

**Staff Response to the
Committee of Visitors (COV) Report**

**Innovative Technology Experiences for Students and Teachers
(ITEST) Program**

COV Meeting of September 12 & 13, 2011

1. QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCESS

1.2 COV Recommendation:

The COV feels that the ITEST program staff should provide the panelists with examples of what it means to be “potentially transformative” within the context of the ITEST program.

Response:

The program communicates examples of transformative work when referring to the National Science Board's merit review criteria and supporting documentation on the NSF website. This is covered in the reviewer guide and is also discussed during the pre-panel webinar and the panel orientation. We will continue to encourage panelists to refer to the NSB review criteria for guidance.

1.4 COV Recommendation:

The program officers should review the written reviews (especially triaged proposals) in order to provide substantive comments to the Principal Investigator.

Response:

For triaged proposals, Program Officers (POs) will continue to encourage reviewers during the panel meetings to edit and enhance their reviews to ensure the PIs receive substantive comments because those triaged proposals may not receive panel summaries. POs are also required to address all reviewer comments as well as provide their own analysis of the proposals in both the review analysis and Program Officer Comments so as to provide critical feedback to the PI.

2. PROGRAM STRUCTURE AND EMPHASIS

2.1a COV Recommendation:

The COV strongly recommends that the program staff consider a number of different funding mechanisms for collecting evidence to support scale-up studies. Examples of possible funding mechanisms include:

- 4 stages of ITEST: strategy, efficacy, research, scale-up
- Front-end of scale-up grants
- Tail-end to existing strategy grants (5-year timeframe)

Response:

ITEST currently includes three funding options: research, strategy, and scale-up projects. The vast majority of awards are made in the strategy category despite efforts to encourage more research submissions. It is evident that the field might benefit from other options given the limited number of scale-up proposals that are ranked as competitive by review panels. The program will explore efficacy studies as funding mechanisms preceding strategy projects as means of supporting the development of scale-up projects.

2.1b COV Recommendation:

ITEST should investigate ways to support longitudinal and retrospective studies that will incorporate adequate evaluation metrics for understanding the strengths and areas for improvement across ITEST projects. The outcomes from such studies should be used to provide direction for future ITEST projects.

Response:

As noted above in the response to Recommendation 2.1a, despite efforts such as conference proposals to develop research agendas supporting the multidisciplinary approach required for ITEST awards, the knowledge building portion of the portfolio remains modest. Given the maturity of ITEST, the program agrees and will explore supporting longitudinal and retrospective studies as part of its research goals and objectives.

2.2 COV Recommendation:

The ITEST program structure does unintentionally limit project designs in some ways. The COV feels that there needs to be an additional element between the “strategies” and “scale-up” categories that would allow projects to gather sufficient data to help them to make a case for scale-up funding.

Response:

The program will consider adopting a support structure for projects that are in between "strategies" and "scale-up" for data gathering purposes as noted in the response to COV Recommendation 2.1a.

4. RESULTING PORTFOLIO OF AWARDS

4.1 COV Recommendation:

The COV recommends that the ITEST program shape the program announcement to encourage submissions across a broader array of fields in a fashion commensurate with the discussion above.

Response:

The program agrees and will expand the program announcement to call for proposals that look across STEM more broadly. The program will encourage the field to submit more proposals in areas that are less represented, such as mathematics. ITEST will work with the Learning Resource Center (LRC) to explore ways to create more synergy between the program and the business community.

4.2a COV Recommendation:

It may be beneficial to establish a longer grant timeline (four- or five-year funding cycles) for certain types of ITEST categories (e.g., strategy, research, and any other future category of awards where this may be appropriate).

Response:

The program will explore ways of providing extended timelines for projects that would benefit from longer funding cycles (e.g., longitudinal studies).

4.2b COV Recommendation:

The COV recommends that NSF explore methods for encouraging the development and validation of more rigorous research and evaluation metrics.

Response:

The program will explore ways to encourage the development and validation of more rigorous research and evaluation metrics.

The program agrees and has made an effort to encourage more proposal submissions that support the development, implementation, and validation of rigorous research and evaluation metrics. The 2011 program solicitation makes a special call for research-focused proposals.

4.3 COV Recommendation:

Whenever possible, panel reviews should gather potentially transformative “highlights” to share with the wider ITEST community.

Response:

Review panelists cannot legally disclose details about submitted proposals due to intellectual property laws. However, ITEST can explore a portfolio review process that identifies "highlights" after the completion of awarded projects that can be disseminated to the wider ITEST community.

4.5 COV Recommendation:

The geographic distribution of Principal Investigators appears to be appropriate; however, there is room for improvement to increase outreach to geographically underrepresented areas.

Response:

The program agrees and will work closely with EPSCoR to reach geographically underrepresented areas through participation in outreach efforts as well as through the recruitment of reviewers. The program will continue to make a concerted effort to expand the representation of potential PIs by recruiting reviewers through work with HRD, ATE, and other programs aligned with community colleges and people with disabilities. ITEST has conducted specific outreach to MSIs, participates in the HRD JAM meeting every spring, and participates in NSF-funded workshops targeting minority-serving institutions.

