Informal Science Education (ISE)

Program Solicitation

NSF 05-544
***Replaces Document* NSF 04-579**

National Science Foundation
Directorate for Education and Human Resources
Division of Elementary, Secondary and Informal Education

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

March 18, 2005

for Project Grants only

September 16, 2005

for Project Grants only

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

June 13, 2005

for Project Grants only

December 05, 2005

for Project Grants only

Planning Grants and Conference, Symposia, and Workshop Grants: Proposals for these grants may be submitted at any time, following discussion with a Program Officer. These types of projects do not require Preliminary Proposals.

Grant Supplements for existing ISE Awards: Requests must be submitted at least two months prior to the need for additional funds, following discussion with the Cognizant Program Officer.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Informal Science Education (ISE)

Synopsis of Program:

Program Overview

The ISE program invests in projects that develop and implement informal learning experiences designed to increase interest, engagement, and understanding of science, technology, engineering, and mathematics (STEM) by individuals of all ages and backgrounds, as well as projects that advance the theory and practice of informal science education. Projects may target either public audiences or professionals whose work directly affects informal STEM learning. ISE projects are expected to demonstrate strategic impact, collaboration, and innovation.

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

- 47.076 --- Education and Human Resources

Eligibility Information

- **Organization Limit:**

  Only U.S. organizations located in the U.S. may apply.

- **PI Eligibility Limit:**

  An individual may serve as Principal Investigator (PI) on only one Preliminary Proposal and Full Proposal in each round of competition.

- **Limit on Number of Proposals:** An organization may serve as lead on up to three Preliminary Proposals and on three Full Proposals in each round of competition for Project Grants.

Award Information

- **Anticipated Type of Award:** Standard or Continuing Grant
- **Estimated Number of Awards:** 50

- **Anticipated Funding Amount:** $25 million, pending availability of funds. See Section IV.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Preliminary Proposals:** Submission of Preliminary Proposals is required. Please see the full text of this solicitation for further information.
- **Full Proposal Preparation Instructions:** This solicitation contains information that supplements the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full text of this solicitation for further information.

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required by NSF.
- **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 Proposals *(required)* :**
  March 18, 2005
  for Project Grants only
  September 16, 2005
  for Project Grants only
- **Full Proposal Deadline Date(s)** (due by 5 p.m. proposer's local time):
  June 13, 2005
  for Project Grants only
  December 05, 2005
  for Project Grants only

Proposal Review Information

- **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

Informal learning happens throughout people's lives in a highly personalized manner based on their particular needs, interests, and past experiences. This type of multi-faceted learning is voluntary, self-directed, and often mediated within a social context (Crane *et al.,* 1994; Falk, 2001, Dierking *et al*., 2004); it provides an experiential base and motivation for further activity and subsequent learning. The Informal Science Education (ISE) program invests in the development of experiences that encourage informal learning in science, technology, engineering, and mathematics (STEM). It promotes public engagement with and understanding of STEM through such means as exhibitions, media projects, and educational programs. ISE projects reach audiences of all ages and backgrounds across the nation in museums, theaters, community centers, and many other settings, including outdoor environments and their homes.

The ISE program seeks to support activities at the frontiers of informal science learning that will advance the state-of-the-art by furthering a cycle of advancing knowledge and improving practice (Rand Mathematics Study Panel, 2003). Effective practice, whether implemented through an exhibition, program, or other means, should be based to the greatest extent possible on prior related work and current research in learning. Evaluation of these practices leads to findings that provide insights and questions for research. Subsequent research generates new knowledge that in turn will inform the development of improved informal learning experiences. By funding projects along this cycle, the ISE program can strengthen the connection between research and practice and thereby enhance the capacity of the field to educate the public in informal settings.

The ISE program invests in projects that directly target public audiences for self-directed STEM learning, such as permanent and traveling exhibitions; films; television and radio series; web-based projects; citizen science programs; and youth and community programs. In addition, ISE supports projects that target professionals to further knowledge and the implementation of practice, such as through research studies, conferences, formation of networks, and professional development; these projects should strengthen the infrastructure for informal science learning by the public. (Note that this program does ***NOT*** fund operational or capital expenses, purchase of equipment or vehicles, school field trips, camps, science fairs or competitions, or projects whose primary focus is health or medicine.)

To achieve the greatest return on its investments, the ISE program encourages projects that will "raise the bar" in the field of informal science education. Thus, in making funding decisions, the program will place particular emphasis on the ability of projects to demonstrate the characteristics of strategic impact, innovation, and collaboration.

a. ***Strategic Impact****:* Seek to advance the knowledge or practice of informal science education through approaches, strategies, findings, or models that advance the ISE field. **This broader impact must go beyond any project impact on target audiences.** By identifying and influencing a leverage point for moving the field forward in a meaningful way, a project can extend impact beyond the lifetime of the grant or the project deliverables. Note that strategic impact can be achieved by organizations regardless of their size or the population of the communities that they serve.

   The following are examples of ways in which projects might achieve strategic impact by creatively addressing issues critical for the field, as well as potentially demonstrating innovation and collaboration. (This list is intended to be illustrative; it is not in a priority order, nor are proposed projects limited to these areas.)

- Sustaining informal learning experiences and encouraging subsequent learning that go beyond one-time or a limited set of activities.
- Creating programs that help museums and other informal learning organizations become truly engaged with and integral to their diverse communities.
- Building collaborations that integrate resources and expertise among informal learning organizations and across different modes of informal learning.
- Developing new formats and innovative approaches to existing formats such as exhibits and media; developing innovative informal educational applications that take advantage of unique capabilities of the Internet.
- Creating new models by which informal learning organizations can take advantage of university-based research expertise in STEM areas and learning, while helping researchers achieve broader impacts.
- Proposing improved models and new research areas based on empirical evidence that contribute to the understanding of informal STEM learning.
- Designing applied research projects that address key issues for practitioners, such as what practices are most effective in designing and implementing experiences that promote STEM learning.
- Designing evaluation projects that assess what measures best capture the impacts offered by different forms of informal learning experiences.
- Building on the social interaction that naturally occurs as part of the context of most informal learning experiences.
- Engaging underserved audiences in culturally-responsive ways that significantly increase the numbers impacted by informal science learning.
- Harnessing the rapidly growing population of older adults many of whom will be seeking opportunities for informal learning and for community engagement.
- Reaching very young children in ways that build upon increased knowledge of brain development and early childhood education.
- Finding more effective ways to disseminate knowledge of the state-of-the-art in ISE as a base from which the field can build.

b. ***Innovation****:* "Push the envelope" through creative new ways to strengthen informal science education. In a manner similar to NSF programs that fund the frontiers of STEM research, ISE seeks to fund **projects at the frontiers of informal science education that will advance the state-of-the-art**.

