Informal Science Education (ISE)

Program Solicitation
NSF 04-579
***Replaces Document* NSF 03-511**

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

Letter of Intent Due Date(s) ***(required for ISE Project Grants only):***

June 11, 2004

November 05, 2004

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

August 13, 2004

January 06, 2005

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 for individuals of all ages and backgrounds that are designed to increase their interest, engagement, and understanding of science, technology, engineering, and mathematics (STEM), 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.

Cognizant Program Officer(s):

- Julie I. Johnson, Program Director [youth & community programs], Directorate for Education & Human Resources, Division of Elementary, Secondary, & Informal Education, 885 S, telephone: (703) 292-5117, fax: (703) 292-9044, email: jjohnson@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, Program Director [exhibits and museum programs], 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

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

- 47.076 --- Education and Human Resources

Eligibility Information

- **Organization Limit:** None Specified.
- **PI Eligibility Limit:**

  An individual may serve as Principal Investigator (PI) on only one full proposal for each round of competition.

- **Limit on Number of Proposals:** None Specified.

Award Information

- **Anticipated Type of Award:** Standard or Continuing Grant
- **Estimated Number of Awards:** 30
- **Anticipated Funding Amount:** $15 million, pending availability of funds. See Section IV.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Submission of Letters of Intent is required for ISE Project Grants **only**. 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.
- **Indirect Cost (F&A) Limitations:** Not Applicable.
- **Other Budgetary Limitations:** Not Applicable.

C. Due Dates

- **Letters of Intent *(required for ISE Project Grants only)*:**
  June 11, 2004
  November 05, 2004
- **Full Proposal Deadline Date(s)** (due by 5 p.m. proposer's local time):
  August 13, 2004
  January 06, 2005

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.

TABLE OF CONTENTS

I. INTRODUCTION

In addition to the learning that occurs in formal settings such as the classroom, informal learning happens throughout people's lives in a highly personalized manner based on their specific interests and past experiences. This type of learning is voluntary, self-directed, and often takes place within a social context (Crane *et al.,* 1994; Falk, 2001). 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, as well as in 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 will therefore continue to invest 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 will support 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.

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 give particular emphasis to the ability of projects to demonstrate the following characteristics:

Strategic Impact. In addition to reaching their target audiences, projects should seek to improve theory or practice through approaches, strategies, findings, or models having impact on the institutions or systems that promote informal learning. By identifying and influencing a leverage point for advancing the field in a meaningful way, a project can extend its impact beyond the lifetime of the grant or the project deliverables.

Collaboration. Projects should take advantage of partnerships to achieve more significant outcomes than would otherwise be possible. Organizations should seek to extend project impacts through leveraging the respective competencies of partners having complementary resources and expertise.

Innovation. Projects should "push the envelope" through creative new ways to strengthen informal science education. In a manner similar to other NSF programs, ISE seeks to fund projects at the frontiers of informal science education that will advance the field.

Through these means, the ISE program can invest its resources in projects that most effectively advance the engagement and understanding of STEM by all Americans, as well as the institutions and organizations that serve them.

II. PROGRAM DESCRIPTION

ISE projects have as their primary audience informal learners, from young children to senior citizens, or professionals whose work impacts them directly. In contrast with formal learning, informal learning refers to those activities that are *not* primarily for school use, part of an ongoing school curriculum, or require mandatory participation in a credited school activity.

A. **ISE Project Grants**

The ISE program invests in projects that target 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 eligibility requirements:

> *Audience* : The *primary* target audience must be informal learners, which may include families; children and youth (outside of school programs); and adults. 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 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.

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 eligibility 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.

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. Examples include demonstration of the proof of concept or project planning for a large national or regional collaboration. Proposers are strongly encouraged to seek

guidance from an ISE Program Officer before submitting a planning proposal.

Applicants should be sufficiently advanced in their project conceptualization to be able to present the general approach of the final project and a detailed description of the planning activity goals and methods. Planning grants are not intended to implement projects. Rather, they are intended to lead to submission of a full proposal that would fund the project being planned based on subsequent merit review. Expenses directly involved in preparing a full proposal are not eligible for funding.

ISE will support planning grants under the following conditions: (1) they are small scale or exploratory in nature; (2) the duration does not exceed two years; and (3) awards are non-renewable. Annual and Final reports are required; project results should be broadly disseminated whenever appropriate.

