

**Staff Response
To the Committee of Visitors (COV) Report
Informal Science Education (ISE) Program
COV Meeting of September 18 & 19, 2008**

**PART A. INTEGRITY AND EFFICIENCY OF THE PROGRAM'S PROCESSES
AND MANAGEMENT**

A 1.1 COV Recommendation:

The COV suggests that more attention be paid to attracting reviewers with greater budgetary skills and, when appropriate, reviewers who could better comment on dissemination and marketing strategies, particularly for multimedia and exhibit based proposals.

Response:

Budget is one of the factors considered by reviewers as they examine the project design. In most cases, panels include CEOs and experienced professionals from the industry who bring budget expertise. Budgets are reviewed to determine whether they are appropriate and whether the project can be carried out with the requested resources. Greater focus on budget occurs during the award negotiation stage when analyzed in detail by experienced Program Officers (POs).

Dissemination and marketing strategies generally are discussed when relevant to the project, although such discussion may not be captured in the Panel Summary. POs will be reminded to make sure that the Summary fully reflects that discussion as appropriate.

A 1.7 COV Recommendation:

The COV recommends that attention should be paid to what appears to be a trend of increasing time for final action for awards.

Response:

DRL is committed to meeting dwell time targets and places continued emphasis on time to award. However, during the period of this COV, NSF programs did not receive final operating plans until late in the fiscal year due to Continuing Resolutions. Those delays meant that pending awards had to be held back.

A 2.2 COV Recommendation:

The COV recommends that ISE continue to strive for geographical, institutional and underrepresented group balance and consider using CAISE to assist in the identification and nurturing of minority reviewers (i.e., CAISE Fellows).

Response:

The program will continue to seek increased reviewer diversity on its panels by recruiting through targeted professional organizations, HBCUs and other MSIs. This effort will require structured activities in addition to outreach by individual POs. As suggested, the services of CAISE will be used in this effort, particularly its Fellows program, which will expand the pool each year. Recruiting Fellows as reviewers will also help to increase the numbers of potential PIs from underrepresented groups. Web conferencing will continue to be used as a cost-effective mean to reach additional EPSCoR states, HBCUs, MSIs, and other potential sources of reviewers from underrepresented groups.

A 2.4 COV Recommendation:

The COV encourages ISE to continue to expand the community of reviewers.

Response:

See response to A 2.2.

A 3.2 COV Recommendation:

In general, a trend towards fewer awards of large amounts in categories such as large film and television is recommended to provide the greatest possibility of success.

Response:

This issue is being considered in the preparation of the revised ISE solicitation.

A 3.4 COV Recommendation:

We do not recommend that every proposal be judged by its transformative potential, and we support funding innovative projects that are not transformative.

Response:

The ISE program follows NSF policy in encouraging the submission of proposals with transformative potential. This policy recognizes that potentially transformative concepts represent one aspect of a project's Intellectual Merit.

Innovation remains one of several key intended goals for the ISE program. Funded proposals are those that make a strong case for significant innovation.

A 3.7 COV Recommendation:

The COV believed that it would be useful to examine the backgrounds of PIs, whether or not they have been previously awarded a grant.

Response:

The program continues to seek ways to expand the pool of ISE PIs. For example, one on-going strategy is to include a proportion of new reviewers on every ISE panel to increase their knowledge of the program and review process. The new ISE solicitation will also address this concern by continuing to encourage capacity building in the field. The requirement for collaboration also serves to bring new potential co-PIs into ISE projects.

A 3.13 COV Recommendation:

The COV encourages NSF to consider more innovative approaches to helping the public understand science.

There is a strong push in the field of literacy toward multiple literacies. The program portfolio includes projects that seek to combine science with new technologies. This trend should be continued.

A persistent measurement problem is concerned with the question: What do people really learn outside of school? In informal learning environments? What difference do we make? More attention to this issue should be considered in the project interim and final reports. In short, more attention should be given to what is learned in broad terms and relative to specific content learning.

Response:

The program will continue to emphasize the requirement for innovation in all aspects of proposals for all types of projects, including greater emphasis on public engagement as well as understanding.

The trend to combine science with new technologies will continue through increasing numbers of proposals being submitted and awarded in the area of cyberlearning.

The measurement issue is important and will continue to be studied. It will be addressed in part in the forthcoming NRC report Learning Science in Informal Environments. The new Framework for Evaluating Impacts of Informal Science

Education Projects [http://caise.insci.org/resources/Eval_Framework.pdf], *along with implementation of the online monitoring system, also represent an expanded effort by the ISE program to obtain more systematic evidence. In addition, the increased emphasis on research through both REESE and ISE projects will add to the knowledge base.*

A 4.1 COV Recommendation:

We recommend that NSF continue to monitor workload, making further investments in the number of ISE program officers as needed. In part, this could take place through increased efforts to recruit “rotators” from the full range of ISE stakeholder groups, rather than simply from universities.

We note the shift in program policy from preliminary proposals (which receive internal review) to letters of intent (which do not). We recommend that the ISE program officers study the results of this shift in terms of workload, proposal quality, and diversity of applications.

Response

Active recruitment of rotators and permanent staff is underway and ongoing. Further, the program is reviewing the preliminary proposal process versus the Letter of Intent process in light of ongoing solicitation revision.

A 4.2 COV Recommendation:

We recommend that the program officers also consider ways of using media for knowledge co-creation and sharing (e.g., wikis, social networking, blogs) to interconnect awardees electronically, as well as to provide e-mentoring opportunities for investigators seeking a grant.

