of topics of interest to the field such as policy, collaboration with schools, online communities, and more.

<http://www.informalscience.org/>: Resources for research, evaluation, and techniques related to informal science learning, as well as examples of projects in informal STEM education. Public repository for summative evaluations of expired ISE awards.

http://caise.insci.org/uploads/docs/Eval_Framework.pdf: The Framework for Evaluating Informal Science Education Projects - includes information on the evaluation of activities for informal audiences.

<http://www.exhibitfiles.org/>: Resource for exhibit developers.

<http://www.cpb.org/> : Resources for media professionals.

<http://www.scienceafterschool.org/index> : Resources compiled by The Coalition for Science After School.

<http://www.citizenscience.org/>: Information about citizen science and related projects.

<http://www.nsdli.org/>: Online digital library for STEM education and research.

http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf08204: NSF report on cyberlearning, Fostering Learning in the Networked World: The Cyberlearning Opportunity and Challenge. A 21st Century Agenda for the National Science Foundation, Report of the NSF Task Force on Cyberlearning.

<http://howtosmile.org/>: An online library of math and science activities developed by informal science education institutions. Users can search, contribute, and suggest resources.

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President's Council of Advisors on Science and Technology (2010). Prepare and Inspire: K-12 Education in Science, Technology, Engineering, and Math (STEM) for America's Future. <http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast-stem-ed-final.pdf>

RAND Mathematics Study Panel (2003). Mathematical proficiency for all students: Toward a strategic research and development program in mathematics education. Santa Monica, CA: RAND Corporation.

Stevens, R. & Bransford, J. (2007). The LIFE Center's Lifelong and Lifewide Diagram. In Banks, J. A. (ed.), Learning in and out of school in diverse environments: Life-Long, Life-Wide, Life-Deep. Seattle, WA: UW Center for Multicultural Education.

III. AWARD INFORMATION

The ISE program expects to make approximately 60 awards based on anticipated funding of \$28 million in FY 2012 for new awards. It is anticipated that approximately 8 Research, 8 Pathways, 17 Full-Scale Development, 3 Broad Implementation, and up to 24 Connecting Researchers and Public Audiences awards will be made as Standard or Continuing Grants per year, pending availability of funds.

Duration and Funding Levels:

Research: Project duration from one to three years. The maximum award is \$1,200,000 total.

Connecting Researchers and Public Audiences: Project duration may be up to two years and the maximum award is \$150,000 total.

Pathways: Project duration is up to two years. The maximum award is \$250,000 total.

Full-Scale Development: Project duration may be from one to five years. Full-Scale Development proposals are typically funded in the \$1 million to \$3 million total range; projects requiring less than \$1 million total can also be supported.

Broad Implementation: Project duration may be from one to five years. Broad Implementation proposals are typically funded in the \$1 million to \$3 million total range.

IV. ELIGIBILITY INFORMATION

Organization Limit:

None Specified

PI Limit:

For CRPA proposals only, the PI must have an active NSF research award in good standing or submit within 12 months after the research project's final expiration date. There are no PI limits for Research, Pathways, Full-Scale Development, and Broad Implementation project types.

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI:

None Specified

Additional Eligibility Info:

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

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Preliminary Proposals (*optional*):

Preliminary proposals are **optional for Research, Pathways, Full Scale Development and Broad Implementation proposals and**

do not apply to CRPA proposals. New applicants to the ISE program are encouraged to submit preliminary proposals. The response to a preliminary proposal is either to encourage or discourage submission of a full proposal based on reviewers' assessment of the likelihood that such a proposal will be competitive. This assessment is advisory, and full proposals may be submitted whether an encourage or discourage is received. Written reviews provide feedback to PIs to strengthen the proposals for full submission.

The following instructions apply to preliminary proposals submitted to the ISE program:

Submission of a preliminary proposal requires completion of the following forms in FastLane. No additional NSF forms are required.

