

STEM Learning and Research (STELAR) Center @ Education Development Center

Flash talk!
Monday, May 2, 2016

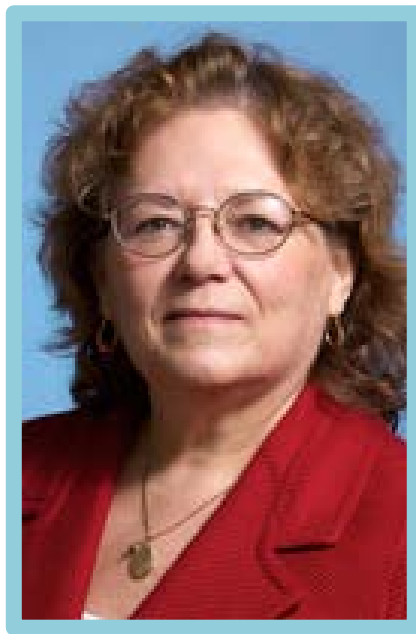


The STELAR team



Sarita

Joyce



Carrie

Melody



Every project has a liaison



Becca



Bernadette



Sarah

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evaluation instruments

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Culturally Responsive Teaching Self-Efficacy Scale (CRTSE)

Instruments

The Culturally Responsive Teaching Self-Efficacy Scale (CRTSE) was developed and administered to a sample of preservice teachers to elicit information from preservice teachers about their self-efficacy in culturally responsive teaching.

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Iowa Tests of Basic Skills (ITBS)

Instruments

The Iowa Tests of Basic Skills (ITBS) offer educators a diagnostic look at how their students are progressing in key academic areas. The ITBS tests are designed for kindergarten through 8th grade students and include nine themes: vocabulary,...

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Culturally Responsive Teaching Outcome Expectancy (CRTOE) Scale

SEARCH FOR RESOURCES

Multiple criteria within a field is an OR condition. Multiple fields are AND conditions.

**RESOURCE TYPE****DISCIPLINE(S)****TOPIC(S)**

- ☐ ACCESSIBILITY
- ☐ COMPUTATIONAL THINKING
- ☐ CULTURAL RELEVANCE, EQUITY, AND DIVERSITY
- ☐ EVALUATION
- ☐ INFORMAL LEARNING AND AFTERSCHOOL
- ☐ PARTICIPANT RECRUITMENT AND RETENTION
- ☐ PARTNERSHIPS AND COLLABORATION
- ☐ STEM CAREER OPPORTUNITIES AND WORKFORCE DEVELOPMENT
- ☐ STEM CONTENT AND STANDARDS
- ☐ SUSTAINABILITY AND SCALE-UP
- ☐ TEACHER PROFESSIONAL DEVELOPMENT AND PEDAGOGY
- ☐ YOUTH MOTIVATION AND INTERESTS IN STEM
- ☐ OTHER

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Science Motivation Questionnaire II (SMQ-II)



Instruments

Provide feedback on the instruments you've used,
and view feedback from your colleagues



Feedback on this instrument from projects that have used it

Ginger Fitzhugh

July 24, 2015 - 8:28pm

Q: In what context did you use this instrument (setting, population, project name)?

Response: We included selected items from the SMQ-II in pre- and post-survey surveys for youth participating in Studio, an afterschool tinkering program serving low-income middle and high school students (grades 6- 12) living in Seattle Public Housing. The majority of the youth are from East African immigrant communities. We also administered the pre- and post-surveys to comparison youth who did not participate in the program.

Q: Did you run into any limitations with this instrument? (Y/N) If yes, please explain.

Response: We originally planned to use two of the subscales from the SMQ-II (intrinsic motivation and career motivation). Partly due to concerns about the length of our survey and the need to assess other program outcomes, we decided to use only a small number of the items (4) from the SMQ-II and instead use another scale to measure students' STEM career interests.

Q: Did this provide you with relevant information to address your research questions? (Y/N) If yes, what question did this answer?

Response: Yes, in part (together with other survey items and additional instruments), the items helped us to address one of our research questions: "Does participation in STEM programming enhancements of the Studio program produce measurable impacts on youths' interests and motivation in STEM?"

PROJECT NAME:

Collaborative Research: Creating a STEM Pipeline for Low Income and Immigrant Youth

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FEATURED NEWS

WHAT'S TRENDING ON STELAR

See what resources are trending on [stelar.edc.org](#)

[Learn more »](#)



Resources
disseminated
by ITEST
projects

Outcomes
curated by ITEST
findings
(Share yours!)