   Innovation applied to critical ISE issues, as in the examples given, provides a means by which projects can achieve strategic impact. Projects also can demonstrate innovation in many other ways, including new types or combinations of deliverables, improvements in deliverables, or their deployment in new ways. The project as a whole may be innovative, or it may demonstrate innovation in key elements that are integral to achieving its intended impacts. Innovation is more than just something new, however. It should represent a creative approach or solution for improving a deliverable or other ways that clearly build upon the lessons learned from prior efforts and upon the results of educational research. Innovation often carries risk, and the PI must be able to demonstrate an understanding of possible risks and how to manage them.

c. ***Collaboration****:* Leverage the resources of partners to achieve more significant outcomes than would otherwise be possible. Organizations should seek to extend project impacts by taking advantage of the synergies generated by the competencies of carefully chosen partners.

   Partnerships and alliances can be challenging to implement, but they often make it possible to achieve much greater impact. Organizational partners can bring complementary resources and expertise that significantly expand the capacity of the project team, as well as provide access to new and nontraditional audiences. In either case, the partners should be selected strategically based on their ability to attain and extend intended project outcomes; they should collaborate in the development of the proposed project. Collaboration can play another valuable role by building capacity within the participating organizations. PIs must demonstrate an understanding of the challenges of collaboration and propose means for addressing them.

   Through funding projects that demonstrate strategic impact, innovation, and collaboration, the ISE program can invest its resources in activities that most effectively further the engagement and understanding of STEM by all Americans, as well as the institutions and organizations that serve them.

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II. PROGRAM DESCRIPTION

A. **ISE Project Grants**

Project Grants (Full Proposals) are the primary means in which the ISE program invests in projects that develop and implement informal learning experiences for the general public. These projects have as their primary audience informal learners, from young children to senior citizens. The program also supports projects that enhance the infrastructure of informal science education. Therefore, the ISE program targets the following two types of audiences:

1. **Public Audiences**: For self-directed learning in informal settings.

   Projects should seek national, significant regional, or community-wide reach, depending on the methods used. They should create and sustain audience engagement through effective ISE techniques. Proposed projects should be grounded in research on learning as well as practice, building on the prior work, experience, and findings of others.

   Proposals in this category must meet the following requirements:

   Audience: The *primary* target audience must be informal learners, which may include families; children and youth; and adults. In contrast with formal learning, informal learning refers to those activities that are *not* primarily for school use, home schooling or part of an ongoing school curriculum, or require mandatory participation in a credited school activity. Projects are encouraged to create linkages with formal education if appropriate, but students and teachers may be included only as *secondary* audiences for the ISE program.

   Method: The proposed activities must be based on voluntary, self-directed learning by the primary target audience. Project deliverables include--but are not limited to--exhibitions, media of all types, and educational programs. Summer/holiday camps, school field trips, science fairs, and competitions are *not* funded through this program.

   Location: Project activities may be carried out in any location that reaches the intended target audience outside of formal education settings. Examples include museums (e.g., science centers, natural history museums, zoos, aquariums, planetariums, arboretums or botanical gardens, history or art museums); community centers; libraries; theaters, and the home.

   Content: The content of proposed projects must be based on one or more of the STEM research fields supported by NSF. They include: astronomy, atmospheric science, biological sciences, behavioral sciences, chemistry, computer science, earth sciences, engineering, information sciences, materials research, mathematical sciences, oceanography, physics, and social sciences. ISE does not fund projects whose primary focus is health or medical education.

2. **Professional Audiences**: For enhancement of informal STEM learning, knowledge, infrastructure, or systems.

   ISE seeks innovative projects that address issues central to improving understanding of the principles and implementation of the practice of informal science education. Projects that target professionals might involve research and development in informal science learning; formation of collaboratives, consortia, or networks that bring institutions together; field-wide professional development; or other strategies for strengthening the ISE infrastructure. Courses, with or without credit, are *not* funded by this program.

   Proposals in this category must meet the following requirements:

   Organization or Institution: Projects may impact organizations or institutions, such as national or regional associations; museums (e.g., science center, natural history museum, zoo, aquarium, planetarium, arboretum or botanical garden); community organizations; television and radio stations or networks, or others that directly affect informal STEM learning.

   Audience: Targeted individuals may include: staff, managers, board members, researchers, evaluators, funders, media producers or disseminators, exhibit designers, or other

professionals *whose work directly impacts informal science education*.

Format: See Proposal Preparation and Submission Instructions (V.A.) for specific information.

For All Proposals:

If the scope and estimated cost of the overall project are more extensive than NSF is able to fund under this solicitation, the proposal must include the following information:

- Description of the overall project.
- Detailed description of the scope to be funded by NSF.
- Estimated cost of the overall project, including anticipated sources and amounts of funding other than NSF. The anticipated sources of funding should be identified.
- Detailed budget justification for the scope to be funded by NSF.

Even though cost sharing is no longer required by NSF, reviewers will need this information in order to assess the viability of the overall project as well as the scope and budget to be funded by NSF.

B. **Other Types of ISE Grant Proposals**

ISE also makes a limited number of grants in the following special categories.

1. **Planning Grants**

Planning grants are intended for the exploratory phase of highly innovative projects or aspects of complex ISE projects that require resources beyond those usually needed for project development. Proposers are strongly encouraged to talk with an ISE Program Officer before submitting a planning proposal.