1. **Cover Sheet. The Cover Sheet must include the solicitation number and the Preliminary Proposal box must be checked.** The project title must begin by identifying of the kind of project: Research; Pathways; Full-Scale Development; or Broad Implementation.
2. **Project Summary.** The Project Summary is limited to one single-spaced page. The Project Summary is a critical proposal element that must make the essence of the project clear to reviewers. It must succinctly identify the project's Intellectual Merit and Broader Impacts in separate sections under these two headings. **If Intellectual Merit and Broader Impacts are not explicitly identified, or if the Project Summary is longer than one page, the proposal will be returned without review.**
3. **Project Description.** The narrative for a preliminary proposal is a condensed version of the Project Description for a full proposal. **The first sentence must identify the kind of project: Research; Pathways; Full-Scale Development; or Broad Implementation.** It is limited in length to six (6) single-spaced pages. It must identify the essential features of the project using the same category headings as for full proposals.
4. **Budget (including Justification).** Provide a one-page budget summary for the full five year period. This should be entered in Budget Year 1 in FastLane. (FastLane will automatically generate a cumulative budget that is identical to the full five-year budget you entered in Year 1.)
5. **Supplementary Documents.** Additional documents will NOT be accepted for preliminary proposals.

Other FastLane forms (i.e., References, Biographical Sketches, Current and Pending Support) should NOT be submitted for a preliminary proposal.

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.

If a proposal is resubmitted after being previously declined, it must be substantially revised, responding to concerns raised in the written reviews and panel summary.

1. Cover Sheet

Proposers are reminded to include the number of this solicitation on the Cover Sheet. Failure to do so will delay processing of the proposal. Proposals that are based on preliminary proposal submissions must have the preliminary proposal number entered into the appropriate box on the Cover Sheet. The project title must begin by identifying the kind of project: Research; CRPA; Pathways; Full-Scale Development; or Broad Implementation. Proposers should refer to the NSF Grant Proposal Guide for information related to human subjects research.

2. Project Summary

The Project Summary is limited to one page and is a critical proposal element that must make the essence of the project clear to reviewers. The first sentence must identify the project type: **Research; Pathways; Full-Scale Development; Broad Implementation or Connecting Researchers and Public Audiences.** It must succinctly identify the project's Intellectual Merit and Broader Impacts in separate sections under these two headings. **If Intellectual Merit and Broader Impacts are not explicitly identified in the project summary, the proposal will be returned without review.** CRPA projects must also identify the NSF research award number(s) and title(s) upon which the CRPA is based.

3. Project Description (Narrative)

The first sentence must identify the project type. The Project Description is limited to 15 single-spaced pages in length.

Project Rationale

- Describe primary project goals, hypotheses, or research questions.
- Identify the audience for the work and the appropriate strategy or approach for reaching that audience.
- Clearly identify a STEM focus and make a case for its relevance, the nature and importance of the work,

- and possible challenges.
- Explain how the proposed project builds on pertinent literature, prior practice or research and how the project will advance the knowledge, practice, capacity or other critical aspects of informal STEM learning.
- Describe results of relevant prior NSF support of senior project personnel within the past five years, if any, such that reviewers can judge the quality of that work. If a proposal is based on a prior Pathways project, the findings and accomplishments of that project must be clearly specified, along with the award number and PI name. CRPA projects must identify the NSF research award number and title upon which the CRPA is based.

Project Design

- Describe deliverables and intended learning outcomes and impacts on the target audience and on the field.
- Cite references to relevant research literature in informal learning and other areas that support the proposed strategies, approaches and evaluation.
- Describe, in detail, innovative dissemination plans for effectively sharing lessons learned and other information about the project with audiences that include academic researchers, policy makers, and practitioners. Include creative strategies to maximize the number of program participants reached over the life of the project and beyond.
- If scientist partners will personally convey their research to public audiences, explain how they will develop the skills to do so, or build on existing expertise.

Project Management

- Explain how the project team and partners will work collaboratively to achieve project outcomes. Describe members of the team, collaborators, senior personnel, advisory committee members, consultants, and contractors and how they provide the relevant experience and expertise in STEM content, informal science learning, knowledge of target audiences, media, research, and evaluation.
- Delineate a scheduled work plan with major milestones for key project tasks.

Project Evaluation

All proposals must include an appropriate evaluation plan. A number of resources for developing evaluation plans are available at <http://caise.insci.org/resources> including the *2010 User-Friendly Handbook for Project Evaluation, Framework for Evaluating Impacts of Informal Science Education Projects* (Framework), and the Impacts and Indicators Worksheet.

For all proposals, the evaluation questions, design, data collection methods, analyses, and reporting strategies must be detailed in the evaluation plan. Evaluation designs and methods should be appropriate to the type, scope, and scale of the proposed project and answer the evaluation questions. Logic models can help to describe the project logic in terms of inputs, outputs, outcomes and impacts.

Research projects must include an external summative evaluation. Methods may include the use of an advisory board or other expert group that periodically reviews the research quality and reports in writing to the Principal Investigator.