Helping prepare a

STEM workforce.

TEXT SEARCH

ADVANCED SEARCH



ITEST Program
Findings

- + ACCESSIBILITY, CULTURAL RELEVANCE, EQUITY, AND DIVERSITY**
- + EDUCATOR PROFESSIONAL DEVELOPMENT**
- + EVALUATION**
- + STEM CAREER OPPORTUNITIES AND WORKFORCE DEVELOPMENT**
- + STEM CONTENT AND STANDARDS**
- + STEM IN AFTERSCHOOL AND INFORMAL LEARNING**
- + STEM PROGRAM MODELS AND IMPLEMENTATION**
- + YOUTH MOTIVATION AND INTERESTS IN STEM**

The Innovative Technology Experiences for Students and Teachers (ITEST) program was established by the National Science Foundation (NSF) to help ensure the breadth and depth of the Science, Technology, Engineering, and Mathematics (STEM) workforce, in direct response to concerns and projections about the growing demand for and current shortages of STEM professionals in the U.S.

The STEM Learning and Research (STELAR) Center at Education Development Center, Inc., in partnership with the Goodman Research Group, Inc., assists ITEST principal investigators (PIs) and evaluators to design, refine, and evaluate their ITEST projects and to effectively synthesize and disseminate project findings.

These periodic Data Briefs explore results reported by ITEST project leaders in the Management Information System (MIS), which collects information each year from all active ITEST projects about what the projects do, whom they serve, and their successes and challenges.

For more information, questions, or comments:
<http://stellar.edc.org>
stellar@edc.org



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ITEST in Action

The NSF ITEST program has three goals:

- Increase student awareness of STEM and ICT careers
- Motivate students to pursue the education necessary to participate in STEM and ICT careers technology-rich experiences
- Provide students with technology-rich experiences that develop their knowledge of related content and skills (including critical thinking skills) needed for entering the STEM workforce

This databrief provides descriptions of how current ITEST projects implement their projects in order to meet these goals.

Among 68 active projects that reported on their youth goals during the Fall 2015 Management Information System (MIS) survey, 3/4 of projects addressed all three goals, 8 addressed two of the goals and 5 addressed one of the goals.

Who participates in ITEST projects?

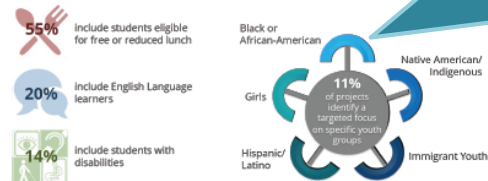
ITEST projects can be designed in many different ways in order to meet the program goals. Almost all projects work directly with youth, and many work with educators as well.



In terms of other significant adults, projects include:



All ITEST projects target youth who are underrepresented in STEM



MOTIVATED PARTICIPANTS

"Enthusiasm of students and teachers, in large part because of our follow-up activities to the summer workshop training (bi-weekly conference calls, quick response help line staffed by students), and the fall and spring conferences."

STRONG TEAM & COLLABORATION

"We have a very dedicated team that pulls together all the aspects of the project from the training to the implementation."

STRONG PARTNERSHIPS

"Dedicated project team, enthusiastic school and industry partners, and a program implementation model that scales flexibly and is sustainable."

This document is published by the STEM Learning and Research (STELAR) Center, a project at Education Development Center, Inc. (EDC), under contract DRL-13-022 from the National Science Foundation. Opinions expressed herein do not necessarily reflect the position of the National Science Foundation, and no official endorsement should be inferred. © 2016 Education Development Center, Inc. All Rights Reserved.



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Publications informed by the MIS!

stellar
Learning and Research Center

ITEST SNAPSHOT 2016

AN OVERVIEW OF NSF'S ITEST PROGRAM

Helping prepare a diverse, skilled, and innovative STEM workforce.

The National Science Foundation (NSF) to address the looming shortage of technology professionals needed to succeed in a science and technology driven world

and past projects across 45 states and the District of Columbia

skills needed to succeed in a science and technology driven world

INNOVATIVE TECHNOLOGY APPLICATIONS,

al modeling, and modern statistics bring paleontology to life

ate interest in scientific research and foster career readiness in related

and hands on biotechnology activities engage middle school

Engineering Technologies provide tools for Native American high schools.

