

Agenda

TUESDAY, AUGUST 19		
Time	Activity	Location
11:00-12:00	Registration	Registration A
11:30-12:00	Lunch	Madison
12:00-1:00	 Opening Plenary Dr. Joan Ferrini-Mundy - National Science Foundation Sarah Kay McDonald - National Science Foundation David Haury - National Science Foundation 	Madison
1:00-1:30	Collaboration Networking	Madison
1:30-1:45	Break/Transition to Workshops	
1:45-3:00	 Enhancing Project Implementation with Partnerships Irene Lee - GUTS y Girls Alka Harriger – Surprising Possibilities Imagined and Realized through Information Technology (SPIRIT) 	Taylor
	 Implementing High-Quality Research and Evaluation Michael Barnett - Seeding the Future: Creating a Green Collar Workforce Through Learning about Indoor Urban Farming Technologies and Alternative Energy Sources Suzanne Blanc and Dale McCreedy - Integrating Science Into Afterschool: A Three-Dimensional Approach To Engaging Underserved Populations In Science Karen Peterman - SISTERS: Sustaining Interest in Science, Technology, Engineering, and Research in Society 	Taft
3:00-3:15	Break/Transition to Workshops	
3:15-4:30	 Strategies to Broadening Participation Michael D. Smith - <i>The National GEM Consortium</i> Jamika D. Burge - <i>Coalition to Diversity Computing</i> 	Taylor
	 High Quality Research and Evaluation Design Edith Gummer - National Science Foundation Neil Heffernan - Predicting STEM Career Choice from Computational Indicators of Student Engagement within Middle School Mathematics Classes Gerald Knezek, Tandra Tyler-Wood, and Rhonda Christensen - Going Green! Middle Schoolers Out to Save the World (MSOSW) 	Taft
4:30-5:30	Emerging Technology Demonstrations	Madison
5:30-6:30	Break/Transition to Dinner	
6:30	Birds of a Feather Dinner	









WEDNESDAY, AUGUST 20		
Time	Activity	Location
8:00-8:15	Breakfast	Madison
8:15-9:15	Evaluator Meet-Up	Taylor
8:15-8:35	 Welcome & CAISE Overview Jamie Bell - CAISE 	Madison
8:35-9:15	 ITEST Program Officer Panel David Campbell - National Science Foundation Edith Gummer - National Science Foundation David Haury - National Science Foundation Celestine Pea - National Science Foundation 	Madison
9:15-9:30	Break/Transition to Working Groups	
9:30-11:00	Research and Evaluation Design Working Group	Taylor
	Outreach and Dissemination Working Group	Taft
	TBD Developed at Convening Working Group	Truman
11:00-11:20	Break	
11:20-11:45	Working Groups Report Out	Madison
11:45-12:00	Closing Remarks and Lunch	Madison

AISL PI Workshops: (ITEST Convening participants are invited to join the AISL PI meeting on Wednesday afternoon for the following technical assistance workshops)		
Time	Activity	Room
12:30-2:00	Technical Assistance Session I Common Guidelines for Education Research and Development: Edith Gummer, Program Director - <i>National</i> <i>Science Foundation</i>	Thurgood Marshall Ballroom
2:30-4:00	Technical Assistance Session II Grant Management: L. Rashawn Farrior, Grants & Agreement Specialist - <i>National Science Foundation</i>	Thurgood Marshall Ballroom
4:30-6:00	Technical Assistance Session III Evaluation in Informal STEM Education, Kirsten Ellenbogen, CAISE Co-Principal Investigator	Thurgood Marshall Ballroom

Wireless Instructions:

- 1. Check for available wireless signal.
- 2. Connect to: Marriott_Conference. Launch a web browser.
- 4. When prompted, enter the Conference Code Stem2014 and click on "submit".
- 5. The conference Welcome Page will display and you can now browse the Internet.

Convening Evaluation Information:

Following the convening you will receive an email to complete the Convening Survey from STELAR's external evaluator, Goodman Research Group, Inc. Visit the following URL to complete it at any time: <u>http://www.cvent.com/d/g4qfw1</u>. Your feedback is important to us, thank you for taking the time to complete the survey!









