Advancing Informal STEM Learning (AISL)

PROGRAM SOLICITATION
NSF 12-560

REPLACES DOCUMENT(S):
NSF 11-546

National Science Foundation

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

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

August 14, 2012

We strongly suggest that PIs new to the field and PIs with new concepts submit preliminary proposals.

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

January 14, 2013

Due by 5 p.m. proposer's local time:

IMPORTANT INFORMATION AND REVISION NOTES

A revised version of the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG), NSF 13-1, was issued on October 4, 2012 and is effective for proposals submitted, or due, on or after January 14, 2013. Please be advised that the guidelines contained in NSF 13-1 apply to proposals submitted in response to this funding opportunity. Proposers who opt to submit prior to January 14, 2013, must also follow the guidelines contained in NSF 13-1.

Please be aware that significant changes have been made to the PAPPG to implement revised merit review criteria based on the National Science Board (NSB) report, National Science Foundation's Merit Review Criteria: Review and Revisions. While the two merit review criteria remain unchanged (Intellectual Merit and Broader Impacts), guidance has been provided to clarify and improve the function of the criteria. Changes will affect the project summary and project description sections of proposals. Annual and final reports also will be affected.

A by-chapter summary of this and other significant changes is provided at the beginning of both the *Grant Proposal Guide* and the *Award & Administration Guide*.

Please note that this program solicitation may contain supplemental proposal preparation guidance and/or guidance that deviates from the guidelines established in the Grant Proposal Guide.

Highlights of Changes from Previous Solicitation

The name of the program has changed from Informal Science Education (ISE) to Advancing Informal STEM Learning (AISL). AISL better emphasizes the priorities of the solicitation and the changes at NSF:

a. Advancing - This emphasizes that AISL seeks innovative projects that advance the field and that requests need to go beyond just proposing a new exhibit, program or film.

b. Informal - This continues to emphasize that the program is interested in out-of-school learning that makes learning Lifelong, Life Wide (occurring across multiple venues) and Life Deep (occurring at different levels of complexity).

c. STEM - This recognizes that the program is not just focused on science, but all of STEM.

d. Learning - This term is more appropriate than "education" based on what we know on how people learn. Also, "learning" is more connected with what people do for themselves, compared to "education" which is perceived as something that is done to them.

The Connecting Researchers and Public Audiences (CRPA) is no longer a program type, but individuals that wish to explore how to better engage the public or professional audiences with the results and societal implications of current STEM research are encouraged to consider applying under other project types.

The program encourages research components in all program types and allows for up to an additional $500,000 in funding requests in Full Scale and Broader Implementation proposals that specifically included a research component.

Specific Review Criteria for AISL Proposals are included in Section VI.A

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Advancing Informal STEM Learning (AISL)

Synopsis of Program:

The **Advancing Informal STEM Learning** program invests in research and development of innovative and field-advancing out-of-school STEM learning and emerging STEM learning environments.

The name of the program has changed from Informal Science Education (ISE) to Advancing Informal STEM Learning (AISL). AISL better emphasizes the priorities of the solicitation and the changes at NSF:

a. Advancing - This emphasizes that AISL seeks innovative projects that advance the field and that requests need to go beyond just proposing a new exhibit, program or film.

b. Informal - This continues to emphasize that the program is interested in out-of-school learning that makes learning Lifelong, Life Wide (occurring across multiple venues) and Life Deep (occurring at different levels of complexity).

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The Connecting Researchers and Public Audiences (CRPA) is no longer a program type, but individuals that wish to explore how to better engage the public or professional audiences with the results and societal implications of current STEM research are encouraged to consider applying under other project types.

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: DRLAISL@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: 34

Including approximately 6 Research, 6 Pathways, 13 Full-Scale Development, 2 Broad Implementation, plus approximately 7 conference, EAGER, and Rapid awards

Anticipated Funding Amount: $20,000,000 in FY 2013 for new awards, 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:

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 14, 2012

  We strongly suggest that PIs new to the field and PIs with new concepts submit preliminary proposals.

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

  January 14, 2013

  Due by 5 p.m. proposer's local time:

Proposal Review Information Criteria

Merit Review Criteria: National Science Board approved criteria. Additional merit review considerations apply. Please see the full text of this solicitation for further information.