> *Format:* The planning grant proposal should describe the impact of the larger project should it be implemented, while detailing the deliverables and project design for the planning phase. It should use the format for full proposals, addressing the specific questions in this solicitation and the emphases of strategic impact, innovation, and collaboration. Planning grant proposals must fully address the NSF review criteria of intellectual merit and broader impact, including the additional ISE criteria.

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 primarily professionals 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 $200,000. The budget may include publication costs; dissemination should be a major project component.

> *Format:* Proposals should be submitted to NSF using the guidelines for full proposals described in this solicitation. Proposals must identify the intended audience; how participants will be invited or selected; tentative agenda and speakers; promotion and marketing; post-conference deliverables; dissemination. For further information on proposal submission, 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.ehr.nsf.gov/esie/programs/ise/ise.asp: NSF Informal Science Education (ISE) Program.

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

www.ehr.nsf.gov, www.ehr.nsf.gov/esie: NSF Education and Human Resources (EHR) Directorate and the Division of Elementary, Secondary and Informal Education (ESIE), respectively.

References and Resources

Austin, J. E. (2000). *The Collaboration Challenge.* Jossey-Bass.

Bohan-Baker, M. (ed.) (2003). *Evaluating Community-based Initiatives.* The Evaluation Exchange, 9(3). Harvard Family Research Project.

Chittenden, D., Farmelo, G. & Lewenstein, B. V (eds.) (2004). *Creating Connections: Museums and the Public Understanding of Current Research.* AltaMira Press.

Crane, V., Nicholson, H., Chen, M. & Bitgood, S. (1994). *Informal Science Learning: What the Research Says about Television, Science Museums and Community-based Projects.* Research Communications Ltd.

De Vita, C. J. & Fleming, C. (eds.). (2001). *Building Capacity in Nonprofit Organiz*ations. The Urban Institute.

Falk, J. H. (2001). *Free-Choice Science Education: How We Learn Science Outside of School.* Teachers College Press.

Falk, J. H. & Dierking, L. D. (2000). *Learning from Museums: Visitor Experiences and the Making of Meaning*. AltaMira Press.

Gregory, J. & Miller, S. (1998). *Science in Public: Communication, Culture, and Credibility*. Perseus Publishing.

Hein, G. E. (1998). *Learning in the Museum*. Routledge.

Kirshner, B., O'Donoghue, J. L. & McLaughlin, M. W. (2003). *Youth Participation: Improving Institutions and Communities. New Directions for Youth Development, No. 96.* Jossey Bass.

Linden, R. (2002). *Working Across Boundaries.* John Wiley & Sons, Inc.

National Institute for Out-of-School Time (2004). *Making the Case: A Fact Sheet on Children and Youth in Out-of-School Time.* Center for Research on Women.

Rand Mathematics Study Panel (2003). *Mathematical Proficiency for All Students: Toward a Strategic Research and Development Program in Mathematics Education*. Rand Science & Technology Policy Institute.

Schauble, L, Leinhardt, G & Martin, L. (1997). *A Framework for Organizing a Cumulative Research Agenda in Informal Learning Contexts.* Journal of Museum Education, 22(2 & 3), 3-8.

Senge, P. M. (1998). The Practice of Innovation. *Leader to Leader,* No. 9, Summer 1998.

St. John, M., Perry, D. & Huntwork, D. (1994). *Investments in Informal Science Education: A Framework for Evaluation and Research.* Inverness Research Associates.

Wartella, E, Lee, J. H. & Caokivitz, M. A. (2002). Children and Interactive Media--Research Compendium Update. Markle Foundation.

III. ELIGIBILITY INFORMATION

The categories of proposers identified in the Grant Proposal Guide are eligible to submit proposals under this program announcement/solicitation. An individual may serve as Principal Investigator (PI) on only one full proposal for each round of competition.

IV. AWARD INFORMATION

Duration and Funding Level:

ISE Full Proposals: 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.

Conferences, Symposia, and Workshops. Project duration is expected to be no more than two years. The range for these awards is approximately $50,000 to $200,000.

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

Letters of Intent *(required for ISE Project Grants only):*

A Letter of Intent (LOI) is required in order to submit a full proposal (but *not* required prior to proposals for Planning Grants, Conference Grants, or Grant Supplements). The LOIs helps ISE staff identify the required numbers and qualifications of reviewers and panelists. In addition, LOIs enable Program Officers to provide feedback to PIs on appropriateness of the proposed projects to the ISE program. A PI should submit a LOI as early as possible in advance of the due date; Program Officer feedback will be provided as expeditiously as possible. Note that LOIs will also be required for any full proposals being resubmitted.