Affane Aji, Chadia affane@mytu.tuskegee.edu <i>Innovative Flight Simulation Experiences for</i> <i>Students and Teachers</i> Tuskegee University	Banuelos, Gloria grb@edreap.org <i>Exploring STEM Careers Initiative</i> Research Assessment Evaluation Partners
Barnett, Michael barnetge@bc.edu Seeding the Future: Creating a Green Collar Workforce Through Learning about Indoor Urban Farming Technologies and Alternative Energy Sources Boston College	Beissinger, Janet beissing@uic.edu <i>The Cryptoclub: Extending Learning with Student- Generated Tutorials</i> University of Illinois at Chicago
Bell, Jamie jbell@astc.org CAISE	Blanc, Suzanne sblanc@creative-evaluations.com <i>STEM 3D: Integrating Science into Afterschool,</i> <i>Home, and Community</i> Creative Research and Evaluation
Blanchard, Meg meg_blanchard@ncsu.edu <i>STEM Teams: Promoting Science, Technology,</i> <i>Engineering, and Mathematics Skills, Knowledge,</i> <i>Interest, and Career Awareness through Strategic</i> <i>Teaming</i> North Carolina State University	Bratton, Mandy mbratton@ucsd.edu <i>SISTERS: Sustaining Interest in Science,</i> <i>Technology, Engineering, and Research in Society</i> University of California, San Diego
Burge, Jamika jamika.burge.ctr@darpa.mil Coalition to Diversity Computing	Campbell, David dcampbel@nsf.gov National Science Foundation
Christensen, Rhonda rhonda.christensen@gmail.com <i>Going Green! Middle Schoolers Out to Save the World</i> University of North Texas	Clark, Dr. Julia V. jclark@nsf.gov National Science Foundation









Crocker, Anna apadget@fi.edu <i>STEM 3D: Integrating Science into Afterschool, Home, and Community</i> The Franklin Institute	Darche, Svetlana sdarche@wested.org <i>GLOBE California Academy Program (CAP)</i> WestEd
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jferrini@nsf.gov	miford@nsf.gov
National Science Foundation	National Science Foundation
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Goddard, Kate kate@edlabgroup.org <i>STEM Learning and Research (STELAR) Center</i> EdLab Group	Gummer, Edith egummer@nsf.gov National Science Foundation
Gutierrez, Kris	Hall, Alfred
gutierkd@colorado.edu	alhall1@memphis.edu
<i>oDREAMS: Promoting Computational Thinking</i>	<i>Memphis Virtual STEM Academy at East High</i>
<i>through Game & Simulation Design</i>	School
University of Colorado, Boulder	The University of Memphis
Harriger, Alka	Harriger, Brad
harrigea@purdue.edu	bcharrig@purdue.edu
<i>Surprising Possibilities Imagined and Realized</i>	<i>Teaching Engineering Concepts to Harness Future</i>
<i>through Information Technology (SPIRIT2)</i>	<i>Innovators (TECHFIT)</i>
Purdue University	Purdue University







Enhancing the Quality and Reach of STEM Innovations August 19-20, 2014



Haury, David dhaury@nsf.gov National Science Foundation	Heffernan, Neil nth@wpi.edu <i>Predicting STEM Career Choice from</i> <i>Computational Indicators of Student Engagement</i> <i>within Middle School Mathematics Classes</i> Worcester Polytechnic Institute
Hoadley, Christopher choadley@nsf.gov National Science Foundation	Johnson, Brian bjohnson@wcs.org <i>Bridging the Gap: The Effects of A School-To- Career Approach To Promoting Wildlife Science Careers Among Minority Students</i> Wildlife Conservation Society
Johnson, Julie jjohnson@nsf.gov National Science Foundation	Joseph, Roberto roberto.joseph@hofstra.edu <i>iDesign: Developing Technological Fluency through Culturally-Relevant Game Design</i> Hofstra University
Kermish-Allen, Ruth rallen@islandinstitute.org <i>Energy for ME</i> Island Institute	Khan, Mohammad Javed mjkhan@mytu.tuskegee.edu <i>The Eyes Say it All: Using web page design and</i> <i>eye-tracking technology to learn STEM concepts,</i> <i>research skills, and human factors</i> Tuskegee University
Knezek, Gerald gknezek@gmail.com <i>Going Green! Middle Schoolers Out to Save the World</i> University of North Texas	Larsen, James jamie_larsen@terc.edu <i>SportsLab:2020</i> TERC
Lee, Christine ccox1@memphis.edu <i>Memphis Virtual STEM Academy at East High</i> <i>School</i> University of Memphis, Center for Research in Educational Policy	Lee, Irene lee@santafe.edu <i>GUTS y Girls</i> Santa Fe Institute