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

According to the Report to the President, Prepare and Inspire: K-12 Education in Science, Technology, Engineering, and Math

(STEM) for America's Future (President's Council of Advisors on Science and Technology, 2010), successful science, technology, engineering, and mathematics (STEM) education in both school-based and out-of-school settings combined, will determine whether the United States will remain a leader among nations and be in a position to solve an array of immense and rapidly emerging national challenges in science and technology. To evolve a citizenry highly informed, knowledgeable and engaged in the fundamental areas of STEM needed to compete in a global and technological marketplace and make informed decisions, it is imperative that the entire U.S. education enterprise invests in opportunities to advance the future of learning situated in and out of school.

In Learning Science In Informal Environments: People, Places, and Pursuits (National Research Council, 2009), it was concluded that learning experiences across informal environments positively influence science learning in school, attitudes toward science, pursuit of science-related occupations, and engagement in lifelong science learning. Efforts to bridge education research and development, both formal and informal with the scientific, engineering, and mathematical disciplines, are core to the National Science Foundation. Such efforts can provide the seeds of innovation for the future of learning by leveraging insights on learning taking place across all learning contexts.

II. PROGRAM DESCRIPTION

The **Advancing Informal STEM Learning** (AISL) solicitation invites investigators to propose ideas, concepts, models, and other opportunities for learning and learning environments that will capture the creative and innovative potential of informal STEM learning for the future, and potentially forge new connections across all STEM learning communities. Leveraging new and emerging technologies, STEM learning can now be located and situated wherever the learner is and customized to meet the learner's educational needs. New interdisciplinary collaborations and partnerships for informal learning among academia, industry, and government can greatly advance our nation's goals to produce a scientifically and technologically literate population and workforce.

The AISL program supports the following research and/or development on learning and learning environments for the future, including, but not limited to:

Learning:

- Expand access to the highest quality STEM resources for all Americans, regardless of geographic location, age, gender, affluence, or academic background and advance out of school participation of Historically Black Colleges and Universities, Hispanic Serving Institutions, and Tribal Colleges;
- Contribute new research and/or development to the knowledge base, models and/or learning strategies that advance informal learning;
- Explore and better understand the models that integrate a variety of learning platforms for targeted audiences and communities.
- Engage the public in novel, real-time, and simulated experiences with scientific phenomena and participation in the collection of scientific data where such data can contribute to scientific discoveries once reserved only for science researchers;
- Create pedagogical links between informal learning and school-based learning that advances more seamless and personalized STEM-learning across settings and that can transcend the time constraints and physical boundaries of traditional education;
- Build capacity of STEM informal education professionals, volunteers, parents, and caregivers, and those who facilitate the learning of others.

Learning environments:

- Advance meaningful STEM engagement through exhibits, programs, and other experiences at science centers, museums, zoos, aquariums, youth and community centers, and many other informal and out-of-school settings;
- Advance the design and development of environments for learning *anytime, anywhere,* leveraging advances made in adaptive and assistive technologies, virtual and augmented reality, games, visualizations, simulations, mobile phones and computers, and global online social networks;
- Advance science communication to the public via the Internet, broadcast media, podcasting, online scientific databases, and emerging global social learning networks that engage the public, evolve new partnerships, and reach broader audiences;

A. Program Priorities

Principal Investigators **must** consider ways their project can address the following program priorities:

Advancing the Field: Articulate how the proposed project advances the field of informal STEM learning, describing key issues, hypotheses, opportunities, and/or challenges to which the proposed work is responsive. Proposals must discuss how the project is situated within the larger STEM education landscape, such as responding to an issue of national importance, or how the proposed work addresses a specific critical issue (e.g. reduces gaps in research). Investigators must show a thorough understanding of the current knowledge base in their area or practice, familiarity with prior work in the field related to project goals, and discuss how proposed research or development builds on and extends prior work in the field. Some potential leverage points to advancing the field are *capacity building* (increasing the STEM and education expertise of informal science education professionals, volunteers, parents and caregivers, and all those with potential to facilitate the learning of others); *diversifying the profession*; and *supporting dissemination and broader use* of existing research, evaluation, and best practices.

Innovation at the Frontier of Informal Learning: Articulate how proposed work is informed by, or based upon, prior work in the field of interest and how the work will demonstrate innovation. Areas of proposed Innovation can include entirely new work, or incremental innovation on prior work in the field.

