



# ITEST E-News

Innovative Technology Experiences for Students and Teachers (ITEST)

Winter 2011

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- [ITEST Engineering Workshops for Educators at ITEEA Annual Meeting](#)

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- [NSF Program Solicitation: Transforming STEM Learning \(TSL\)](#)

## What's new

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### 2010 ITEST AWARDS ANNOUNCED

Learn about the newly awarded projects at <http://itestlrc.edc.org/itest-projects>. Once on the page, click on '2010 New ITEST Awards' below the map.

### DECEMBER 13 PRESENTATION AT NSF - DRL CENTERS: RESEARCH, CAPACITY BUILDING, AND BROADER IMPACTS IN INFORMAL STEM EDUCATION

ITEST LRC PI, Joyce Malyn-Smith, and Co-PI, Siobhan Bredin, participated in a presentation and discussion for staff from across the Foundation interested in learning about resource centers that support three DRL programs targeting informal learners: the ISE Center for the Advancement of Informal Science Education (CAISE), the ITEST Learning Resource Center (ITEST LRC), and the AYS Learning and Youth Research and Evaluation Center (LYREC). During the session, ITEST LRC and other resource center staff shared insights into effective approaches for reaching informal audiences, research and evaluation, building capacity in the field, and expanding broader impacts. Attendees contributed suggestions for effective strategies for education centers to work with and support STEM researchers.

### WEBINAR ARCHIVE | EMBEDDING ASSESSMENT IN STEM LEARNING

This webinar explored types of embedded assessments, how to include them in computer-based activities, and a model system for collecting data for teachers, students, and researchers. Access the archive at: <http://go.edc.org/embedding-assessment-stem-learning-webinar-archive>.

### WEBINAR ARCHIVE | ITEST PROGRAM FINDINGS ON YOUTH MOTIVATION, INTEREST, AND IDENTITY AS IT RELATES TO STEM CAREER DEVELOPMENT

ITEST projects working across the U.S. shared specific frameworks for fostering and assessing youth motivation and STEM career interest. Access the archive and resources at: <http://go.edc.org/itest-program-findings-youth-motivation-webinar-archive>

## Mark your calendar

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### WEDNESDAY, FEBRUARY 23 2:00-3:00 ET | WEBINAR: CURRICULUM DEVELOPED IN THE NSF-FUNDED ITEST AND COSEE PROGRAMS

In this webinar, ITEST (Innovative Technology Experiences for Students and Teachers) Learning Resource Center <http://itestlrc.edc.org> and COSEE (Centers for Ocean Sciences Education Excellence) <http://www.cosee.net/> will showcase curriculum materials on topics ranging from computer game development to engineering design to ecology to ocean sciences. These curricula - designed for middle/high school teachers and students and available online at no charge - encourage and support innovative STEM learning and teaching and have been

## ITEST Community News

- [ITEST Project Partners With AC Transit to Inspire High School Girls to Create Greener Public Transportation Solutions](#)
- [FabLab Project at the Twelfth National Leadership Summit – Video](#)
- [FabLab PIs interview with NPR](#)
- [Game Design as a Pathway to STEM Careers](#)
- [Video Game Design Program Boosts Interest in Science Careers](#)
- [Science Students Gets Stars in Their Eyes](#)

## ITEST projects publications and resources

### Resources

- [Getting Started With Your Evaluation Webinar Archive](#)
- [Making Sense of Your Evaluation Data Webinar](#)
- [Learning Science: Computer Games, Simulations, and Education](#)
- [27th Annual Conference on Distance Teaching & Learning](#)
- [Inspiring Girls to Pursue Careers in Information Technology](#)
- [Forums on Fidelity of Implementation Webinar Archives](#)
- [SMARTR: The MSP2's Virtual Learning Experiences for Youth](#)
- [E-News from the National Girls Collaborative Project \(NGCP\)](#)
- [DRLnet websites](#)

### Contact Us

<http://itestlrc.edc.org/contact>

### Web

<http://itestlrc.edc.org>

### ITEST Facebook

<http://go.edc.org/Facebook-National-ITEST-STEM-LRC>

### ITEST Twitter

adapted through collaboration with partners, educators and students across the ITEST and COSEE education programs.

### Access this webinar

Webinar link: <http://www.learningtimes.net/itestwebcasts.html>

Toll free: 1-888-450-5996

Local: 1-719-955-1371

Participant Access Code: 424447#

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## ITEST EIGHTH ANNUAL SUMMIT | MARCH 3-4, 2011 | ARLINGTON, VIRGINIA

This is by invitation only, but there will be opportunities to participate virtually. These options will be posted in February.