Pathways projects must include an evaluation that informs subsequent project decision making and lessons learned for the field.

Full-Scale Development projects must include an external summative evaluation. In addition, other types of evaluation that inform project learning and decision-making should be included.

Broad Implementation projects must include an external summative evaluation and other types of evaluation that inform the project learning and decision-making, as appropriate. The investigator must report some measure of the project output (such as the number of new learners or communities reached). We encourage investigators to create new approaches to conceptualizing the magnitude of a project's impact.

Connecting Researchers and Public Audiences projects should include an external summative evaluation that is commensurate with the scope and depth of the proposed activities. Some amount of formative evaluation is also encouraged.

Note with respect to Institutional Review Board (IRB) Processes: Most proposals to this solicitation involve research or evaluation studies that will require review by the submitting organization's IRB. Information about human subject research can be found in the NSF Grant Proposal Guide (GPG).

4. Budgets

All budget requests must be consistent with the project scope and duration. All budgets (grantee and subawards) must be accompanied by Budget Justifications that include itemizations corresponding to each FastLane budget line item. Requested equipment must be essential components of project deliverables. If personnel expenses are entered in section B.1. of the budget--postdoctoral scholars--a one-page postdoctoral mentoring plan is required in the supplementary documents or **the proposal will be returned without review** (see GPG).

Include under Travel (Line E on the FastLane budget and Field D on the Grants.gov budget) the cost for the PI to attend a two-day meeting every other year at, or near, NSF.

Each subaward on line G.5 requires a complete set of Proposal Budget forms accompanied by a Budget Justification that includes the basis for selecting the subawardee as well as itemization of expenses and explanations.

5. Other Forms

Biographical Sketches: Sketches must be provided for the PI, Co-PIs, and other Senior Personnel. These sketches need not follow a prescribed format, but must be limited to two pages per person.

Current and Pending Support: Required for the PI, Co-PIs, and senior project personnel. The proposal being submitted should be listed first and identified as pending.

Facilities, Equipment & Other Resources: 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 (See the GPG Chapter II.C.2.i). The description should be narrative in nature and must not include any quantifiable financial information.

6. Supplementary Documents

The 15-page Project Description must provide sufficient information for reviewers to make reasoned judgments about the proposed work.

All ISE proposals that include funding for Postdoctoral researchers must submit a one page **Postdoctoral Researcher Mentoring Plan** in the supplementary documents section otherwise the proposal will be returned without review (see GPG Chapter II.C.2.j. for additional instructions for preparation of this section).

Fastlane will not permit submission of a proposal that is missing a **Data Management Plan**. Plans for data management and sharing of the products of research, including preservation, documentation, and sharing of data, samples, physical collections, curriculum materials and other related research and education products should be described in no more than two pages labeled "Data Management Plan" (see GPG Chapter II.C.2.j. for additional instructions for preparation of this section). For more information and the instructions for proposals submitted to the Directorate for Education and Human Resources (EHR) see: <http://www.nsf.gov/bfa/dias/policy/dmp.jsp>

All ISE proposals are allowed to submit as Supplementary Documents:

- Letters of commitment from consultants, advisors, distributors, and organizational partners indicating their roles in the project.
- Executive summaries of formative and summative evaluation findings of prior work (2 page maximum).
- Details of evaluation plans for the proposed work (5 page maximum), plus impacts and indicators worksheets, and summary logic models, as appropriate.

In addition, it may be necessary to provide a limited amount of additional supporting information in Supplementary Documents. Pls are limited to a maximum of 30 pages of supporting material in addition to the three bulleted items listed above.

For deliverables that involve media that cannot be represented on the printed page:

Only media that cannot be submitted in Supplementary Documents may be provided as DVD or CD; 15 copies labeled with proposal number, title, and PI, must be sent to: Informal Science Education Program, EHR/DRL, Room 885, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA 22230. These materials, which will not be returned, must be received within 5 business days following electronic submission; clearly mark the package re: Supplementary Documents and indicate the proposal number.

Note: Supplementary Documents are distinct from Appendices, as stipulated in the Grant Proposal Guide: Appendices may not be included unless a formal deviation has been authorized. See GPG Chapter II.A for more information about deviations.

B. Budgetary Information

Cost Sharing: Inclusion of voluntary committed cost sharing is prohibited

Other Budgetary Limitations:

Funding for the following are not supported by this program: capital or operating expenses; purchase of major or office equipment; vehicles; undergraduate tuition; paid advertising; admissions or similar fees; operating expenses for school field trips, camps, science fairs or similar competitions; or projects whose primary focus is health or medicine.

