



**Staff Response
To the Committee of Visitors Report
Interagency Education Research Initiative (IERI) Program**

COV Meeting of February 17-18, 2005

Introduction

The Interagency Education Research Initiative (IERI) supports interdisciplinary research on large-scale implementation of promising educational practices and technologies in varied and complex learning environments. The primary goal of IERI is to improve preK-12 student learning and achievement in reading, mathematics and science. The program aims to accomplish this goal by funding STEM technology-based learning interventions that have been proven successful in small, well-controlled studies and, through the design of large-scale implementations of these interventions, prove that they work in real school environments. The IERI program is an interagency program managed by leaders from NSF, the Department of Education’s Institute of Education Sciences (IES) and the National Institutes of Health’s National Institute for Child Health and Human Development (NICHD). The program was initiated as a response to a 1997 report to the President on the use of technology to strengthen K-12 education in the United States from the President’s Committee of Advisors on Science and Technology.

Since FY 2004, the IERI program has been handled separately by the three agencies. The NSF has solicited proposals that address STEM education interventions at the middle and high school levels. The NIH and IES solicit proposals that address preK-5 mathematics and reading interventions, respectively. The total IERI funding within EHR for FY 2006 is \$5.30 million, a decrease of \$6.70 million from the FY 2005 Current Plan. This reduction will allow no new awards in FY 2006. The NSF support of IERI in FY 2004 was \$23 million. A history of multi-agency IERI funding from FY 1999 to FY 2003 is in the table below.

All amounts are committed amounts, not expenditures. There was a \$14 M carry-over from FY 00 to FY 01.

	FY 99	FY 00	FY 01	FY 02	FY 03	Total	Funded Areas	Amount
NSF	\$24 M	\$11 M	\$62 M	\$36 M	\$ 7 M	\$ 140 M	Reading	\$150 M
ED	\$ 4 M	\$12 M	\$20 M	\$17 M	\$ 7 M	\$ 60 M	Math&Science	\$ 60 M
NIH		\$ 5 M	\$ 9 M	\$ 6 M	\$ 7 M	\$ 27 M	Assessment	\$ 17 M

COV Report Recommendations

The IERI COV report has four recommendations summarized below.

1. NSF needs an IERI-like activity that supports the scaling of coherent innovations that have succeeded in impacting learning in several learning contexts.
2. IERI’s current portfolio is maturing and needs a method of establishing and maintaining effective collaborations between university-based innovative programs and large, complex school systems. NSF should establish a cooperative agreement that will

- synthesize findings, provide guidance, and support funded projects in establishing and sustaining these collaborations.
3. The IERI program has developed a cadre of researchers that understand large-scale interventions and who can carry out research, utilize technology, and work collaboratively with multiple stakeholders. NSF should find means to continue to support this community of researchers.
 4. NSF needs to continue to support the leveraging of technology to benefit teachers, students, and researchers.

NSF Response

We strongly concur with all the recommendations with the caveat that funding for NSF is constrained so it may be difficult to fund the full scope of these activities.

NSF is supporting some of the activities related to the above recommendations and has made supporting others a priority for future budgets. These new activities include the Science of Learning Centers (SLC) program, the CI-TEAM program, the Advanced Learning Technologies (ALT) program, and a consolidated effort in Cyberinfrastructure planned for budget consideration in FY 2007. We address the recommendations separately.

NSF needs an IERI-like activity that supports the scaling of coherent innovations that have succeeded in impacting learning in several learning contexts.

Two of the recent SLC awards were for research that, in part, addresses scaling issues. The following descriptions come from an NSF Press Release on these centers:

1. “The Center for Learning in Informal and Formal Environments (LIFE) (University of Washington, Stanford University, and SRI International) will advance and use the scientific understanding of neural processes and principles associated with the cognitive, linguistic and social dimensions of learning in formal and informal environments to guide educational practices.”
2. “The Pittsburgh Science of Learning Center (Carnegie Mellon University, the University of Pittsburgh, and Carnegie Learning) will advance the scientific understanding of robust learning, defined as learning that lasts a long time, transfers to novel circumstances and aids future learning. This goal will be accomplished through a new shared resource, called “LearnLab,” that will enable a new level of experimental rigor in classroom studies of learning.

Both of these awards address IERI-like activities. Because the SLC program is ongoing, it may support additional IERI-like activities. However, the SLC program is not a substitute for the IERI program, and it is unclear where (within NSF or in other federal agencies) this important work will continue. With the demise of IERI we have no sustained way to support research in classrooms, districts, and states on what it takes to scale up interventions.

IERI’s current portfolio is maturing and needs a method of establishing and maintaining effective collaborations between university-based innovative programs and large, complex school systems. NSF should establish a cooperative agreement that will synthesize findings, provide guidance, and support funded projects in establishing and sustaining these collaborations.

As indicated above, the SLC program is ongoing and a center with functions similar to those described in recommendation 2 could be proposed as an SLC center. Given the planned phase out of the program at NSF, it is unlikely that such a cooperative agreement will be established through IERI.

The IERI program has developed a cadre of researchers that understand large-scale interventions and who can carry out research, utilize technology, and work collaboratively with multiple stakeholders. NSF should find means to continue to support this community of researchers.

This cadre of researchers could be supported by SLC activities, but the SLCs address much more than science and mathematics education research, so it is unlikely that a substantial portion of the cadre will be supported. There are other programs in EHR that might provide support for the researchers who have been developed through IERI, but it is unlikely that a program which emphasizes research on large-scale interventions will exist in the near future.

NSF needs to continue to support the leveraging of technology to benefit teachers, students, and researchers.

Several new, relatively small programs at NSF partially address recommendation 4, including ALT and CI-TEAM. The ALT Program Announcement describes the purpose of the program: “Through the Advanced Learning Technologies (ALT) program, CISE and EHR support learning technologies research that (1) enables radical improvements in learning through innovative computer and information technologies, and (2) advances research in computer science, information technology, learning, and cognitive science through the unique challenges posed by learning environments and learning technology platforms. Integrative research approaches that build across disciplines and establish tight linkages among theory, experiment, and design are strongly encouraged.”

The CI-TEAM program may also support such leveraging. From the CI-TEAM announcement: “Collectively, it is anticipated that CI-TEAM awards will:

- Prepare current and future generations of scientists, engineers, and educators to use, support, deploy, develop, and design cyberinfrastructure; and
- Foster inclusion of diverse groups of people and organizations in science and engineering that participate in cyberinfrastructure activities.”

While not directed solely at teachers, students, and researchers, CI-TEAM will support the leveraging of technology to benefit them.

For possible future funding of technology leveraging, EHR has funded a set of 4 workshops for defining Cyberinfrastructure-enabled education research opportunities. The results of these workshops will be a report that will be used in FY 2007 budget planning.

Budget Implications

The existing two education related SLCs are funded at \$10 million/year, the ALT program at \$3 million/year, and the CI-TEAM program at \$2.5 million for the first year, slated to increase

substantially in future years. This does not replace the lack of funding for the IERI program for FY 2006, but it does provide opportunity to continue some of the IERI activities.

Other COV Comments

The COV also commented that coordination with the R&RA Directorates could be improved. The IERI program directors are involved in ongoing coordination activities. The two new programs CI-TEAM and ALT are a result of recent coordination activities that are NSF-wide (CI-TEAM) and bi-directorate (ALT). The IERI program directors will continue to work to involve R&RA directorates more deeply in IERI activities.