

*\*See the corresponding PowerPoint Presentation; PPT slides are referenced below in ().*

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**I. ISE Program Overview (Slides 3-6)**

**A. Mission (Slide 3)**

- Innovation and Advancing the ISE Field
- Potentially Transformative Work
- Building on Prior Work
- Importance of Evaluation
- Role of Collaboration
- Other Program Solicitations in Our Division

Comments: Just as the rest of NSF supports research and development that advance various disciplines and fields, the ISE program funds work that can have an impact beyond the particular institution submitting the proposal and its local community. New ideas are needed in just about every facet of the work of professionals in informal STEM education. Some of these might even be positioned to transform the field in some significant way. In all cases, proposals must make a strong case for the state of the field in the area of interest, providing reviewers with information about any pertinent literature and key work that has been done by the submitting team and by others. Evaluation processes are critical as well since they provide both the necessary input that guides the work and indicators of the level of success of intended outcomes. Strong and well-managed collaborations are almost always important given the range of creative skills that informal STEM education projects require.

Finally, keep in mind that the Division of Research on Learning in Formal and Informal Settings has four major programs with respective guidelines. The missions of these programs have points of intersection, so it is possible that your work might be well suited to other DRL programs.

**B. Audiences- Public and Professional (Slide 4)**

Comments: Projects can target public and professional audiences in any combination. In many instances, these audiences are carefully delimited and their pertinent characteristics identified. For the ISE program, professionals are primarily those whose main work is in informal STEM education broadly construed. However, many projects involve the integration of different domains including STEM researchers, education researchers, and formal education professionals. Building human capacity within such individuals and groups serves to broaden and strengthen the field.

**C. Eligibility Issues (Slide 5)**

- Number of proposals per organization, per PI
- Organization Type
- Informal versus formal education as project focus

- Activity Setting (e.g., school building)
- STEM content
- Communicating Research to Public Audiences (special requirements)

Comments: Many of the inquiries that we receive relate to issues of eligibility. The guidelines present information about many of these. Proposers should also check the Summary of Program Requirements section in the solicitation. This section has been specifically written into the beginning of the solicitation by NSF to summarize the eligibility requirements for prospective applicants. With regards to eligibility, keep in mind the following:

There are no limits on the number of proposals per organization or per principal Investigator (PI). However, ISE program staff will take “portfolio balance” criteria under consideration as decisions are made, which may involve distributing awards among different PIs. Also, there is no restriction on any one person being incorporated into different proposals in different capacities, whether within one’s own institution or as a contributor to the work of others.

The ISE program places no restrictions on the kind of organization that can submit a proposal, including for-profit corporations – but keep in mind that the NSF budget does not have a line item for “profit.” The only exception in this regard pertains to other federal agencies since NSF cannot support the research and salaries of other federal employees.

The mission of the ISE program is to promote learning by children and adults in non-school contexts; however, in most instances learners in formal education environments can be engaged with informal education resources and, as such, can be secondary targeted audiences.

Some projects can take place in school buildings when these are used for informal education purposes, such as after-school or community-based programs.

STEM content can be in any discipline or domain that NSF supports in its research awards, which includes most areas of STEM exclusive of health and medicine. If you have any question about STEM content eligibility, one good test is to look at the NSF Web site to see if research in your area of interest is supported.

The CRPA project type is the only one that has a PI eligibility requirement where the PI must have an active NSF research award, including research in the social and behavioral sciences, economic science, and education research. The PI of the CRPA proposal can be the co-PI of the research grant.

#### D. Resources - Especially for new Principal Investigators (Slide 6)

Comments: The Web resources listed in the solicitation are intended for all; however, they are particularly pertinent for anyone who is relatively new to the ISE field since it is difficult to make a strong case for your project’s advancing the field if your familiarity with it is minimal. Of course, you should not limit your search to those resources listed in the guidelines.

## **II. Project Types – What’s Right for You (Slide 8)**

### **A. Project Types**

- Research
- Pathways
- Full-scale Development (can include research component)
- Broad Implementation
- Communicating Research to Public Audiences
- Other - Conference/Symposia/Workshop, EAGER, RAPID

Comments: The ISE program guidelines provide descriptions of each of the main project types, while the NSF Grant Proposal Guide has information about NSF-wide proposal types for conferences, EAGER and RAPID.