Proposers should be sufficiently advanced in their project conceptualization to be able to present a developed outline, including the suggested approach of the final project and a clear description of the planning activity's outcomes and methods. Planning grants can be used for any type of informal science education activity such as an exhibition, museum activity, media project, community program, or web-based project that would be appropriate for ISE funding based on this solicitation. Examples include demonstration of the proof of concept or a focused planning effort for a large national or regional collaboration. Planning grants can be submitted at any time following discussion with a Program Officer.

Awards provide up to $75,000 total for up to two years. The award of a planning grant does not in any way obligate NSF or ISE to fund in whole or in part the final project. Submission of a planning grant proposal and submission of a project grant proposal for implementation are independent processes.

Format: See Proposal Preparation and Submission Instructions (V.A.) for specific information.

2. **Conference, Symposia, and Workshop Grants**

Conferences, symposia, and workshops provide a specific format for certain projects targeting professionals. Conferences are one way that ISE can provide support to build capacity in the field of informal science learning. These special grants are intended to assemble experts for purposes of discussing issues of relevance to the informal learning community; the primary target audiences are **ISE professionals**, not the general public or professionals primarily from other fields. For example, conferences may be based on promoting new partnerships and collaborations, or exploring findings and effective practices in such areas as informal learning research and evaluation. Proposers are strongly encouraged to seek guidance from an ISE Program Officer before submitting a conference proposal.

Requests generally should be made at least one year in advance of the scheduled date. Conferences or meetings and the facilities in which they are held must be accessible to participants with disabilities. The range of these awards is between $50,000 to $250,000. The budget may include publication costs; dissemination should be a major project component.

Format: Proposals should be submitted using the guidelines for full proposals; see Proposal Preparation and Submission Instructions (V.A.) for specific information. Proposals must identify the intended audience of ISE professionals; how participants will be invited or selected; tentative agenda and speakers; promotion and marketing plan; post-conference deliverables; and dissemination. For further information, also see GPG, Chapter II, Section D.7.

3. **Grant Supplements**

For existing ISE awards, ISE will consider requests for small amounts of supplemental funding to ensure completion of the original scope of work based on changes in conditions after the award was made or to take advantage of opportunities to extend further the project impact. Supplemental funding will not be approved for such purposes as defraying costs associated with increases in salaries or additional indirect cost reimbursement (see GPG Chapter V, Section B.4). ISE supplements are limited to $200,000 or 20% of the total award amount, whichever is less; only one supplement will be considered per ISE award. For their Supplement requests to be considered, PIs must be up to date in the submission of Annual Reports. Awardees are strongly encouraged to discuss the need with the Cognizant Program Officer prior to submission.

Format: Requests for supplemental funding must include an update of the progress of the original grant including data to support progress, description of the proposed work (including rationale, audience, design, evaluation), a budget for the requested funds, and a narrative justification of expenses. Proposals are submitted using the Supplemental Funding Request function in FastLane.

For Further Information

www.informalscience.org: Resource for research and techniques related to informal science learning.

www.nsf.gov: Information regarding both the NSF Education and Human Resources (EHR) Directorate and the Division of Elementary, Secondary and Informal Education (ESIE).

III. ELIGIBILITY INFORMATION

The categories of proposers identified in the Grant Proposal Guide are eligible to submit proposals under this program solicitation.

Organization Limit: Only U.S. organizations located in the U.S. may apply.

PI Eligibility Limit: An individual may serve as Principal Investigator (PI) on only one Preliminary Proposal and Full Proposal in each round of competition.

Limit on Number of Proposals: An organization may serve as lead on up to **three (3)** Preliminary Proposals and on **three (3)** Full Proposals in each round of competition for Project Grants.

IV. AWARD INFORMATION

- Anticipated Type of Award: Standard or Continuing Grant
- Estimated Number of Awards: 50
- Anticipated Funding Amount: $25 million, pending availability of funds.

Duration and Funding Level:

ISE Project Grants: Project duration may be from one to five years. The level of funding depends on the nature and scope of the project. Awards may range from $100,000 to a maximum of $3 million, except that up to two projects up to $5 million each may be considered for major efforts (e.g., multi-institutional project, new television series), pending availability of funds.

Planning Grants. Project duration is to be no more than two years. The maximum award is $75,000.

Conference, Symposia, and Workshop Grants. Project duration is expected to be no more than two years. The range for these awards is approximately $50,000 to $250,000.

Grant Supplements. The maximum award is $200,000 or 20% of the total amount of the original award, whichever is less.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

NOTE: It is important that you read the Grant Proposal Guide prior to preparing your proposal.

Preliminary Proposals *(required):*

A Preliminary Proposal (or Preproposal) is required in order to submit a full proposal for a Project Grant (but *not* proposals for Planning Grants, Conference Grants, or Grant Supplements). It must be submitted by the Preliminary Proposal due date immediately prior to the full proposal submission date. It is required in all cases, including resubmission of a proposal that has been previously declined.

The Preliminary Proposal provides an opportunity to assess the responsiveness of the project to the ISE guidelines and the potential to compete successfully in the merit review process. Preliminary Proposals must be submitted in FastLane no later than 5:00 p.m. local time on the due date.

The response to a Preliminary Proposal is either to encourage or discourage submission of a full proposal for a Project Grant based on reviewers' perception of the likelihood that a proposal based on the concept presented will be competitive. This advice is advisory only, and full proposals may be submitted in either event. Written reviews provide feedback to PIs to strengthen their proposals.

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

1. **COVER SHEET.** Be sure to include the program solicitation number and to check the Preliminary Proposal (or Preproposal) box.

2. **PROJECT SUMMARY**. The Summary must make the essence of the proposed project clear to the reader. It must succinctly describe the deliverables and demonstrate how they achieve the intended audience and strategic impacts, and address the characteristics of innovation and collaboration. **It must explicitly summarize in separate statements the project's Intellectual Merit and Broader Impacts, including the Additional Review Criteria** (in Section VI.A); if not, the proposal will be returned without review. This Project Summary is limited to one single-spaced page.