> *Format:* A LOI is limited in length to no more than **four** single-spaced pages (12-point font) and should include all of the information listed below. It should summarize the essential features of the project, using the format for the Project Description of a full proposal presented in this solicitation.
>
> Proposed *Title* of project
>
> Submitting *Institution*
>
> Names and affiliations of *PI* and *co-PIs;* e -mail and phone number of PI
>
> *Impact.* Summarize the intended strategic impact; public or professional target audience; intended public or

professional impact; and means for evaluating impact, including the external evaluator.

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.

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.

LOIs must be submitted by the due date to the following e-mail address: ehr-esi-iseloi@nsf.gov. The e-mail subject line should include the PI name and project title. The LOI should appear both as text in the message and as an attachment (PDF or Word format). No supplementary or additional materials will be accepted.

ISE will indicate receipt of the required LOI via an e-mail reply. This acknowledgment will establish eligibility for submission of the full proposal based on the LOI. The PI must save this e-mail and include it among the Supplementary Documents uploaded via FastLane. **ISE Project Grant proposals submitted without this LOI e-mail acknowledgment will be returned without review**.

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/cgi-bin/getpub?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.

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.

COVER SHEET

Proposers are reminded to include the program solicitation number of this solicitation; failure to do so will delay processing of the proposal.

PROJECT SUMMARY

This overview should succinctly describe the intended project impacts, deliverables, and means by which they will achieve those impacts. It must specifically summarize the project's **intellectual merit** and **broader impacts** (including the Additional Review Criteria in Section VI.A) in separate sections labeled as such; **if the Summary does not directly explicitly address intellectual merit and broader impacts, the proposal will be returned without review**. This Project Summary, which is limited to one single-spaced page, should demonstrate how the project addresses the characteristics of strategic impact, collaboration,and innovation.

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, this project narrative must follow the format described here and explicitly address the questions under the three headings that follow (do *not* retype the questions in the narrative, however). The Project

Description is limited to **15 single-spaced pages** in length.

1. ***Impact***

What is the most critical strategic impact that your project intends to produce? What continuing impact is this project likely to have?

Projects should seek to produce a lasting impact on the field of informal science education that extends beyond those achieved with their target audiences, whether public or professional. They should strive to advance knowledge or practice that extends the capacity of the field to educate the public in informal settings.

Who is the 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?

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? Examples 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.

What categories of professionals does your project specifically target to achieve this impact? Examples 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 audience(s)? How do you know? What compelling target audience need does this project address?

Successful proposals are based on knowledge of the target audience, as well as identification of significant challenges and opportunities for enhancing informal science learning.

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.

What is the intended impact of your project on its target audience(s)? Identify the most important intended 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.

What is the evaluation strategy you will use for the impact measures or assessments that you have identified? Provide a rationale.

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. 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.

2. ***Collaboration***

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.

Who are your primary organizational partners? Identify each organization, its expertise, role in the project, extent of commitment, and contact person.

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.)

Partnerships and strategic alliances can be challenging to implement, but they often make it possible to achieve greater impact. For example, partnerships between larger and smaller institutions developing projects that serve both may promote capacity building in the field. Appropriately-selected partners can bring access to audiences, complementary resources, and expertise that extend project outcomes.

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 or strengthening collaboration among the partners.

3. ***Innovation***

What deliverables will your project produce that will lead to the intended impacts? Identify key milestones in their development, clearly indicating the status of every major deliverable by the end of each project year.

The ISE program seeks innovative ways to strengthen informal science learning. Innovation, which may

be incremental or sweeping, can take many forms, including improvements in deliverables, new types or combinations of deliverables, or deployment through new strategies. Innovation is more than just something new, however. It should represent a creative approach or solution for improving a deliverable or other ways in which important needs are addressed, building upon prior efforts and educational research.

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 sufficient detail for reviewers to assess its ability to achieve the intended impacts, addressing the specific issues listed below by type of deliverable.

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 a schematic floor plan, as well as 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.

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.

Research Deliverables

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

The objective of 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 will not accept proposals closely related to any being considered by the EHR Division of Research, Evaluation, and Communication (REC). ISE expects proposals to meet the highest quality standards of educational research.