Research in informal STEM education has been supported by this program for some time; however, the solicitation now more clearly specifies this project type and hopefully resolves some confusion about whether all proposals to this program must have a research component. Note that “research” includes many kinds of studies, including theoretical work.

For PIs who are familiar with our program, what used to be called Planning Proposals has been expanded into the more comprehensive type called Pathways.

Full-scale Development is the term we are using for what, in the past, has been the most common proposal type that our program has supported. Note that research studies can be a component of Full-scale Development projects, but do not have to be.

Broad Implementation is a new category for those special cases where successful products have an untapped use or market. We are interested in leveraging our past investments to continue to reach new and larger audiences. It would be particularly interesting to see how more than one product could be combined to increase impact.

Communicating Research to Public Audiences proposals are now rolled into the guidelines rather than having a separate solicitation. The maximum amount has been increased, but in most respects this project type has the same objectives as in the past.

## **III. Proposal Preparation, Submission, & Processing (Slides 10-12)**

### **A. Proposal Preparation (Slide 10)**

- Project Summary (must be one page): Project Type, Intellectual Merit and Broader Impact
- Project Description (must be no longer than 15 pages): Project Rationale, Project Design, Project Management, Evaluation –
- Other sections: References, Budgets and Budget Justifications; Current and Pending Support; Bios
- Supplementary Documents (full proposal only)
- Budgets: Preliminary Proposals; Full Proposals
- Important Considerations
  - Mentoring Postdoctoral Fellows

Comments: Keep in mind that NSF is very strict about the lengths of the Project Summary and the Project Description, the inclusion of Intellectual Merit and Broader Impact information, and what can be included, if anything, in Supplementary documents.

The intent is to create a level playing field for all proposal submissions. This relates as well to the type font style and size you should pay close attention, especially since these differ between various computer systems. When proposals come in to us, they go through a compliance check. In some cases they can be returned without review for being out of compliance. Also, there are differences with what can be submitted in a Preliminary Proposal versus a Full Proposal, so pay particular attention to such requirements.

The three main sections of the Project Description provide you with a framework for making the case for your proposal, starting with its rationale, then the overall design, and followed by the management and collaboration process. You must use these headings in this sequence, but you do have flexibility on how best to present your case. For those of you familiar with our previous solicitation, Project Rationale is basically the strategic impact section, Project Design is innovation, and Project Management is collaboration. In the Project Design section you must include material about evaluation processes.

With respect to budgets, Preliminary Proposals should not have annual budgets; instead, fill in the first year's budget with the total project budget. The budget justification section for Full Proposals should include, if necessary, an explanation for the salary of the PI if the request is for more than two months. This new requirement was a clarification that NSF felt was important mostly for university-based research. In the informal education world, it is not uncommon for proposals to request more than two months of PI salary; so be clear in the budget justification section about the rationale.

The new requirement with respect to mentoring of postdoctoral fellows may not apply to many proposals. But if your project includes postdocs, make sure you have a clear section in the narrative about how they will be mentored.

#### B. Proposal Submission (Slide 12)

- Adhere to Deadlines - Preliminary (June 25, 2009) and Full Proposals (November 19, 2009)
- Do not include supplementary material with preliminary proposals
- Refer to Grant Proposal Guide  
[http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=gpg](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg)
- Submit via NSF Fastlane System ONLY
- Collaborative Research proposals

Comments: Deadlines are obviously very important. We strongly recommend that you do not wait until the last minute to send the proposal to NSF. Note that you must now submit proposals via the NSF FastLane system, not via Grants.gov. If you have any technical difficulties, you should contact the FastLane help line at (800) 673-6188. If you encounter extraordinary circumstances (for example, a hurricane has hit and you have had no power for a few days), contact us so we can decide how to proceed.

With regards to supplementary documents, keep in mind that any supplementary documents beyond what is accepted for Research, Pathways, and CRPA projects will result in the proposal being returned without review.