Broadening Participation: Projects must seek to provide greater access to STEM-learning opportunities for underserved audiences, such as racial and ethnic minorities, women and girls, those with disabilities or learning differences. The program is also interested in serving underserved geographic regions, economically challenged communities, as well as provide emerging opportunities to expand participation in STEM, such as for returning Veterans.

Collaborations: To stimulate innovative thinking, diversity of perspectives, and culturally inclusive learning, it is expected that projects will involve the participation of relevant collaborative partners. Investigators should seek to extend their project's impact by leveraging local and national resources, cultural groups, and carefully chosen partners and advisory personnel to achieve more significant outcomes than would otherwise be possible. Investigators must discuss the potential challenges of effective collaboration with respect to their project and propose a means for addressing them. It is recommended that collaborators be involved in the development of the proposal.

The STEM content: AISL proposals may address any area supported by the National Science Foundation. AISL encourages proposals that contribute to any major NSF initiative in the sciences and important intersections of STEM disciplines, such as science and art. (Please see other funding opportunities in this solicitation.)

B. AISL Project Types

Investigators may apply for funding under the following project types:

1. Research

Projects can be funded for up to $1.5 million total and up to five years in duration.

AISL supports basic and applied research on informal STEM learning. Basic research will advance the theoretical and empirical foundations of effective STEM learning and its assessment. Basic research projects may be theoretical or empirical in nature, involving methodological advances, syntheses of research, and the use of large databases and/or aggregated data across multiple or distributed settings. Projects may include the creation of entirely new assessment tools, resources, applications, media, programs, and/or environments necessary to answer questions or test hypotheses. Applied research that includes development, must emphasize connections to the practice of informal science education, involve informal organizations and practitioners as active partners, and indicate how proposed studies and development products will contribute to the advancement of the informal STEM learning infrastructure and support effective learning and engagement with content-related activities *anywhere* and *at any time*. Applied research projects may demonstrate how proposed content can be correlated with STEM-related curricula in schools, universities, and other educational settings.

2. Pathways

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

Investigators may propose planning activities, pilot studies, feasibility studies, or development work that has the potential to lead to the submission of other project types. Activities should be more highly developed than that of planning work for other project types. The final deliverable should result in significant findings that can inform future work in the field or innovation in the proposed area of work. Proposals that explore how to better engage the public or professional audiences with the results and societal implications of current STEM research are encouraged.

3. Full-Scale Development

Projects can be funded for up to $2.5 million and up to five years in duration, with the possibility of receiving up to an additional $500,000 if the project includes a research component.

Projects must include an innovative, field advancing concept or suggested model for any area of informal STEM learning or proposed learning environment(s) and articulate a plan and process for the design, development, full implementation, and evaluation of the proposed work. An explicit conceptual framework or theory of action must guide projects resulting in the development of learning resources, programs, or activities. Rigorous evaluation appropriate to the project must be a part of the knowledge-building work.

Research components, while not required, may be included as part of a full-scale project and can request up to an additional $500,000 in funding. Any research component must meet the criteria under Research Type proposals identified in Section II.C.1.

4. Broad Implementation

Projects can be funded for up to $2.5 million and up to five years in duration, with the possibility of receiving up to an additional $500,000 if the project includes a research component

Projects are expected to substantially **broaden the reach of proven products or programs** within the informal science education field. This project type must include a demonstrated record of success, such as substantive evidence from summative evaluations or efficacy studies either with specific populations or in specific settings, or data determining readiness for distribution to a broader population or new setting(s). Projects may address innovative integration, incremental improvements, or adaptations, and must discuss how evidence will be collected to show broad implementation and impact. Expanded project reach may include, but is not limited to, geography, age, socio-economic status, cultural/linguistic group, gender, or learning setting. Investigators may emphasize any underrepresented group as target audience.

Research components, while not required, may be included as part of a broad implementation project and can request up to an additional $500,000 in funding. Any research component must meet the criteria under Research Type proposals identified in Section II.C.1.

5. Conferences, Symposia, and Workshops (see GPG, II.D.8.)

Projects should follow the same proposal format as other project types. The program is particularly interested in proposals that include the formulation of research agendas for the participating professional communities and/or the development of communities of practice.