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## Recent and upcoming conferences

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- [AMERICAN EVALUATION ASSOCIATION – EVALUATION 2010 ANNUAL CONFERENCE – ITEST PRESENTATIONS](#)
- [CYBERLEARNING TOOLS FOR STEM EDUCATION \(CYTSE\) CONFERENCE | MARCH 8-9, 2011](#)
- [ITEST AT SOCIETY FOR INFORMATION TECHNOLOGY AND TEACHER EDUCATION | MARCH 7-11, 2011 | NASHVILLE, TENNESSEE](#)
- [ITEST ENGINEERING WORKSHOPS FOR EDUCATORS AT ITEEA ANNUAL MEETING | MARCH 26TH, 2011 – MINNEAPOLIS](#)

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## Opportunities

### NSF PROGRAM SOLICITATIONS:

- [COMPUTING EDUCATION FOR THE 21ST CENTURY \(CE21\)](#)
- [CYBERLEARNING: TRANSFORMING EDUCATION \(CYBERLEARNING\)](#)
- [TRANSFORMING STEM LEARNING \(TSL\)](#)

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## ITEST community news

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### SRI INTERNATIONAL, TERC AND GIRLS INC. PARTNER WITH AC TRANSIT TO INSPIRE HIGH SCHOOL GIRLS TO CREATE GREENER PUBLIC TRANSPORTATION SOLUTIONS

Source: PRNewswire | December, 2010

MENLO PARK, Calif., SRI International, Girls Incorporated of Alameda County (Girls Inc.), TERC, and Alameda - Contra Costa Transit District (AC Transit) announced a new, scalable community action project, "Green Riders: Innovative Transportation Systems," that encourages high school girls to develop clean and green public transportation ideas. Read more at <http://go.edc.org/ac-transit-inspire-high-school-girls>.

**Project:** [Girls InnoVA TE3: Girls Innovating with Technology as Entrepreneurial Environmental Engineers](#)

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### FABLAB PROJECT AT THE TWELFTH NATIONAL LEADERSHIP SUMMIT

YouTube video: Conversation on Children's Engineering (with Karen Caror, Dir. U.S. Office of Educational Technology). View the brief video at <http://www.youtube.com/watch?v=dHcxLMTBoZE>

FabLab's principal investigator Glen Bull's interview with NPR's WHRV, Sarah

[http://twitter.com/ITEST\\_LRC](http://twitter.com/ITEST_LRC)

## About ITEST

\* The ITEST program was established by the National Science Foundation in direct response to current concerns and projections about the growing demand for professionals and information technology workers in the U.S. and seeks solutions to help ensure the breadth and depth of the STEM workforce.

Learn about the program at <http://itestlrc.edc.org/about-itest-lrc>

## Next ITEST Solicitation

A new [solicitation](#) should be available in late Spring, 2011”.

McConnell, “Good Reason,” listen at [http://curry.virginia.edu/class/edlf/701/radio\\_interview.html](http://curry.virginia.edu/class/edlf/701/radio_interview.html)

**Project:** [The FabLab Classroom: Preparing Students for the Next Industrial Revolution](#)

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### GAME DESIGN AS A PATHWAY TO STEM CAREERS

Source: NSTA WebNews Digest | October, 2010

By: Debra Shapiro

At first glance, you might think the students—most of whom come from underserved populations—spending Saturdays or summer days at McKinley Technology High School in Washington, D.C., are just playing video games on their computers. But actually they are acquiring experience in game design, 3D modeling, and animation; some of the high school students stationed nearby are mentoring their peers and younger students. More at

[http://itestlrc.edc.org/news\\_and\\_events/game-design-pathway-stem-careers](http://itestlrc.edc.org/news_and_events/game-design-pathway-stem-careers)

**Project:** [Game Design Through Mentoring and Collaboration](#)

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### VIDEO GAME DESIGN PROGRAM BOOSTS INTEREST IN SCIENCE CAREERS

Source: LiveScience [Technology: Behind the Scenes] – October, 2010

By: Colleen Kearney Rich, George Mason University

"Your game is annoying," one student at the Be the Game summer camp tells another. The boy just laughs. "That's because you can't beat it," he says. This is an exchange between Schuyler Truesdale, a sophomore at Suitland High School in Forestville, Md., and seventh grader Jordan Chandler of Stephen Decatur Middle School in Clinton, Md. Both students participated in a four-week camp focused on . . . View the entire story at:

[http://itestlrc.edc.org/news\\_and\\_events/video-game-design-program-boosts-interest-science-careers](http://itestlrc.edc.org/news_and_events/video-game-design-program-boosts-interest-science-careers)