We recommend that the program officers keep in close touch with cyberlearning activities at NSF and work with the personnel making those grants to include informal science education in their portfolio. In general, we recommend increased outreach on the part of ISE program officers to other programs within EHR, given the blurring lines between in-school and out-of-school learning due to the use of new technologies that follow learners around no matter the setting.

Informal science education is the vehicle by which both the general public and students learn the sciences underlying some of the most important decisions our society faces (e.g., what to do about global climate change). We recommend that the ISE program place special emphasis on these “recent” sciences in its portfolio. The current emphasis on nanotechnology is an excellent example.

Response:

ISE will continue to work with CAISE to increase communication, mentoring opportunities, and knowledge sharing among PIs. Related efforts in this area include informalscience.org and ExhibitFiles.org.

ISE is closely tied to other NSF cyberlearning initiatives, in part through an ISE PO who participates in leadership roles in cross-Directorate and cross-Foundation activities in this area. The EHR theme of “Furthering Public Understanding of Science and Advancing STEM Literacy” has, and will continue to, increase connections to other EHR programs. Informal learning also plays a more prominent role within DRL in the most recent REESE and DR-K12 solicitations.

The new ISE solicitation will place greater emphasis on the connection of ISE to critical national and societal issues.

A 4.3 COV Recommendation:

We urge a particular emphasis on diversity in two respects: 1) broadening the range of awardees to include more representatives of diverse groups and 2) prioritizing funding programs that reach underserved populations.

We recommend that the ISE program officers experiment with innovations such as these to determine their effectiveness in capacity building.

Response:

As described in A 2.2, the program will continue to foster diversity in its review panels as one means to build the capacity of potential PIs. It also will work with CAISE to maximize the impact of the Fellows program and to implement other outreach efforts to encourage PIs from underrepresented groups to apply, such as targeted webinars, conference presentations, and similar focused efforts.

PART C. OTHER TOPICS

C.1 COV Recommendation:

ISE should continue to encourage the submission of research-oriented projects and, through outreach activities such as workshops, work to close the gap between researchers and developers.

The COV suggests that, for future competitions, a special category of awards be established to promote research on implementation-oriented projects similar in their purpose and methods.

We urge that ISE encourage awardees to experiment with novel dissemination methods, such as those based on Web 2.0 media, to ensure that project outcomes reach the widest and most appropriate audiences.

Response:

The revised ISE solicitation will encourage the submission of research-oriented projects as a high priority area. Working with CAISE and others, ISE will continue to seek ways to bridge the gap between research and practice through such means as inquiry groups, PI conferences and workshops, and related approaches to foster a shared community of practice.

ISE will consider the suggestion for such a special category of awards in developing the new solicitation.

ISE will continue to place emphasis on the need for awardees to disseminate their work as broadly as possible, including use of Web 2.0 media.

C.3 COV Recommendation:

NSF should attend to increasing the number of new grant recipients and funding more proposals with underrepresented scholars in the PI role.

Response:

As described in A 2.2 and A 4.3, the ISE program will continue to broaden its efforts to increase the numbers of both new PIs and those from underrepresented groups.

C. 4.6 COV Recommendation:

We suggest that more active forms of audience participation be emphasized and encouraged to ISE applicants.

Response

As noted in A 3.13, increasing emphasis will be placed by the program on public engagement, which involves more active forms of audience participation.

C. 4.7 COV Recommendation:

During the cycle being reviewed, the shift was made from pre-proposals to simply filing a "letter of intent." As discussed earlier, during the next 18 months we encourage staff to make an assessment of the impact of that change, considering both impact on ISE staff time (e.g., no time on prelims but far more

on panels and follow up) and on applications (e.g., new vs. repeat institutions, quality of proposal presentation, quality of project concepts.)

Response

Staff and management are pursuing this suggestion for the FY 2009 ISE solicitation, weighing costs and benefits to then inform future revisions.

C.5. COV Recommendation:

The COV suggests that, in initial COV instructions, ISE provide additional guidance in regard to definitions of key concepts, i.e. “innovative”, “appropriate level”, “high risk.”

Response:

For the next COV, the program will provide definitions used by NSF for such terms when they are available.

C.6 COV Recommendation:

While strengths exist, the Committee encourages continued efforts to foster innovation in research approaches that might facilitate greater aggregation of information and lessons learned across subsets of projects (see C8 below for more information on this point).

Response:

See below.

C.8 COV Recommendation:

The COV recommends professional development at future PI meetings to advance understanding of appropriate and articulate data collection and recording methods, both for the annual report "Findings" sections and in order to contribute to the new data reporting system relative to self-identified categories with guidance from the Evaluation Framework categories.

Second, the COV encourages Program Officers to look to experts in data aggregation to maximize the amount and quality of information that might be available through the new data recording system.

We suggest as a funding approach, the funding of clusters of studies organized around a common theme with common data collection protocols, as an approach that may permit individual studies to have stronger generalizability and impact. This approach is proposed as one solution to fostering the greatest possible

impact of research projects within a program area such as ISE. This idea is to solicit a call for proposals funded as a cluster, with one team serving as an "umbrella" study to gather and systematically study data across the subset of projects.

Response:

The ISE program will seek to incorporate professional development related to data collection and recording into the next PI meeting. Special attention will be given to sharing lessons learned by project clusters and enhancing annual project reports.

As part of its efforts to implement and interpret results from the new online monitoring system, the ISE program will consult with experts in data aggregation.

The ISE program will consider the suggested funding of clusters of studies in developing its new solicitation.