6. Grant Supplements for existing awards, **Early-concept Grants for Exploratory Research (EAGERs);** grants for **Rapid Response Research (RAPIDs)** (see GPG II.D.1 and D.2)

Note: For proposal types 5 and 6, the funding competition is ongoing. Only full proposals are accepted and can be submitted at any time. **See Section V** for proposal format and submission information.

C. Other Funding Opportunities

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

Faculty Early Career Development (CAREER) grants **http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503214**

Virtual Organizations as Sociotechnical Systems (VOSS) **http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503256**

D. Resources and References

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: **http://www.caise.insci.org/**

In addition, 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) -- **http://www.nap.edu/catalog.php?record_id=12190**
- *Surrounded by Science* (National Research Council, 2009) -- **http://www.nap.edu/catalog.php?record_id=12614**
- *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) -- **http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast-stem-ed-final.pdf**
- *Preparing the Next Generation of STEM Innovators* (National Science Board, 2010) -- http://www.nsf.gov/nsb/publications/pub_summ.jsp?ods_key=nsb1033. These reports highlight effective strategies for integrating informal science education projects with the broader goals of K-12 STEM education.

Other Resources

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 and new AISL 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: Resources compiled by The Coalition for Science After School.

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

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

http://www.nsdl.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://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.

Bibliography

American Statistical Association (2007). Using statistics effectively in mathematics education research. **http://www.amstat.org/education/pdfs/UsingStatisticsEffectivelyInMathEdResearch.pdf**

National Research Council (2009). Learning science in informal environments: People, places, and pursuits. Washington, D. C.: The National Academies Press. **http://www.nap.edu/catalog.php?record_id=12190**

National Research Council (2009). Surrounded by Science. Washington, D. C.: The National Academies Press. **http://www.nap.edu/catalog.php?record_id=12614**

National Science Board (2010). NSB Report: Preparing the Next Generation of STEM Innovators. **http://www.nsf.gov/nsb/publications/pub_summ.jsp?ods_key=nsb1033**

National Science Foundation (2011). Empowering the Nation Through Discovery and Innovation - NSF Strategic Plan for Fiscal Years (FY) 2011-2016. **http://www.nsf.gov/news/strategicplan/**

National Science Foundation (2005). The mathematics education portfolio brief, (NSF 05-03). **http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf0503**

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.

III. AWARD INFORMATION

The ISE program expects to make approximately 34 awards based on anticipated funding of $20 million in FY 2013 for new awards. It is anticipated that approximately 6 Research, 6 Pathways, 13 Full-Scale Development, 2 Broad Implementation, plus approximately 7 conferences, EAGERS, and Rapids will be made as Standard or Continuing Grants, pending availability of funds.

Duration and Funding Levels:

Research: Project duration from one to five years. The maximum award is $1,500,000.

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. The maximum award is $3,000,000 if a research

component is included.

Broad Implementation: Project duration may be from one to five years. The maximum award is $3,000,000 if a research component is included.

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:

None Specified

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Preliminary Proposals*(optional):*

Preliminary proposals are **optional for all AISL project types except for the following that do not require or accept preliminary proposals: Conference, EAGER, RAPID, and CREATIV proposals.** *For AISL project types that accept preliminary proposals, new applicants and PIs with new project concepts 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 the proposal will be competitive; however, the assessment is advisory and intended to provide feedback to strengthen proposals for full submission. Full proposals may be submitted whether an 'encourage' or 'discourage' rating is received.

Preliminary Proposal Format Guidelines: Submission of a preliminary proposal requires completion of the following forms in FastLane. No additional NSF forms are required.

1. Cover Sheet. Cover Sheet must include the solicitation number and the Preliminary Proposal box must be checked. The project title must begin by identifying the project type: Research; Pathways; Full-Scale Development; or Broad Implementation.

2. Project Summary. The Summary is limited to one single-spaced page. The summary is a critical proposal element that must succinctly make the project clear to reviewers and must identify the project's *Intellectual Merit* and *Broader Impacts* in two separate sections under the 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 is a condensed version of the Project Description. **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 and must identify the essential features of the project using the same category headings required for full proposals.

4. Budget (including Justification). Provide a one-page budget summary for the entire grant period. This should be entered in Budget Year 1 in FastLane. (FastLane will automatically generate a *cumulative budget* identical to the multi-year budget you entered in Year 1.)