**Project:** [Game Design Through Mentoring and Collaboration](#)

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### SCIENCE STUDENTS GET STARS IN THEIR EYES

Source: The Washington Post | October, 2010

By: Eric Niiler

When the giant Green Bank Telescope in West Virginia got stuck in one position a few years ago, astronomers collected a big pile of electronic data from one part of the sky but had nobody willing to sift through it. So they did what many of us do for boring chores: They found some teenagers. They set teams of high school science students to scanning thousands of computerized "star plots" in search of pulsars . . . View the entire story at

[http://itestlrc.edc.org/news\\_and\\_events/science-students-get-stars-their-eyes](http://itestlrc.edc.org/news_and_events/science-students-get-stars-their-eyes)

**Project:** [The Pulsar Search Collaboratory](#)

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## ITEST projects publications and resources

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### CHILDREN-PRODUCED DRAWINGS: AN INTERPRETIVE AND ANALYTIC TOOL FOR RESEARCHERS | CHAPTER 12

Author/source: Ganesh, T. G. (in press). *Children-produced drawings: an interpretive and analytic tool for researchers*. In E. Margolis, & L. Pauwels, (Eds.). The Sage Handbook of Visual Research Methods. London, UK: Sage. The chapter offers an extensive literature review and demonstrates how this project used the “draw an engineer” as a means of assessing impact of the

program on longitudinal development of students' perceptions of what engineers do at work.

**Project:** [Learning through Engineering Design and Practice: Using our Human Capital for an Equitable Future](#)

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**ENGAGING STUDENTS IN ENVIRONMENTAL RESEARCH PROJECTS: PERCEPTIONS OF FLUENCY WITH INNOVATIVE TECHNOLOGIES AND LEVELS OF SCIENTIFIC INQUIRY ABILITIES**

Source: Journal of Research in Science Teaching, Vol. 48: 1, 94-116 | January, 2011

By: Ebenezer, J., Kaya, O.N., & Ebenezer, D.L.

The purpose of this mixed-method study was to investigate the changes in high school students' perceptions of fluency with innovative technologies (IT) and the levels of students' scientific inquiry abilities as a result of engaging students in long-term scientific research projects focusing on community-based environmental issues. Read more at:

<http://onlinelibrary.wiley.com/doi/10.1002/tea.20387/abstract>

**Project:** [Translating Information Technology Into Classrooms: Teacher-Student's Research on Lake Erie Ecosystem](#)

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**PLACE-BASED EDUCATION AND GEOGRAPHIC INFORMATION SYSTEMS: ENHANCING THE SPATIAL AWARENESS OF MIDDLE SCHOOL STUDENTS IN MAINE**

Source: Journal of Geography, 109: 5, 213 — 218 | October, 2010

By: Nancy Perkins; Eric Hazelton; Jeri Erickson; Walter Allan (C3 ITEST PI)

ABSTRACT: Spatial literacy is a new frontier in K–12 education. This article describes a place-based introductory GIS/GPS middle school curriculum unit in which students used measuring tools, GPS units, and My World GIS software to collect physical and spatial data of trees to create a schoolyard tree inventory. Read the complete article at: <http://go.edc.org/place-based-education-and-gis>

**Project:** [EcoScienceWorks: Exploring and Modeling Ecosystems Using Information Technology](#)

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**K–12 COMPUTATIONAL LEARNING**

Source: November 2010 | vol. 53 | no. 11 | Communications of the ACM

By: Stephen Cooper (C4 ITEST PI), Lance C. Pérez, and Daphne Rainey  
*Enhancing student learning and understanding by combining theories of learning with the computer's unique attributes.*

In "Computational Thinking,"<sup>14</sup> Jeannette Wing struck a chord that has resonated strongly (generating positive as well as negative responses) with many computer scientists and non-computer scientists. Read the complete article at: <http://itestlrc.edc.org/resources/k12-computational-learning>

**Project:** [An Innovative Approach for Attracting Students to Computing](#)

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**TEACHER PROFESSIONAL DEVELOPMENT THROUGH A COLLABORATIVE CURRICULUM PROJECT – AN EXAMPLE OF TPACK IN MAINE**

Source: TechTrends, Vol. 54(6): 36 - 54 | November/December, 2010

By: Walter Allan, Jeryl Erickson, Phil Brookhouse, and Judith Johnson (C3 PIs)

ABSTRACT: Maine's one-to-one laptop program provides an ideal opportunity to explore conditions that optimize teacher integration of technology-focused

curriculum into the classroom. Read the complete article at:

<http://go.edc.org/ecoscience-techtrends>

**Project:** [EcoScienceWorks: Exploring and Modeling Ecosystems Using Information Technology](#) **TOP**

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### **CLIMATE LITERACY & ENERGY AWARENESS NETWORK (CLEAN) LAUNCHED**

Cohort 3 ITEST PI, Tamara Ledley of TERC, along with partners from NOAA, SERC, and CIRES, launched CLEAN, a reviewed collection of educational resources for educators to use build students' understanding of the core ideas in climate and energy science. View the site at: <http://cleanet.org/>

**Project:** [DataTools: Tools for Data Analysis in the Middle School Classroom](#)

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### **COASTLINES GIS LESSONS AVAILABLE FREE ON SCIENCE-APPROACH.COM!**

Middle school and high school lessons developed for and adapted by the NSF-funded CoastLines project are now available free from the **Science Approach** web site.

**Project:** [CoastLines](#)

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## **Resources**

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### **GETTING STARTED WITH YOUR EVALUATION | WEBINAR ARCHIVE**

*SOURCE:* EVALUATE THE EVALUATION RESOURCE CENTER

This webinar provided information and resources you need to get your evaluation started off on the right track. View the archive at <http://evaluate.org/events/pastevents>

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### **MAKING SENSE OF YOUR EVALUATION DATA – JANUARY 19, 2011 | 1-2:30 PM EST**

Sometimes what seemed crystal-clear when the evaluation of your grant was being planned gets a little fuzzy once the data are actually in. Register at <http://evaluate.org/events/>

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### **LEARNING SCIENCE: COMPUTER GAMES, SIMULATIONS, AND EDUCATION | PREPUBLICATION**

Authors: Margaret A. Honey and Margaret Hilton

At a time when scientific and technological competence is vital to the nation's future, the weak performance of U.S. students in science reflects the uneven quality of current science education. Although young children come to school with innate curiosity.... Read more at

[http://www.nap.edu/catalog.php?record\\_id=13078#description](http://www.nap.edu/catalog.php?record_id=13078#description)

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### **27TH ANNUAL CONFERENCE ON DISTANCE TEACHING & LEARNING | AUGUST 3-5, 2011, IN MADISON, WISCONSIN**

Check the site for details at <http://www.depd.wisc.edu/info/>.

- Proposal **Deadline Approaching:** January 19, 2011 at 4:00 pm--CST

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### **NGCP WEBCAST NCWIT RESOURCES: INSPIRING GIRLS TO PURSUE CAREERS IN INFORMATION TECHNOLOGY | WEDNESDAY, FEBRUARY 9, 2011 - 11:00 AM-12:00 PM PACIFIC**

This webcast will highlight free materials and information for attracting more

girls and underrepresented groups to computing and information technology and share how formal and informal educators are using these resources to strengthen programming for girls. Register:

<http://www.ngcproject.org/events/events.cfm?eventid=186>

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#### **FORUMS ON FIDELITY OF IMPLEMENTATION | WEBINAR ARCHIVES**

The Center for Elementary Mathematics and Science Education at the University of Chicago held a series of on-line forums on fidelity of implementation with a particular focus on STEM education programs. Read more and view the webinar archives at: [http://itestlrc.edc.org/news\\_and\\_events/december-forums-fidelity-implementation](http://itestlrc.edc.org/news_and_events/december-forums-fidelity-implementation)

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#### **SMARTR: THE MSP2'S VIRTUAL LEARNING EXPERIENCES FOR YOUTH: NOW AVAILABLE!**

Designed for and by youth, the SMARTR site contains a series of highly interactive math/science virtual learning experiences for youth. Visit SMARTR today! <http://smartr.edc.org>

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#### **E-NEWS FROM THE NATIONAL GIRLS COLLABORATIVE PROJECT (NGCP)**

View the e-newsletter at

<http://www.ngcproject.org/enewsletters/NationalGirlsCollaborativeProjectE-Newsletter-Jan2011.html>

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#### **DRLNET WEBSITES**

The ITEST LRC is a member of DRLnet, a group of resource centers serving five NSF [Division of Research and Learning in Formal and Informal Settings](#) (DRL)-funded program communities including: [Academies for Young Scientists](#), [Discovery Research K-12](#), [Informal Science Education](#), and [Research and Evaluation on Education in Science and Engineering](#). Each of these websites has information of interest to the STEM education and workforce development community.

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#### **Social Networking**

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**FACEBOOK:** <http://go.edc.org/Facebook-National-ITEST-STEM-LRC>

*The ITEST Learning Resource Center*