ACROSS THE ITEST PORTFOLIO TEACHERS AND YOUTH PARTICIPATE IN DIVERSE STEM EXPERIENCES

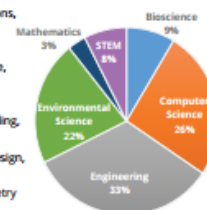
Computer Science: gaming & simulations, multimedia, programming, web development

Bioscience: bioinformatics, biomedicine, nanotechnology, DNA sequencing, neuroscience

Environmental Science: climate modeling, spatial technology

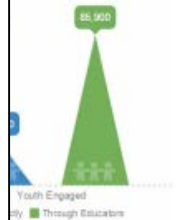
Engineering: aerospace, astronomy, design, robotics, nanotechnology

Mathematics: scientific algebra, geometry



GOALS OF THE ITEST PROGRAM

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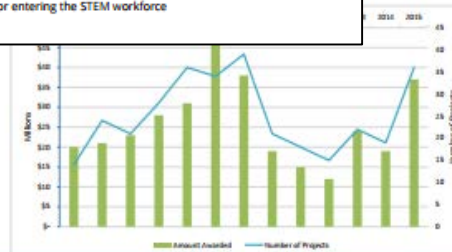
RURAL, SUBURBAN, AND

s many different geographic of their work in urban areas.

middle and/or high school

PROVIDING FUNDING TO AN

about effectively responding to science, technology, engineering,



This document is published by the STEM Learning and Research Center (STELAR), a project at the Education Development Center, Inc. (EDC). STELAR is supported by grant #1312022 from the National Science Foundation. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation. Upon request, this publication is available in alternate formats to provide access to people with disabilities (contact: stellar@edc.org).

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MIS – sample findings

Who participates in ITEST projects?

ITEST projects can be designed in many different ways in order to meet the program goals. Almost all projects work directly with **youth**, and most include **educators** as well.

Youth
95%



Educators
77%



In terms of **other significant adults**, projects include:

STEM
Professionals
35%



Parents &
Caregivers
25%



Guidance
Counselors
4%



ITEST-focused special issues

Journal of Technology and
Teacher Education:
ITEST Special Issue 2010

Journal of Science
Education and Technology:
2016 ITEST Special Issue



STELAR Syntheses



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ITEST Impact on Youth

Monthly Highlight

Sep | 2015

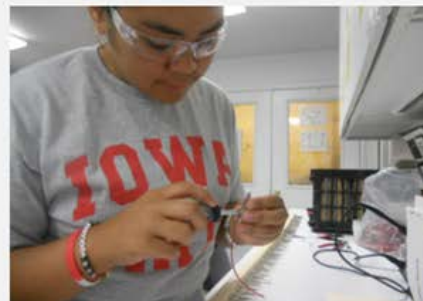
Workforce & Career Education

One hallmark of the ITEST program is its commitment to developing a strong science, technology, engineering, and math (STEM) workforce. This includes helping youth, particularly those from populations currently underrepresented in STEM, learn about and pursue STEM and STEM-related careers.

ITEST projects are informed by career education theory and engage students in experiences that: (1) increase student awareness of STEM and related careers; (2) motivate students to pursue the education necessary to participate in those careers; and/or (3) provide students with technology-rich experiences that develop their knowledge of related content and skills (including critical thinking skills) needed for entering the STEM workforce. Below are selected resources to help you learn more about workforce development in STEM education.

RESOURCES

STELAR Webinar: How to Address Workforce/Career Education in your ITEST Project (EVENT) Attendees joined us in discussing the elements of Career Education that can help frame your ITEST proposal/project and the types of workforce/career education data that projects should be collecting to document students' journeys to STEM careers.