5. Supplementary Documents. Supplementary documents are **NOT** 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.

Important Proposal Preparation Information: FastLane will check for required sections of the proposal, in accordance with *Grant Proposal Guide* (GPG) instructions described in Chapter II.C.2. The GPG requires submission of: Project Summary; Project Description; References Cited; Biographical Sketch(es); Budget; Budget Justification; Current and Pending Support; Facilities, Equipment & Other Resources; Data Management Plan; and Postdoctoral Mentoring Plan, if applicable. If a required section is missing, **FastLane will not accept the proposal.**

Please note that the proposal preparation instructions provided in this program solicitation may deviate from the GPG instructions. If the solicitation instructions do not require a GPG-required section to be included in the proposal, insert text or upload a document in that section of the proposal that states, "Not Applicable for this Program Solicitation." Doing so will enable FastLane to accept your proposal.

Full 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. (Grants.gov Users: The program solicitation number will be pre-populated by Grants.gov on the NSF Grant Application Cover Page.) 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; Pathways; Full-Scale Development; Broad Implementation; conference, EAGER, etc. Proposers should refer to the NSF Grant Proposal Guide for information related to human subjects' research.

2. Project Summary. Each proposal must contain a summary of the proposed project not more than one page in length. The Project Summary consists of an overview, a statement on the intellectual merit of the proposed activity, and a statement on the broader impacts of the proposed activity. The first sentence of the overview must identify the AISL project type: **Research; Pathways; Full-Scale Development; Broad Implementation; Workshop; Conference; or an EAGER, RAPID, or CREATIV** proposal.

Please note that as part of NSF's effort to implement automated compliance checking in FastLane, the project summary section will now include three text boxes (overview, intellectual merit, broader impacts) and information must be entered into all three text boxes or the proposal will not be accepted by FastLane.

The overview includes a description of the activity that would result if the proposal were funded and a statement of objectives and methods to be employed. The statement on intellectual merit should describe the potential of the proposed activity to advance knowledge. The statement on broader impacts should describe the potential of the proposed activity to benefit society and contribute to the achievement of specific, desired societal outcomes. The Project Summary should be written in the third person, informative to other persons working in the same or related fields, and, insofar as possible, understandable to a scientifically or technically literate lay reader. It should not be an abstract of the proposal.

Proposals that do not contain the Project Summary, including an overview and separate statements on intellectual merit and broader impacts will not be accepted by FastLane or will be returned without review. Additional instructions for preparation of the Project Summary are available in FastLane.

3. Project Description (Narrative)

In addition to the requirements outlined in the GPG and this solicitation, the Project Description must identify the Project Type in the first line. The narrative is limited to 15 single-spaced pages and should include the following information in sections A through D:

A. Project Rationale:

- Describe primary project goals, hypotheses, or research questions, and if applicable, characterize the model that is being proposed.
- Identify your audience(s) for the work and the appropriate strategy or approach for reaching that audience.
- Identify the STEM content area(s). STEM content may be drawn from any research area supported by NSF and should be discussed in sufficient depth to provide a clear understanding of concepts, topics, processes, and associated skills that are conveyed to the target audience. Topics should be relevant to proposed target audience age levels.
- Explain how the proposed project builds on pertinent literature, prior practice, or research and cite references to the literature in informal learning and prior work that supports the proposed strategies, approaches and evaluation.
- Discuss how the project is innovative and 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.

B. Project Design:

- Describe deliverables and intended learning outcomes, plus the impacts on the target public and/or professional audience and on the field.
- For research type proposals or research components in other project types, describe the deliverables and intended research outcomes, including the impacts the outcomes will have on advancing the knowledge base of the informal science education field.
- Describe how the project encourages the broader participation in STEM experiences by underrepresented populations.
- 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.

Provide information on collaborations with research scientists, learning researchers, and graduate and undergraduate students, who are strongly encouraged to act as content specialists, co-designers of materials, advisors, or presenters that engage directly with public audiences.
- Address the relevance of STEM learning and project design to proposed target audiences and age levels.