Some institutions decide to submit their proposals to us using the mechanism that NSF calls "collaborative research." This is a different use of the term, collaboration, than

what the ISE guidelines refer to in the Project Management section. In this case, proposals are submitted separately by collaborating institutions and each gets a separate proposal number and has a separate budget. If you decide to submit using this mechanism, please note that it is absolutely essential that the lead institution submits their proposal first so the FastLane system can link the rest of the submissions to the lead.

### C. Proposal Processing (Slide 14)

- General Comments
  - Proposal Success Rate
  - Portfolio Balance
  - Switching Organization, PI, Project Types, etc. between Preliminary and Full Proposals
  
- Preliminary and Full Proposals
  - Panels and Ad Hoc Reviews (one exception = return without review)
  - Notifications
    - Return without Review (no panel or ad hoc review)
    - Advisory Encourage or Discourage to submit a full proposal (after preliminary proposal submission)
    - Declination or Award (after full proposal submission)
  - Negotiations for Full Proposals
  - Institutional Review Board (IRB) Processing for Human Subjects Research

Comments: For Preliminary Proposals, we have no formula for the ratio of Encouraged versus Discouraged proposals. Historically, about one third of Preliminary Proposals have been Encouraged. For Full Proposals, the proposal success rate for the Informal Science Education program has typically been between 15 – 20%. However, this depends on the number of proposals that we receive and our budget, which for 2010 has not increased over 2009. We have also experienced a general increase in the amount of funding requested, which has an impact on the number of awards we can make. Many considerations are taken into account as we work to have a balanced portfolio of awards. Unlike some other federal agencies, NSF does not have a strict numerical measure for determining the line between those proposals that are funded versus those that are not.

Between the time you submit a Preliminary Proposal and a Full Proposal, it is possible that circumstances will change. While there are no absolute rules about what you can change, it is not expected that the submitting institution will change. In some instances, the PI might change, especially if there is a co-PI who would change to the PI. Project types should rarely change; but you might get feedback from the reviewers of the Preliminary Proposals that suggest some modifications, for example, changing a Full-scale Development project into a Pathways project.

Except for some conference proposals, EAGERs, and RAPIDs, basically all proposals to us get reviewed externally by professionals with experience in informal STEM education, STEM content, evaluation, etc. In most cases, proposals are reviewed in a panel process. Also, we do get ad hoc reviews for a variety of circumstances.

After we receive reviews and ratings, we have staff meetings to discuss the results and implications for our portfolio. At that point, some PIs will be contacted to collect further information that is responsive to reviewers' and program officer questions and issues. While this might be interpreted to be a good sign for those who are contacted, it does not indicate that a proposal will be funded and should not be so construed. The proposal might not be recommended for funding by the program officer, and there are more approval processes beyond the program officer's recommendation that can affect the outcome.

Typically, the PI has determined at the time of the submission of the Full Proposal whether the project involves human subjects research and the related box must be checked on the proposal cover page. In many instances, the letter from the Institutional Review Board process will not have been completed by the date of the proposal submission. During the negotiation phase, the PI and the program officer will work out how best to proceed with the IRB process. Note that many evaluation processes require some IRB review, even if it is only to indicate that the project is exempt from the human subjects requirement.

#### D. New Performers (Slide 15)

- Certification by Division of Grants and Agreements and Finance
- Indirect Cost Rate

Comments: New Performers are organizations that have never applied to NSF before and, in particular, have not received NSF funding. Please note that there are a set of required processes for such organizations that must be completed before an award can be made. In particular, if your organization does not have a federally negotiated Indirect Cost Rate, you will need to get that before an award is issued. Information about this can be found on the NSF Web site.

#### IV. FAQ and Future Inquiries (Slide 18)

- See ISE Solicitation FAQ Document posted on CAISE Website- <http://caise.insci.org/Blogs/27/53/nsf-ise-solicitation-faqs>
- Visit CAISE website - <http://caise.insci.org/>
- Email CAISE – [info@caise.insci.org](mailto:info@caise.insci.org)
- Email ISE – [drlise@nsf.gov](mailto:drlise@nsf.gov)