3. **PROJECT DESCRIPTION.** The narrative is a condensed version of the Project Description for a full proposal and is limited in length to six single-spaced pages. It should identify the essential features of the project in terms of Impact, Innovation, and Collaboration as described in the Project Description for a full proposal.

a. *Impact.* Summarize the public or professional target audience; intended public or professional impact; means for evaluating impact, including the external evaluator; intended strategic impact.

b. *Innovation.* Briefly describe the primary project deliverables; how they will achieve the intended impacts; their primary STEM content; the project plan; and how it builds on research and prior work.

c. *Collaboration.* Identify the senior staff; advisory committee members; consultants; contractors; and primary organizational partners, describing how they will achieve impacts through collaboration not otherwise possible.

4. **BUDGET** (including Justification). The support requested from NSF should be entered in the budget forms generated in FastLane. It is not necessary to enter the budget for each year; an overall budget for the project is sufficient. In the event that the project requires funding from sources in addition to NSF, the budget justification should identify the total project budget.

5. **SUPPLEMENTARY DOCUMENTS.** Additional documents will NOT be accepted for Preliminary Proposals without written Program Officer approval.

Full Proposal Instructions:

Proposals submitted in response to this program announcement/solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF *Grant Proposal Guide* (GPG). The complete text of the GPG is available electronically on the NSF Website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from pubs@nsf.gov.

NOTE: It is important that you read the Grant Proposal Guide prior to preparing your proposal.

The following instructions apply to ISE Project Grant proposals and to Conference, Symposia, and Workshop Grant proposals. Instructions for Planning Grant proposals are in the section following.

All proposals are submitted through FastLane. They must include: Cover Sheet, Project Summary, Table of Contents, Project Description, References Cited, Biographical Sketches, Budgets (including Justification), Current and Pending Support, and Supplementary Documents (as required). Specific requirements for ISE that supplement the Grant Proposal Guide are described below.

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. If not, the proposal will be returned without review.

1. **COVER SHEET**

   Proposers are reminded to include the number of this program Solicitation and the number of the Preliminary Proposal; failure to do so will delay processing of the proposal.

2. **PROJECT SUMMARY**

   The Summary must make the essence of the proposed project clear to the reader. It must succinctly describe the deliverables and demonstrate how they achieve the intended audience and strategic impacts, and address the characteristics of innovation and collaboration.

   It must explicitly summarize in separate statements the project's Intellectual Merit and Broader Impacts, including the Additional Review Criteria (in Section VI.A); if not, the proposal will be returned without review. This Project Summary is limited to one single-spaced page.

3. **PROJECT DESCRIPTION**

   ISE strongly encourages projects to be developed working "backwards" based from desired impacts rather than starting with a particular deliverable, such as an exhibition or television series. For this reason, the sequence of questions to be addressed here starts with the project impacts and the target audiences, then the project team, deliverables, and project design for achieving the intended impacts.

For consideration by the ISE program, **the Project Description must follow the format described (Impact, Innovation, Collaboration) and must explicitly address the questions under these headings.** Proposals that do not follow these instructions will be returned without review.

It is not necessary to retype the questions in the narrative, however. The Project Description is limited to 15 single-spaced pages in length. Although certain Supplementary Documents may be necessary, the Project Description must be able to stand on its own.

a. **Impact**

This section of the Project Description describes the target audience (public or professional), knowledge of that audience, underserved audiences reached, audience impacts, evaluation of that impact, and strategic impact on the ISE field.

1. *AUDIENCE. Who is the primary intended public or professional audience for your project?*

   For ***public*** audiences: *Who is the primary target audience for this project in terms of age range and other attributes? How many individuals will be directly reached by this project during the award and up to five years following the grant period? Provide a basis for this estimate. How does this project maximize reach to audiences nationally, regionally, or community-wide?*

   The target audience must be clearly identified. It is unlikely for a single project to impact all segments of the general public. Proposals should indicate how particular target audiences were selected. Projects should seek to sustain audience impact beyond the life of the award. Impact often can be extended through strategic collaboration with organizations that offer additional access to target audiences.

   For ***professional*** audiences: *What are the types of informal learning organizations on which your project will have the greatest impact? What categories of professionals does your project specifically target to achieve this impact?*

   Examples of organizations include: national or regional associations; museums (e.g., science center, natural history museum, zoo, aquarium, planetarium, arboretum or botanical garden); community organizations; media producers or disseminators; exhibit designers; or others that directly affect informal STEM learning. Examples of professionals include: staff, managers, board members, researchers/evaluators, funders, or others whose work directly impacts informal science education.

   What do you already know about the knowledge, interests, attitudes, and needs of your target audiences? How do you know?

   Successful proposals are based on knowledge of the target audiences, as well as identification of significant challenges and opportunities for enhancing informal science learning. Initial front-end research, whether carried out informally or as a formal study, may be necessary for obtaining this audience information. Although firmly based in STEM content, *competitive ISE projects are audience-focused rather than content-driven.*

   How does this project increase participation of underserved audiences in STEM? Describe your strategies for attracting and engaging these audiences.

   ISE seeks to contribute to the development of a diverse, internationally competitive and globally-engaged workforce of scientists, engineers, and technicians, in addition to informed citizens. Activities should stimulate increased participation in STEM of underserved and underrepresented

groups (e.g., minorities, women, girls, persons with disabilities, youth and adults from economically disadvantaged areas) or regions (e.g., rural areas, small towns, and urban areas). Projects should seek to match program content to the needs of diverse audiences, target their communities, partner with youth and community organizations that serve them, and incorporate appropriate strategies for outreach and project dissemination.

2. *AUDIENCE IMPACT. What are the intended impacts of your project on its target audiences? Identify the most important intended audience impacts (up to three). For each, indicate how you will measure or assess that impact and what value of that measure or evidence will serve as your criterion for defining project success. Explain your selections and provide the rationale for your selections.*

   Audience impacts should be specific, realistic, and achievable through the deliverables and strategies proposed. The measures that you indicate here for judging the success of your project must be integral to its evaluation, as described in the following section.