C. Project Management:

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

D. 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.
- **Evaluation design:** Evaluation questions, design, data collection methods, analyses, and reporting/dissemination strategies must be detailed in the evaluation plan, including formative and summative evaluation goals and strategies that seek to answer the evaluation questions. The evaluation design must emphasize the coherence between the proposal goals and evidence of meeting such goals, and must be appropriate to the type, scope, and scale of the proposed project. Logic models or theories of action, as an example, can help describe the project inputs, outputs, outcomes and impacts. All project types must include a summative evaluation by an external evaluator. **NOTE:** details of the evaluation plan may be included as a Supplementary Document.
- **Institutional Review Board (IRB) Process:** 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).

Please note that per guidance in the GPG, the Project Description must contain, as a separate section within the narrative, a discussion of the broader impacts of the proposed activities. You can decide where to include this section within the Project Description.

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 or Grants.gov budget line item. Requested equipment must be essential components of project deliverables. If personnel expenses are entered for postdoctoral scholars (section B of the budget), 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 (FastLane) or Field F.5 (Grants.gov) 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

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.

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

The following are required Supplementary documents:

Postdoctoral Researcher Mentoring Plan. 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).

Data Management Plan. 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

- **Allowable Additional Supplementary Documents: Letters of commitment** from consultants, advisors, distributors, and organizational partners indicating their roles in the project.
- **Summaries of formative and summative evaluation** findings of prior work (2 pg maximum in total).
- **Details of the evaluation plan** for the proposed work (5 pg maximum), plus impacts and indicators worksheets, and summary logic models, as appropriate.
- **Biosketches** of key personnel in the project.
- **PIs may submit an additional 30 pgs maximum** in the Supplementary Documents section in addition to the four

bulleted items listed above to provide a limited amount of additional supporting information:

- **Deliverables that involve media or technology that cannot solely 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: Advancing Informal STEM Learning, 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.

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 14, 2012

  We strongly suggest that PIs new to the field and PIs with new concepts submit preliminary proposals.

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

  January 14, 2013

  Due by 5 p.m. proposer's local time:

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 for acknowledgement and, if they meet NSF requirements, for review. All proposals are carefully reviewed by a scientist, engineer, or educator serving as an NSF Program Officer, and usually by three to ten other persons outside NSF either as *ad hoc* reviewers, panelists, or both, who are experts in the particular fields represented by the proposal. These reviewers are selected by Program Officers charged with 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. In addition, Program Officers may obtain comments from site visits before recommending final action on proposals. Senior NSF staff further review recommendations for awards. A flowchart that depicts the entire NSF proposal and award process (and associated timeline) is included in the GPG as Exhibit III-1.

A comprehensive description of the Foundation's merit review process is available on the NSF website at:

http://nsf.gov/bfa/dias/policy/merit_review/.

Proposers should also be aware of core strategies that are essential to the fulfillment of NSF's mission, as articulated in *Empowering the Nation Through Discovery and Innovation: NSF Strategic Plan for Fiscal Years (FY) 2011-2016*. These strategies are integrated in the program planning and implementation process, of which proposal review is one part. NSF's mission is particularly well-implemented through the integration of research and education and broadening participation in NSF programs, projects, and activities.

One of the core strategies in support of NSF's mission 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 variety of learning perspectives.

Another core strategy in support of NSF's mission is broadening opportunities and expanding participation of groups, institutions, and geographic regions that are underrepresented in STEM disciplines, which 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.

A. Merit Review Principles and Criteria

The National Science Foundation strives to invest in a robust and diverse portfolio of projects that creates new knowledge and enables breakthroughs in understanding across all areas of science and engineering research and education. To identify which projects to support, NSF relies on a merit review process that incorporates consideration of both the technical aspects of a proposed project and its potential to contribute more broadly to advancing NSF's mission "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes." NSF makes every effort to conduct a fair, competitive, transparent merit review process for the selection of projects.

1. Merit Review Principles

These principles are to be given due diligence by PIs and organizations when preparing proposals and managing projects, by reviewers when reading and evaluating proposals, and by NSF program staff when determining whether or not to recommend proposals for funding and while overseeing awards. Given that NSF is the primary federal agency charged with nurturing and supporting excellence in basic research and education, the following three principles apply:

- All NSF projects should be of the highest quality and have the potential to advance, if not transform, the frontiers of knowledge.
- NSF projects, in the aggregate, should contribute more broadly to achieving societal goals. These "Broader Impacts" may be accomplished through the research itself, through activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. The project activities may be based on previously established and/or innovative methods and approaches, but in either case must be well justified.
- Meaningful assessment and evaluation of NSF funded projects should be based on appropriate metrics, keeping in mind the likely correlation between the effect of broader impacts and the resources provided to implement projects. If the size of the activity is limited, evaluation of that activity in isolation is not likely to be meaningful. Thus, assessing the effectiveness of these activities may best be done at a higher, more aggregated, level than the individual project.