4.6 COV Recommendation:

Given the goals of the ITEST program, the COV wishes to encourage increasing the distribution of primary awardee institutions to include community colleges, school districts, informal science institutions, and community organizations.

The COV encourages broader engagement and continued development of partnerships as well as synergistic opportunities that include community colleges as a key partner.

Response:

The program has seen a small increase in the number of awards given to school districts, informal science institutions, and community-based organizations. The program understands the importance of working with community colleges as a means of reaching a diverse pool of student participants. This aligns with the strategic mission of EHR. As such, the program will continue to encourage more participation from community colleges in future solicitations. ITEST also presented at the Division of Undergraduate Education (DUE) two-year college symposium held in spring 2011 to promote the program. The program will develop a more strategic relationship with the ATE program because of similar workforce development goals, building on prior efforts.

4.8a COV Recommendation:

The COV encourages the ITEST program to continue funding strategy projects that have robust evaluation designs.

Response:

The program agrees and will continue to encourage the field to implement more rigorous evaluation designs. This aligns with a focus on more rigorous evaluation across EHR and DRL.

4.8b COV Recommendation:

Additionally, ITEST might consider a category within this new research element to encourage efficacy studies that allow strategy projects to explore/investigate the possibilities for scale-up. As previously mentioned, this could result in four stages of ITEST projects: strategy, efficacy, research, scale-up.

Response:

See Response to COV Recommendation 2.1a.

4.8c COV Recommendation:

ITEST-funded programs should be encouraged to integrate elements of data-collection that are appropriate to their practices and might be shared as a product of their efforts.

Response:

The program provides PIs with access to a database of instruments that have been utilized in ITEST projects since the program began in FY2003. Also, the LRC's Management Information System (MIS) is an example of a data collection mechanism that is implemented across projects; the findings from the MIS are reported at annual PI meetings. The LRC also disseminates "lessons learned" briefs which are readily accessible on the ITEST LRC website.

4.8d COV Recommendation:

The COV wishes to encourage efforts to establish collaborations between researchers and strategy-type projects in order to support evidence-based evaluation and research designs.

Response:

The program supports the collaboration of project types through the annual PI summits which are facilitated by the ITEST LRC. The theme for the 2011 PI summit was Collaboration, Communication, and Dissemination: Building a National Community of Practice in STEM Workforce Development. The LRC also facilitates ongoing webinars and convenings that encourage PIs to leverage resources and develop collaborations.

4.9 COV Recommendation:

The COV encourages continued emphasis on the recruitment and support of Principal Investigators from diverse demographic backgrounds with an emphasis on Hispanic Serving Institutions (HSIs).

Response:

See Response to COV Recommendation 4.5. In addition, PIs are not required to self-identify so ethnicity is not always apparent. The program will explore mechanisms to encourage more participation from HSIs not only as lead PIs, but also as co-PIs and subcontractors. The program will encourage the LRC to include a reporting mechanism that includes voluntary identification of PI ethnic background.

4.11a COV Recommendation:

There is a need for longitudinal and retrospective data that will help provide an understanding of the impact of ITEST on STEM career fields.

Response:

See Response to COV Recommendation 2.1b. The program will explore options for how this concern could be included as a focus of the research.

4.11b COV Recommendation:

Utilize common career categories to document the impact of ITEST on career pathways. For example, PISA career awareness and expectations survey items.

Response:

The program will explore mechanisms that will enable the field to document the impact of ITEST on career pathways.

OTHER TOPICS

1. COV Recommendation:

Some of the areas for improvement listed in previous questions include:

- Developing longitudinal and retrospective studies to measure project and ITEST program outcomes/impacts,
- Transitioning to four-/five-year grants for some awards, and
- Creating a new effectiveness and efficacy studies category within the types of awards granted (e.g., strategy, scale-up).

Response:

See Response to COV Recommendation 2.1a.

2. COV Recommendation:

The COV suggests that the ITEST program consider investigating the reasons behind the small number of projects at the elementary levels.

Response:

A particular program focus is on building STEM career awareness among student participants, and many projects target the critical middle school grade level given the research on interest and motivation for this particular age range. It should also

be noted that the first five years of the ITEST program targeted middle and high school students only and that is reflected in the preponderance of awards focusing on these grade levels. There are, however, a growing number of proposal submissions that target lower grade levels. The program will continue to encourage a broader range of strategy and research projects to include elementary level participants.

4. COV Recommendation:

The next COV might benefit from having a more ITEST-specific COV template that takes into account ITEST-specific issues.

Response:

The program will discuss this issue with the NSF office that has general authority for COVs. There may be sections of the COV template that can be modified in this manner.

5.a COV Recommendation:

There was a large amount of information for the COV to process, and the COV feels it may be useful to provide an organizing/filtering tool that would help the members to prioritize the information.

Response:

The ITEST team will work with other staff in EHR and across the NSF to explore alternative approaches to managing COV data and materials that will make the process more manageable and give COV members access to helpful data analytics.

5.b COV Recommendation:

Additionally, it might be helpful to coalesce/combine the smaller documents into a large binder with a table of contents.

Response:

The program staff will work to improve this process so that the materials are available in an organized and convenient manner.