3. *IMPACT EVALUATION. What is the evaluation strategy you will use for the impact measures or assessments that you have identified? Provide a rationale. Include in the Supplementary Documents an evaluation plan that clearly identifies the methodologies that will be used for each impact measure.*

   All ISE projects should include plans for a summative evaluation based on qualitative and quantitative data that document the extent to which the intended impacts have been achieved, along with any unanticipated impacts. This study should seek to further theory and practice in informal learning by sharing lessons learned from both positive and negative findings. It should be conducted by an independent evaluator experienced in informal learning. For a basic introduction, see *The 2002 User-Friendly Handbook for Project Evaluation* (NSF 02-057). The web site www.informalscience.org posts information provided by evaluation firms that offer services in this area (listing here does not represent an endorsement by NSF). ISE encourages publication and sharing of summative evaluation findings widely with the field; at a minimum, reports must be submitted to this web site for dissemination.

4. *STRATEGIC IMPACT. What is the most critical strategic impact on the ISE field that your project intends to produce? What continuing impact is this project likely to have?*

   Projects must seek to produce a lasting impact on the field of informal science education ***in addition to impact on the target audiences***. Strategic impact may be achieved through new approaches, strategies, models, findings, and other means designed to advance the systems or institutions that promote informal learning. Dissemination to the field may be one method for sharing practices or results; although it may be valuable, dissemination is not an end in itself and not necessarily sufficient for achieving a strategic impact.

b. **Innovation**

The next section of the Project Description describes the primary project deliverables and their development, project design, STEM content, how the project builds on prior work and educational research, **with an emphasis wherever applicable on how the project demonstrates innovation**.

1. *PROJECT DELIVERABLES. What deliverables will your project produce that will lead to the intended impacts?*

   Proposers are encouraged to include complementary deliverables that are tightly integrated and created strategically to enhance the intended project

impacts. Examples of deliverables for *public audiences* include: exhibition (permanent or traveling); film or video; educational program, kit, or materials; radio program or series; software; television program or series; web site. Examples of deliverables for *professionals* include: collaborative, consortium, or network; conference, seminar, or workshop; media programs; professional development; publication; research study; web site. The yearly status of each deliverable will serve as a basis for assessing project progress in the Annual Reports.

Describe each deliverable in enough detail for reviewers to assess its ability to achieve the intended impacts, addressing the specific issues listed below by type of deliverable. Be sure to explain your "theory of action" linking proposed activities and experiences with intended audience outcomes.

a. Exhibit Deliverables

Describe a walk-through from the visitor's perspective that highlights key design elements and experiences; the relationship of these experiences to STEM content; details about accessibility; and logistics of exhibition tour (if applicable). In Supplementary Documents, provide indications of interest or commitment to host traveling exhibitions.

ISE supports both traveling and permanent exhibits that are visitor-centered, inquiry-based, and promote active learning. Where possible, projects are encouraged to consider smaller versions of exhibits or exhibit components for dissemination to additional venues, such as small museums and science centers, libraries, and community centers. To the extent feasible, exhibit developers should consider the principles of universal design and fabrication using environmentally-friendly materials and processes.

b. Media (Film, Video, Radio) Deliverables

Explain the program/series content and format; how the content will be presented; and a plan for outreach and complementary products designed to extend the learning experiences of target audiences. In Supplementary Documents, provide a treatment for one or more programs; documentation of interest or commitment from a major national or regional broadcast/cable outlet, or an indication of interest and distribution plan for a non-broadcast film; and sample of prior work.

Media deliverables are generally designed for national distribution. If a STEM topic is relevant to a particular area of the country, media projects designed for regional broadcast may be supported.

c. Research Deliverables

Present clearly-defined research questions, including identification of independent and dependent variables, where applicable; explain the methodologies used and their appropriateness to the project.

The objective of applied research studies should be to expand understanding of the theory or practice of effective informal STEM learning by investigating

important aspects that have significant potential to advance the field. Research studies may be well-defined elements of a larger project for public audiences or a separate project for informal learning professionals. ISE expects proposals to meet the highest quality standards of publishable educational research. The ISE program will not accept proposals essentially the same as any pending that have been submitted to the EHR Division of Research, Evaluation, and Communication (REC).

d. Web Deliverables

Present organization of web site; user interface; examples of online activities; means for attracting and tracking users; accessibility. In Supplementary Documents, include a flow chart or logic model and descriptions of relevant prior work.

Effective web-based ISE deliverables should be interactive and use a variety of techniques to hold the attention of the learner; exemplify scientific or technological processes; encourage off-line follow-up activities; provide feedback and guidance to users; have multiple entry points; and accommodate users with special needs to the extent possible. ISE does not support institutional web sites that primarily serve as marketing tools or basic information resources about institutions.

e. Youth and Community Program Deliverables

Describe the concept and organization of proposed programs; examples of activities; and key issues (e.g., participant recruitment, retention, and language barriers). In Supplementary Documents, provide documentation of commitment from all partners, local and regional/national; and samples of intended activities.

Creative project designs should provide participants with authentic STEM-based experiences. For example, projects might encourage family involvement in science and mathematics activities, or allow participants to contribute to ongoing scientific research as in citizen science. Youth and community projects result in high-quality program designs and the resources to support them including kits, activity materials, workbooks, information for parents, and multi-media products for national dissemination.

PIs that present new or improved models must clearly describe how what is proposed differs from and improves upon existing models. ISE may support prototype projects to be piloted and disseminated through a network of partnering organizations that leverage organizational strengths and resources.

2. *PROJECT DESIGN. How did you select the project deliverables and how will they be integrated to produce the greatest impact? What is your project plan? Identify key milestones in a timeline for their development, clearly indicating the status of every major deliverable by the end of each project year. Describe how the project will be sustained beyond the award, if appropriate.*

Every component of the project should be aligned in a way to enhance its ability to achieve the intended impacts. ISE strongly encourages the

integration of approaches and techniques across traditional boundaries to accomplish that end. The proposal must demonstrate how the deliverables address the needs and interests of a clearly defined target audience, segmented into audience subgroups as appropriate.