With respect to the third principle, even if assessment of Broader Impacts outcomes for particular projects is done at an aggregated level, PIs are expected to be accountable for carrying out the activities described in the funded project. Thus, individual projects should include clearly stated goals, specific descriptions of the activities that the PI intends to do, and a plan in place to document the outputs of those activities.

These three merit review principles provide the basis for the merit review criteria, as well as a context within which the users of the criteria can better understand their intent.

2. Merit Review Criteria

All NSF proposals are evaluated through use of the two National Science Board approved merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two merit review criteria are listed below. **Both** criteria are to be given **full consideration** during the review and decision-making processes; each criterion is necessary but neither, by itself, is sufficient. Therefore, proposers must fully address both criteria. (GPG Chapter II.C.2.d.i. contains additional information for use by proposers in development of the Project Description section of the proposal.) Reviewers are strongly encouraged to review the criteria, including GPG Chapter II.C.2.d.i., prior to the review of a proposal.

When evaluating NSF proposals, reviewers will be asked to consider what the proposers want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. These issues apply both to the technical aspects of the proposal and the way in which the project may make broader contributions. To that end, reviewers will be asked to evaluate all proposals against two criteria:

- **Intellectual Merit:** The Intellectual Merit criterion encompasses the potential to advance knowledge; and
- **Broader Impacts:** The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.

The following elements should be considered in the review for both criteria:

1. What is the potential for the proposed activity to
    a. Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
    b. Benefit society or advance desired societal outcomes (Broader Impacts)?
2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
4. How well qualified is the individual, team, or organization to conduct the proposed activities?
5. Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?

Broader impacts may be accomplished through the research itself, through the activities that are directly related to specific research

projects, or through activities that are supported by, but are complementary to, the project. NSF values the advancement of scientific knowledge and activities that contribute to achievement of societally relevant outcomes. Such outcomes include, but are not limited to: full participation of women, persons with disabilities, and underrepresented minorities in science, technology, engineering, and mathematics (STEM); improved STEM education and educator development at any level; increased public scientific literacy and public engagement with science and technology; improved well-being of individuals in society; development of a diverse, globally competitive STEM workforce; increased partnerships between academia, industry, and others; improved national security; increased economic competitiveness of the United States; and enhanced infrastructure for research and education.

Proposers are reminded that reviewers will also be asked to review the Data Management Plan and the Postdoctoral Researcher Mentoring Plan, as appropriate.

Additional Solicitation Specific Review Criteria

1. How well does the project make a compelling case that the project is innovative and will advance the knowledge, practice, capacity or other critical aspects of informal STEM learning?

2. How well does the project seek to extend access to STEM-learning opportunities to underserved audiences?

3. How well does the project leverage local and national resources, cultural groups, and carefully chosen partners and advisory personnel to achieve more significant outcomes than would otherwise be possible?

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 prior to the end of the current budget period. (Some programs or awards require submission of more frequent project reports). Within 90 days following 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 all identified PIs and co-PIs on a given award. 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 Research.gov, for preparation and submission of annual and final project reports. Such reports provide information on accomplishments, project participants (individual and organizational), publications, and other specific products and impacts of the project. Submission of the report via Research.gov constitutes certification by the PI that the contents of the report are accurate and complete. The project outcomes report also 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.

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 AISL) as part of submission of the Final Report and (2) provide project data via the AISL program online project management system. PIs may be requested to provide additional project data for AISL 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: DRLAISL@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 DRLAISL@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, "My NSF" is an information-delivery system designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF Grants Conferences. Subscribers are informed through e-mail or the user's Web browser each time new publications are issued that match their identified interests. "My NSF" also is available on NSF's website at http://www.nsf.gov/mynsf/.

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

ABOUT THE NATIONAL SCIENCE FOUNDATION

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

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

NSF receives approximately 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
Reports Clearance Officer
Division of Administrative Services
National Science Foundation
Arlington, VA 22230