STEM Learning and Research (STELAR) Center @ Education Development Center

How to Address Workforce/Career
Education in your ITEST Project

Thursday September 24th, 2015



Archived Webinar

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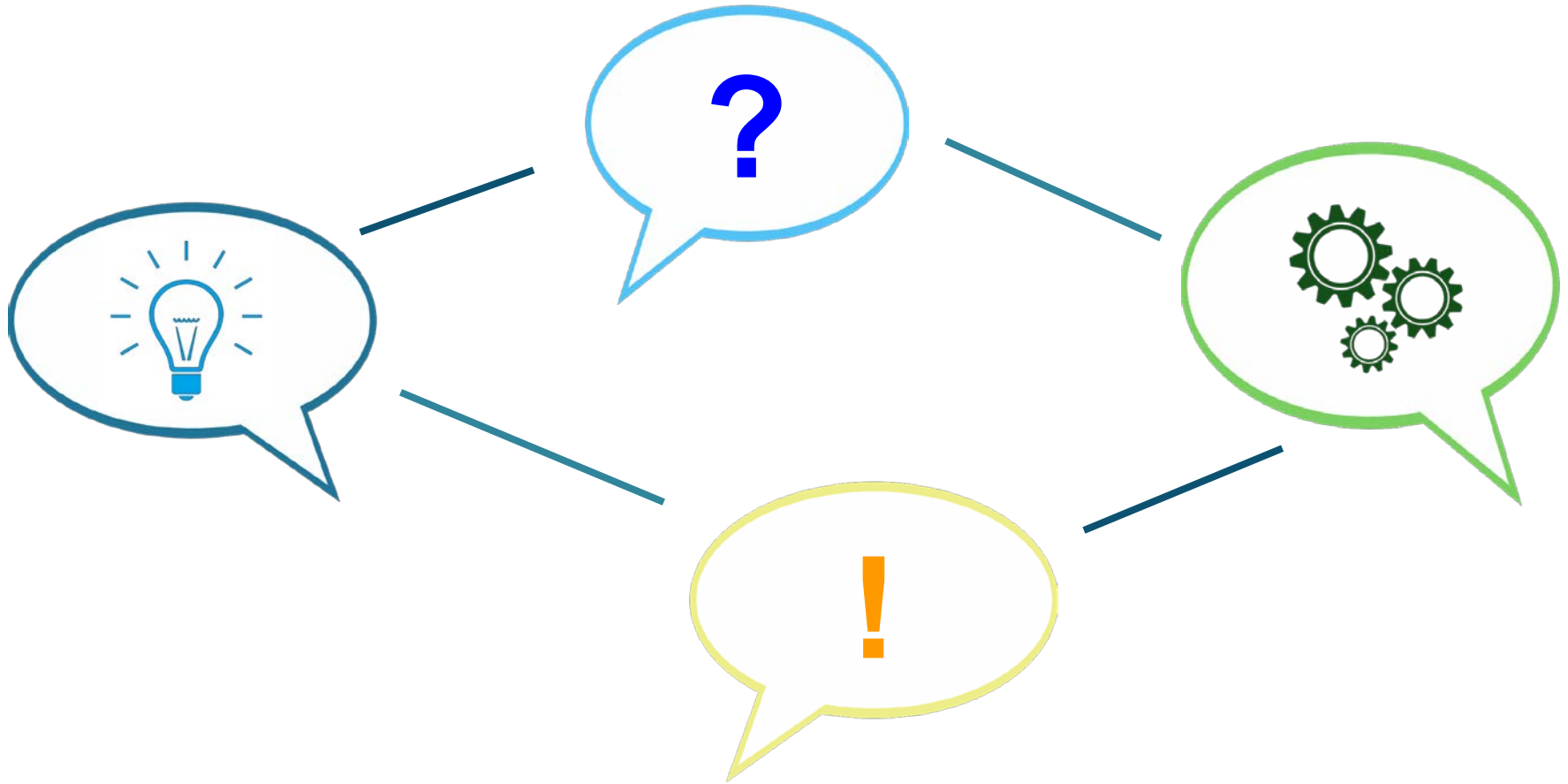
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At the summit: Networking