What is the process by which each deliverable be developed to achieve the greatest impact, including the evaluation strategies used? Provide a rationale for the approaches taken.

Formative research should be employed to obtain audience feedback at early stages, in addition to front-end research that informs the development process. For example, prototypes, pilot studies, or other forms of preliminary testing with target audiences are expected as part of the project design whenever possible. Projects also may include remedial evaluation where appropriate.

What are the areas of greatest potential risk in successfully achieving the intended project impacts? Describe your strategies for minimizing these risks.

In its efforts to advance the leading edge of informal science education, the ISE program is willing to support projects of higher risk that demonstrate the potential to yield significant payoffs. Proposals must demonstrate an understanding of those risks and identify appropriate measures for managing them.

3. *STEM CONTENT. What are the primary STEM disciplines for the project deliverables? Briefly describe the age-appropriate STEM content. What strategies will you use throughout the development process for ensuring the accuracy of content in deliverables and appropriateness to the target audiences?*

   ISE projects focus on STEM concepts and themes, processes, skills, and inquiry. Appropriate STEM content encompasses all NSF program areas, including biology; computer/information sciences; engineering; environmental sciences; geosciences; mathematics; physical sciences; and social, behavioral, and economic sciences. Strategies and mechanisms must be in place for ensuring accuracy of content and appropriateness to the target audience. Projects are encouraged to incorporate strategies for stimulating interest in STEM-related careers. ISE also seeks to engage the public in aspects of current research, including emerging STEM content and NSF priority areas (currently biocomplexity in the environment; information technology research; nanoscale science and engineering; mathematical sciences; and human and social dynamics), the process or nature of discovery and design, and the implications or consequences of research. While ISE requires a primary focus on STEM content, the program encourages connections to the humanities and arts, as well as proposals submitted by institutions representing those fields.

4. *EDUCATIONAL RESEARCH AND PRIOR WORK. How do your deliverables and project design build on specific findings from informal learning research? How do they build on and extend prior related work in the field? How do they build on prior NSF-funded work by the PI, if any?*

   Proposals must demonstrate that they are soundly based on research in education and informal learning in particular, citing appropriate literature references to studies that warrant the proposed approaches. In addition, **they must clearly demonstrate how they build upon prior practice and related work, citing specific examples of related deliverables and how the project design and proposed deliverables benefit from the lessons learned.** This section is critical to demonstrating how the project extends earlier work in meaningful ways.

   Results of Prior NSF Support. For NSF awards received within the past five years, the prospective PI or co-PI must describe the projects and

outcomes in sufficient detail for reviewers to assess their results. Full proposals based on Planning Grants must clearly demonstrate how the project builds on results from that award. Each project should be identified by grant number, funding amount, period of support, title, summary of outcomes, and any publications or presentations that acknowledge the award. Summative evaluation results and lessons learned should be clearly described. Executive summaries of evaluation studies only (*not* the entire reports) should be included as Supplementary Documents. Note: A new grant cannot be awarded unless the PI and co-PIs have submitted Final Reports for all completed NSF-funded projects.

c. **Collaboration**

This section of the Project Description describes the project team, the organizational partners, and the process by which they will achieve the intended impacts.

1. *PROJECT TEAM. For each of the following categories, who are the key project team members, their areas of expertise, their roles, and their extent of commitment to this project? Provide a rationale for your selections.*

    a. Senior Staff
    b. Advisory Committee Members
    c. Consultants
    d. Contractors

    Project leaders, key team members, and advisory committee members should collectively provide the expertise necessary to conduct the project, including relevant experience based in informal science learning, STEM content, knowledge of target audiences, any media used, and evaluation. Projects are encouraged to include members of underserved groups on their teams.

2. *PARTNERS. Who are your primary organizational partners? Identify each organization, its expertise, role in the project, extent of commitment, and contact person. Why were these partners selected? What has been the extent of their involvement in planning this project?*

    Potential partners could be drawn from informal learning organizations, media organizations, community organizations, professional associations, research institutions, school systems, and universities. (School systems, universities, and other entities for which informal learning is not the primary focus should partner with one or more informal learning organizations, which must be actively involved in both project planning and implementation.) They should be selected strategically based on their ability to achieve and extend project impacts.

3. *COLLABORATION PROCESS. How will the project partner organizations work together to achieve the deliverables and produce impacts that would not otherwise be possible? Describe your management structure and strategy for fostering a true collaboration among the partners.*

4. **BUDGETS**

Budgets should provide the most cost-effective means of producing the project deliverables and achieving the intended impacts. They must be accompanied by an explanation and justification that corresponds to each budget line item.

Funds cannot be requested for operational expenses, or primarily for the purchase of equipment or for equipment that is not an essential component of a project deliverable, such as an exhibition. Include under Travel (E) the cost for the PI to attend a two-day meeting every other year at NSF. Note that any consultants included in line G.3 must be compensated on a daily rate not to exceed the current NSF maximum rate. Each Subaward on line G.5 requires a complete set of Proposal Budget forms accompanied by line item justifications, as well as the basis for selecting the subawardee.

Even though cost sharing is no longer required by NSF, if a proposal requires other sources of funding, the scope and cost of the entire project must be provided in enough detail to identify the work to be performed and/or funded by parties other than NSF. Reviewers will need this additional information in order to assess the viability of the overall project, as well as the scope and budget to be funded by NSF.

The estimated budget to be funded by sources other than NSF does not have to be entered on a FastLane budget form, but should use the same format and major budget categories for comparison with the NSF budget. See Section II for additional information.

Proposals must include in the Supplementary Documents a spreadsheet that presents the total project budget for each year and cumulative. Rows should correspond to the NSF budget line items, and columns should show the funds requested from NSF, the funds provided from other sources, and the total for each line item.