C. Due Dates

- **Preliminary Proposal Due Date(s) (optional):**

August 12, 2011

except Connecting Researchers and Public Audiences (CRPA) proposals, where preliminary proposals do not apply

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

January 11, 2012

except CRPA proposals (which do not have deadlines)

D. FastLane/Grants.gov Requirements

- **For Proposals Submitted Via FastLane:**

Detailed technical instructions regarding the technical aspects of preparation and submission via FastLane are available at: <https://www.fastlane.nsf.gov/a1/newstan.htm>. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov. The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this funding opportunity.

Submission of Electronically Signed Cover Sheets. The Authorized Organizational Representative (AOR) must electronically sign the proposal Cover Sheet to submit the required proposal certifications (see Chapter II, Section C of the Grant Proposal Guide for a listing of the certifications). The AOR must provide the required electronic certifications within five working days following the electronic submission of the proposal. Further instructions regarding this process are available on the FastLane Website at: <https://www.fastlane.nsf.gov/fastlane.jsp>.

- **For Proposals Submitted Via Grants.gov:**

Before using Grants.gov for the first time, each organization must register to create an institutional profile. Once registered, the applicant's organization can then apply for any federal grant on the Grants.gov website. Comprehensive information about using Grants.gov is available on the Grants.gov Applicant Resources webpage: http://www07.grants.gov/applicants/app_help_reso.jsp. In addition, the NSF Grants.gov Application Guide provides additional technical guidance regarding preparation of proposals via Grants.gov. For Grants.gov user support, contact the Grants.gov Contact Center at 1-800-518-4726 or by email: support@grants.gov. The Grants.gov Contact Center answers general technical questions related to the use of Grants.gov. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this solicitation.

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

VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

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

A. NSF Merit Review Criteria

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

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

What is the intellectual merit of the proposed activity?

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

What are the broader impacts of the proposed activity?

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

Examples illustrating activities likely to demonstrate broader impacts are available electronically on the NSF website at: <http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf>.

Mentoring activities provided to postdoctoral researchers supported on the project, as described in a one-page supplementary document, will be evaluated under the Broader Impacts criterion.

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

Integration of Research and Education

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

Integrating Diversity into NSF Programs, Projects, and Activities

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

B. Review and Selection Process

Proposals submitted in response to this program solicitation will be reviewed by Ad hoc Review and/or Panel Review.

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

After scientific, technical and programmatic review and consideration of appropriate factors, the NSF Program Officer recommends to the cognizant Division Director whether the proposal should be declined or recommended for award. NSF is striving to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. The time interval begins on

the deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director accepts the Program Officer's recommendation.

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

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

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

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

B. Award Conditions

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

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

More comprehensive information on NSF Award Conditions and other important information on the administration of NSF awards is contained in the *NSF Award & Administration Guide* (AAG) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag.

C. Reporting Requirements

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

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

PIs are required to use NSF's electronic project-reporting system, available through FastLane, for preparation and submission of annual and final project reports. Such reports provide information on activities and findings, project participants (individual and organizational) publications; and, other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system. Submission of the report via FastLane constitutes certification by the PI that the contents of the report are accurate and complete. The project outcomes report must be prepared and submitted using Research.gov. This report serves as a brief summary, prepared specifically for the public, of the nature and outcomes of the project. This report will be posted on the NSF website exactly as it is submitted by the PI.

PIs are required to submit final evaluation reports of the project for posting to the web site <http://www.informalscience.org/> (or other sites designated by ISE) as part of submission of the Final Report and (2) provide project data via the ISE program online project management system. PIs may be requested to provide additional project data for ISE program analysis and evaluation

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 the Program, telephone: (703)292-8616, email: DRLISE@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.

For administrative questions contact the Program by e-mail at DRLISE@nsf.gov or phone at (703)292-8616

IX. OTHER INFORMATION

The NSF Website provides the most comprehensive source of information on NSF Directorates (including contact information), programs and funding opportunities. Use of this Website by potential proposers is strongly encouraged. In addition, National Science Foundation Update is a free e-mail subscription service designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF Regional Grants Conferences. Subscribers are informed through e-mail when new publications are issued that match their identified interests. Users can subscribe to this service by clicking the "Get NSF Updates by Email" link on the [NSF web site](#).

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

ABOUT THE NATIONAL SCIENCE FOUNDATION

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

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

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

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

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

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

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

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

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

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

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

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

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

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