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.

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.

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, and 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.

How did you select the project deliverables and how will they be integrated to produce the greatest impact? What is your project plan? How will each deliverable be developed to achieve the greatest impact, and how will it be produced cost-effectively?

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 are the evaluation strategies you will use in developing your deliverables? Provide a rationale for the approaches taken.

Projects should be based on initial front-end research that relates the project to the needs and interests of target audiences. Formative research should be employed to obtain audience feedback at early stages. 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.

How does your project design build on specific informal learning research? On prior efforts in this area by yourself (including NSF grants) and others?

Proposals must demonstrate that they are soundly based on research in education and informal learning in particular, in addition to the lessons learned from prior practice and related work.

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 (*not* 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.

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.

BUDGETS

Note that ISE proposals no longer require cost sharing or other leveraged resources. See Budgetary Information (Section V. B), for additional guidance on budget preparation.

CURRENT AND PENDING SUPPORT

Proposals must include this 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.

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 should be judicious in the number of pages submitted. Do not include lengthy publications or complete reports (executive summary only). 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.

The Supplementary Documents must include a copy of the e-mail message from ISE indicating receipt of a LOI for the proposed project. **ISE Project Grant proposals submitted without this LOI e-mail acknowledgment will be returned without review**.

For Award Durations and Funding Levels, please see Section IV above.

Proposers are reminded to identify the program announcement/solicitation number (04-579) 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 in proposals submitted under this Program Solicitation.

Budget Preparation Instructions:

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 budget line items.

Funds cannot be requested for operational expenses 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. 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.

NSF funds requested by an ISE project grant proposal are limited to no more than $3 million over the term of the project, with the exception that one or two major projects each up to $5 million in total may be considered per year, pending availability of funds. The ISE program does not require cost sharing of any kind; *line M on all budget forms should be zero*. However, the program recognizes that certain types of projects cannot be funded solely through ISE grant funds. Should a project depend on other sources of funding, proposals should include in the Supplementary Documents a spreadsheet that shows an itemized total project budget and the sources of the additional funds. The requirement to provide information and budgets for the work to be performed and/or funded by parties other than NSF is intended to allow proposers, reviewers, and NSF Program Officers to clearly delineate who is responsible for performing and funding each part of the overall large project. Reference to these additional funds is for informational purposes only, and they will not be subject to audit.

C. Due Dates

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

Letters of Intent *(required for ISE Project Grants only):*

June 11, 2004

November 05, 2004

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

August 13, 2004

Proposals for Planning Grants and Conference Grants may be submitted at any time, following discussion with a Program Officer.

Grant Supplements: 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 specific aspects of intellectual merit and broader impacts.

What is the intellectual merit of the proposed activity?

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)

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 prior efforts? Is the proposed budget reasonable and adequate? Does the proposal present meaningful strategies for managing potential risks? (Innovation)

What are the broader impacts of the proposed activity?

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

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)

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)

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/home/grants/grants_gac.htm. 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/cgi-bin/getpub?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.

Annual and Final Reports should describe the progress in developing and implementing the project deliverables. Reference should be made explicitly to the milestones identified by year in the Project Design. Should additional funds be required, the status of obtaining them should also be described.

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:

- Julie I. Johnson, Program Director [youth & community programs], Directorate for Education & Human Resources, Division of Elementary, Secondary, & Informal Education, 885 S, telephone: (703) 292-5117, fax: (703) 292-9044, email: jjohnson@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, Program Director [exhibits and museum programs], 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

This document replaces the prior ISE solicitation, NSF 03-511.

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 Custom News Service (http://www.nsf.gov/home/cns/start.htm) to be notified of new funding opportunities that become available.

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Awardees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities and persons with disabilities to compete fully in its programs. In accordance with Federal statutes, regulations and NSF policies, no person on grounds of race, color, age, sex, national origin or disability shall be excluded

from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF, although some programs may have special requirements that limit eligibility.

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the GPG Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

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: pubs@nsf.gov

  or telephone: (703) 292-7827
- **To Locate NSF Employees:** (703) 292-5111

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; 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 applicant 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 needing information as part of the review process or in order to coordinate programs; 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," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). 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 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 this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton, Reports Clearance Officer, Division of Administrative Services, National Science Foundation, Arlington, VA 22230.

OMB control number: 3145-0058.