Reference to these additional funds is for informational purposes only, and they will not be subject to audit.

5. **CURRENT AND PENDING SUPPORT**

Proposals must complete this standard form for the PI, any co-PIs, and senior project personnel. The proposal being submitted should be listed first on the form and identified as *pending*.

6. **SUPPLEMENTARY DOCUMENTS**

Because reviewers may be asked to assess a substantial number of competing proposals, the Project Description should provide sufficient information for a reviewer unfamiliar with the specific content or context to make a reasoned judgment. It may be necessary to provide some additional supporting information, as noted in the section on project deliverables. However, PIs must be judicious in the number of pages submitted. ***PIs should submit executive summaries and illustrative samples of materials rather than complete reports or lengthy publications.*** Biographical descriptions of advisors should be limited to no more than a single page for each.

Media that cannot be submitted through FastLane may be provided in the form of DVD, CD-ROM, VHS or audiotape; 15 copies (5 for Planning Grants), labeled with proposal number, title, and PI, must be sent to: Informal Science Education Program, EHR/ESIE, Room 885, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA 22230 [phone: (703) 292-5087]. 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 NSF proposal number from FastLane.

Planning Grant Proposal Instructions:

Planning Grants follow the general format described in the section above for full proposals. The information provided here is a summary of that format applied specifically to the preparation of Planning Grant proposals.

1. **PROJECT SUMMARY**: The Summary must make the essence of the proposed project clear to the reader. **It must explicitly summarize in separate statements the project's Intellectual Merit and Broader Impacts, including the Additional Review Criteria** (in Section VI.A); if not, the proposal will be returned without review. This Project Summary is limited to one single-spaced page.

2. **PROJECT DESCRIPTION:** Planning proposals can be no longer than 15 single-spaced pages and must fully address the NSF and ISE-specific review criteria of intellectual merit and broader impacts of the proposed project, including the additional review criteria identified in Section VI.

   The narrative will include these elements which are the same as for a full proposal. See Section V.A.1-3 for additional details.

   Impact (audience, intended public or professional impact; and means for evaluating impact; strategic impact;). *Impact* refers to the project that will ultimately result from the planning activity.

   Innovation (including main project deliverables; primary STEM content; the project plan; and how this project builds on research and prior work). *Innovation* should focus on the

specific planning activity being proposed.

Collaboration (primary individuals and organizational partners and how they will achieve the larger impacts of the project). This section should be addressed in terms of the ultimate project and the planning activity.

1. **BUDGET**: Same as Full Proposal Instructions.

2. **SUPPLEMENTARY DOCUMENTS**: Attach a statement of commitment from each partner that indicates willingness to participate. May also include samples that give the reviewer a clear idea of what is being proposed.

Proposers are reminded to identify the program announcement/solicitation number (05-544) in the program announcement/ solicitation block on the proposal Cover Sheet. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

B. Budgetary Information

Cost Sharing:

Cost sharing is not required by NSF in proposals submitted under this Program Solicitation.

Other Budgetary Limitations:

Funding of operating or capital expenses, or the purchase of major or office equipment are **not** supported by this program.

C. Due Dates

Proposals must be submitted by the following date(s):

Preliminary Proposals *(required):*

March 18, 2005

for Project Grants only

September 16, 2005

for Project Grants only

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

June 13, 2005

for Project Grants only

December 05, 2005

for Project Grants only

Planning Grants and **Conference, Symposia, and Workshop Grants:** Proposals for may be submitted at any time, following discussion with a Program Officer. These types of projects do not require Preliminary Proposals.

Grant Supplements for existing ISE Awards: Requests must be submitted at least two months prior to the need for additional funds, following discussion with the Cognizant Program Officer.

D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this announcement/solicitation through the FastLane system. Detailed instructions for proposal 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 announcement/solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this announcement/solicitation.

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. Proposers are no longer required to provide a paper copy of the signed Proposal Cover Sheet to NSF. Further instructions regarding this process are available on the FastLane Website at: http://www.fastlane.nsf.gov

VI. PROPOSAL REVIEW INFORMATION

A. NSF Proposal Review Process

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program Officers charged with the oversight of the review process. NSF invites the proposer to suggest, at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority-serving institutions, or adjacent disciplines to that principally addressed in the proposal.

The National Science Board approved revised criteria for evaluating proposals at its meeting on March 28, 1997 (NSB 97-72). All NSF proposals are evaluated through use of the two merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

On July 8, 2002, the NSF Director issued Important Notice 127, Implementation of new Grant Proposal Guide Requirements Related to the Broader Impacts Criterion. This Important Notice reinforces the importance of addressing both criteria in the preparation and review of all proposals submitted to NSF. NSF continues to strengthen its internal processes to ensure that both of the merit review criteria are addressed when making funding decisions.

In an effort to increase compliance with these requirements, the January 2002 issuance of the GPG incorporated revised proposal preparation guidelines relating to the development of the Project Summary and Project Description. Chapter II of the GPG specifies that Principal Investigators (PIs) must address both merit review criteria in separate statements within the one-page Project Summary. This chapter also reiterates that broader impacts resulting from the proposed project must be addressed in the Project Description and described as an integral part of the narrative.

Effective October 1, 2002, NSF will return without review proposals that do not separately address both merit review criteria within the Project Summary. It is believed that these changes to NSF proposal preparation and processing guidelines will more clearly articulate the importance of broader impacts to NSF-funded projects.

The two National Science Board approved merit review criteria are listed below (see the Grant Proposal Guide Chapter III.A for further information). 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 he/she is qualified to

make judgments.

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

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

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

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

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

Additional Review Criteria:

ISE reviewers will consider the following as specific aspects of Intellectual Merit and Broader Impacts.