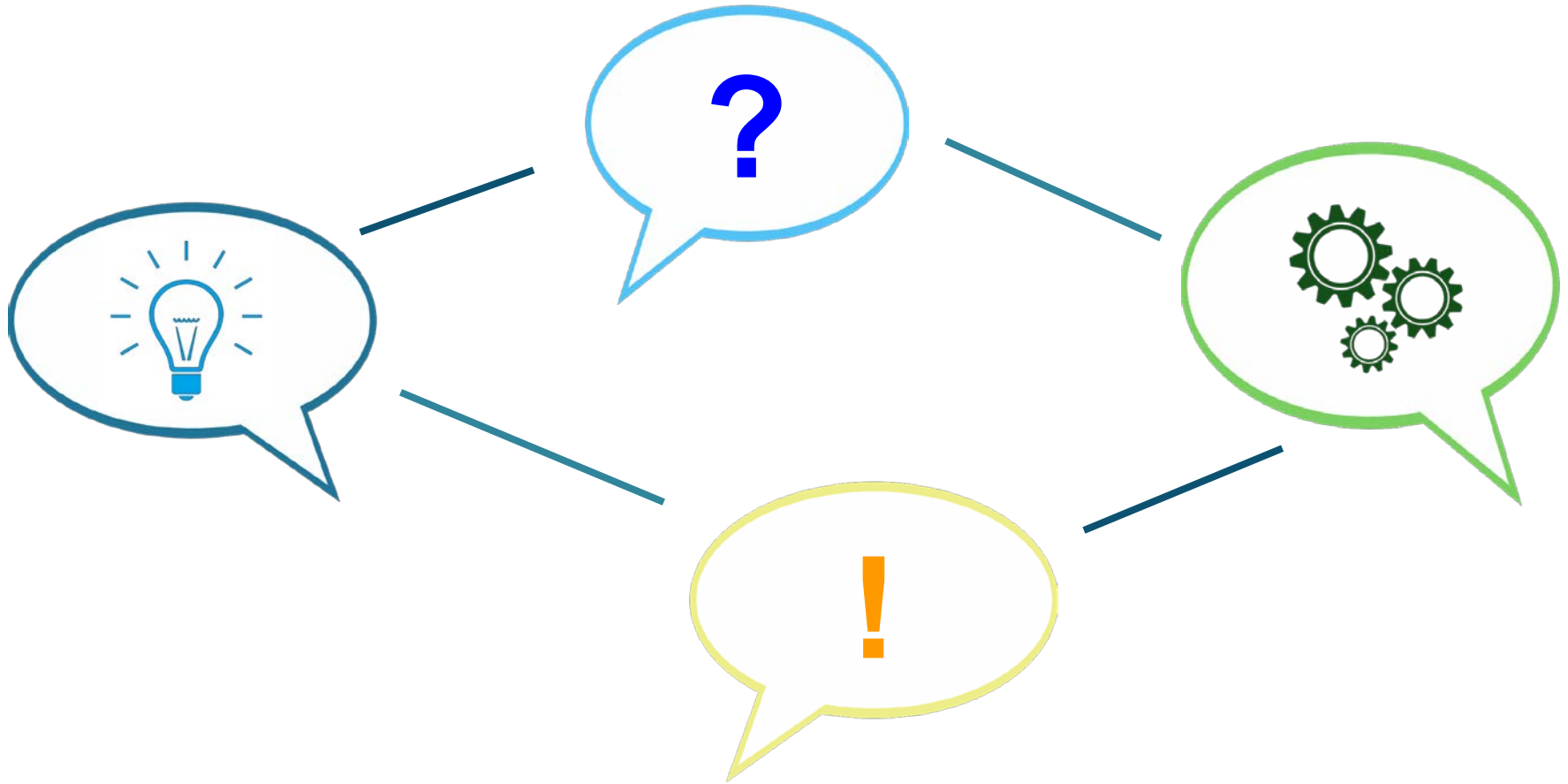
At this Summit: Working groups



Working groups for collaboration and co-creation



Networking with goals in mind



Broadening participation



STEM Learning and Research Center

**Developing NSF ITEST (Innovative Technology Experiences for Students and Teachers) Proposals:
An Awareness Building, Informational Working Meeting**

May 2, 2016 from 12:00 noon – 7:00pm
Weston Arlington Gateway
801 N. Glebe Rd, Arlington, VA 22203
2nd Floor Meeting Rooms

Never had ITEST funding before? Interested in submitting a National Science Foundation ITEST proposal (see NSF 15-599)? Looking for guidance?

As part of its broadening participation effort NSF's STELAR (STEM Learning and Research) resource center is conducting a series of informational working meetings specifically aimed at individuals who have not received prior funding from the ITEST program.

This informational meeting provides opportunities to hear directly from NSF program officers and STELAR staff and to get to meet currently funded ITEST PIs. Participants will leave this meeting with:

- a deeper understanding of the ITEST program, the NSF's proposal development process, and essential elements of high quality ITEST proposals,
- examples of successfully funded ITEST projects,
- access to NSF proposal development resources available through STELAR, and
- answers to your specific questions about submitting proposals to the NSF and ITEST.

Participants who express interest and readiness to develop an ITEST proposal (due August 10, 2016) will be invited to apply to become ITEST "Fellows" who will pilot a proposal development online mentoring course that will guide them through the proposal development process.

Registration Deadline: Friday April 29, 2016
For more information contact: Melody Hachey at
(617) 618-2801 or mhachey@edc.org

REGISTER NOW!
go.edc.org/DC

Events to be held:

- May 12 - University of Northern Arizona, Flagstaff
- May 16 - Science Foundation Arizona, Phoenix

ABOUT ITEST
The National Science Foundation's Innovative Technology Experiences for Students and Teachers (ITEST) program supports the research and development of innovative models for engaging K-12 students in authentic experiences that build their capacity to participate in the science, technology, engineering, and mathematics (STEM) and information and communications technology (ICT) workforce of the future. ITEST projects must include students and may include teachers.

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