Within Intellectual Merit, reviewers will assess:

Deliverables. Does this project creatively "push the envelope" in enhancing informal science learning? Have the deliverables been selected and integrated to achieve the greatest project impacts? Are front-end and formative evaluation efforts adequate for their development? Are their scope and depth of STEM content appropriate to the target audience? (Innovation)

Project Design. Are the deliverables, project design, and timeline well developed and organized to produce the specified impacts? Does the project design build on informal learning research and on lessons learned from prior efforts? Is the proposed budget reasonable and adequate? Does the proposal present meaningful strategies for managing potential risks? (Innovation)

Project Team. Is the team qualified to carry out the project? Do external advisors provide the expertise necessary to conduct the project, including relevant expertise based in informal science learning, STEM content, any media used, and evaluation? (Collaboration).

Partnerships. Does the project fully take advantage of partnerships to enhance project outcomes? Is there a credible strategy and plan for fostering or strengthening collaboration among the partners? (Collaboration)

Within Broader Impacts, reviewers will assess:

Audience. Is the primary target audience, as well as any secondary audience, clearly identified and segmented into subgroups as appropriate? Does the project demonstrate knowledge about the target audiences, their needs, and their interests? (Impact)

Public Audiences. Will the project likely achieve a significant impact on the target audience of informal learners? Does the project maximize reach to audiences nationally, regionally, or community-wide? Does the proposal offer effective ways to reach nontraditional audiences and underrepresented groups? (Impact)

---or---*Professional Audiences.* Will the project likely achieve a significant impact on professionals in the field of informal science learning? (Impact)

Impact Evaluation. Are there clear and appropriate measures and criteria for defining project success? Is there an appropriate summative evaluation plan for assessing impact? Is there an effective plan for broadly sharing project outcomes and findings? (Impact)

Strategic Impact. Is the project likely to have a meaningful impact on the knowledge or practice of informal science education in addition to serving any audiences directly? (Impact)

B. Review Protocol and Associated Customer Service Standard

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Proposals submitted in response to this announcement/solicitation will be reviewed by Panel Review.

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

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 Director. In addition, the proposer will receive an explanation of the decision to award or decline funding.

NSF is striving to be able to tell proposers whether their proposals have been declined or recommended for funding within six months. The time interval begins on the closing date of an announcement/solicitation, or the date of proposal receipt, whichever is later. The interval ends when the Division Director accepts the Program Officer's recommendation.

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 Division 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.A. 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 (NSF-GC-1); * or Federal Demonstration Partnership (FDP) Terms and Conditions * and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreement awards also are administered in accordance with NSF Cooperative Agreement Terms and Conditions (CA-1). Electronic mail notification is the preferred way to transmit

NSF awards to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

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

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpm. The GPM is also for sale through the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402. The telephone number at GPO for subscription information is (202) 512-1800. The GPM may be ordered through the GPO Website at http://www.gpo.gov.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

PIs are required to submit the Summative Evaluation of the project for posting to the web site www.informalscience.org as part of submission of the Final Report and may be requested to provide project data for ISE program analysis and evaluation.

Within 90 days after the expiration of an award, the PI also is required to submit a final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for the PI and all Co-PIs. 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. This system permits electronic submission and updating of project reports, including information on project participants (individual and organizational), activities and findings, 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.

VIII. CONTACTS FOR ADDITIONAL INFORMATION

General inquiries regarding this program should be made to:

- Alphonse T. Desena, Program Director [exhibit projects], Directorate for Education & Human Resources, Division of Elementary, Secondary, & Informal Education, 885 S, telephone: (703) 292-5106, fax: (703) 292-9044, email: adesena@nsf.gov
- Arlene M. de Strulle, Program Director [technology projects], Directorate for Education & Human Resources, Division of Elementary, Secondary, & Informal Education, 885 S, telephone: (703) 292-5117, fax: (703) 292-9044, email: adestrul@nsf.gov
- Sylvia M. James, Program Director [youth & community programs], Directorate for Education & Human Resources, Division of Elementary, Secondary, & Informal Education, 885 S, telephone: (703) 292-5333, fax: (703) 292-9044, email: sjames@nsf.gov
- Valentine H. Kass, Program Director [media projects], Directorate for Education & Human Resources, Division of Elementary, Secondary, & Informal Education, 885 S, telephone: (703) 292-5095, fax: (703) 292-9044, email: vkass@nsf.gov
- David A. Ucko, Section Head, Informal Science Education, Directorate for Education & Human Resources, Division of Elementary, Secondary, & Informal Education, 885 S, telephone: (703) 292-5126, fax: (703) 292-9044, email: ducko@nsf.gov
- Sandra H. Welch, Program Director [media projects], Directorate for Education & Human Resources, Division of Elementary, Secondary, & Informal Education, 885 S, telephone: (703) 292-5094, email: swelch@nsf.gov

For questions related to the use of FastLane, contact:

- ESIE FastLane Contact, telephone: (703) 292-8620, email: ehr-esie.info@nsf.gov

IX. OTHER PROGRAMS OF INTEREST

The NSF *Guide to Programs* is a compilation of funding for research and education in science, mathematics, and engineering. The NSF *Guide to Programs* is available electronically at http://www.nsf.gov/cgi-bin/getpub?gp. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter.

Many NSF programs offer announcements or solicitations concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices. Any changes in NSF's fiscal year programs occurring after press time for the *Guide to Programs* will be announced in the NSF E-Bulletin, which is updated daily on the NSF Website at http://www.nsf.gov/home/ebulletin, and in individual program announcements/solicitations. Subscribers can also sign up for NSF's MyNSF News Service (http://www.nsf.gov/mynsf/) to be notified of new funding opportunities that become available.

The National Science Foundation (NSF) and the National Endowment for the Humanities (NEH) have agreed to encourage TV film projects that meet both the NSF criteria for science content and the NEH criteria for humanities content.

Applicants who would like their media projects considered for co-review and possible co-funding by the Public Programs Division of the National Endowment for the Humanities should so indicate in the project description. Relevant guidelines for NEH Radio Projects:

- Development and Production may be found at http://www.neh.gov/grants/guidelines/radiodev.html.
- Relevant guidelines for NEH Television Projects: Planning, Scripting, or Production may be found at http://www.neh.gov/grants/guidelines/tvprojects.html.

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