Enhancing the Quality and Reach of STEM Innovations August 19-20, 2014



Leonard, Jacqueline jleona12@uwyo.edu <i>Vizualization Basics: Using Gaming to Improve Computational Thinking (UGame-ICompute)</i> University of Wyoming	Lopez-Ferrao, Julio jlopezfe@nsf.gov National Science Foundation
Machado, Aiyana amachado@smm.org <i>Bits-2-Bites: Youth Applying STEM Content and Computational Thinking to Learn about Nutrition and Advocate for Food Justice</i> Science Museum of Minnesota	Malyn-Smith, Joyce jmalynsmith@edc.org <i>STEM Learning and Research (STELAR) Center</i> Education Development Center, Inc.
McCreedy, Dale mccreedy@fi.edu Integrating Science into Afterschool: A Three- Dimensional Approach to Engaging Underserved Populations in Science The Franklin Institute	McDonald, Sarah Kay skmcdona@nsf.gov National Science Foundation
Mitchell, Monica mmitchell@merassociates.com <i>Vizualization Basics: Using Gaming to Improve</i> <i>Computational Thinking (UGame-ICompute)</i> MERAssociates, LLC	Parker, Carrie cparker@edc.org <i>STEM Learning and Research (STELAR) Center</i> Education Development Center, Inc.
Pea, Celestine cpea@nsf.gov National Science Foundation	Peterman, Karen karenpetermanphd@gmail.com SISTERS: Sustaining Interest in Science, Technology, Engineering, and Research in Society; Energy for ME Karen Peterman Consulting, Co.
Peterson, Karen kpeterson@edlabgroup.org <i>STEM Learning and Research (STELAR) Center</i> EdLab Group	Pillai, Sarita spillai@edc.org <i>STEM Learning and Research (STELAR) Center</i> Education Development Center, Inc.









Pollock, Neal neal.pollock@uni.edu <i>Real World Externships for Teachers of Mathematics and Science</i> Center for Social and Behavioral Research	Reider, David david@educationdesign.biz <i>Innovative Technology in Science Inquiry Scale-Up Project (ITSI-SU); COMPUGIRLS Scale-Up</i> Education Design, Inc.
Ristvey, John jristvey@mcrel.org <i>NanoExperiences: Pathways to Workforce</i> <i>Success</i> Mid-Continent Research for Education and Learning	Rodger, Susan rodger@cs.duke.edu <i>Scaling up an Innovative Approach for Attracting Students to Computing</i> Duke University
Saunders, Bonnie saunders@uic.edu <i>The CryptoClub: Extending Learning with Student- Generated Tutorials</i> University of Illinois at Chicago	Sibuma, Bernadette bsibuma@edc.org <i>STEM Learning and Research (STELAR) Center</i> Education Development Center, Inc.
Smith, Michael msmith@gemfellowship.org The National GEM Consortium	Staudt, Carolyn carolyn@concord.org <i>Innovative Technology in Science Inquiry Scale-Up Project (ITSI-SU)</i> Concord Consortium
Sternheim, Morton mort@umassk12.net <i>STEM Digital Images in Geoscience Investigations:</i> <i>Teaching Analysis with Light (STEM DIGITAL)</i> University of Massachusetts	Stewart, Sarah sarah@hezel.com Bridging the Gap: The Effects of A School-To- Career Approach To Promoting Wildlife Science Careers Among Minority Students Hezel Associates
Taylor, Nancy ntaylor@mail.sdsu.edu <i>Exploring STEM Careers Initiative</i> San Diego State University Research Foundation	Tyler-Wood, Tandra tandra.wood@unt.edu <i>Going Green: Middle Schoolers Out to Save the World</i> University of North Texas







Enhancing the Quality and Reach of STEM Innovations August 19-20, 2014



Attendee List

Ward, Anika award@smm.org *Bits-2-Bites: Youth Applying STEM Content and Computational Thinking to Learn about Nutrition and Advocate for Food Justice* Science Museum of Minnesota

Yanowitz, Karen kyanowitz@astate.edu *CSI: Classroom Student Investigations* Arkansas State University









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

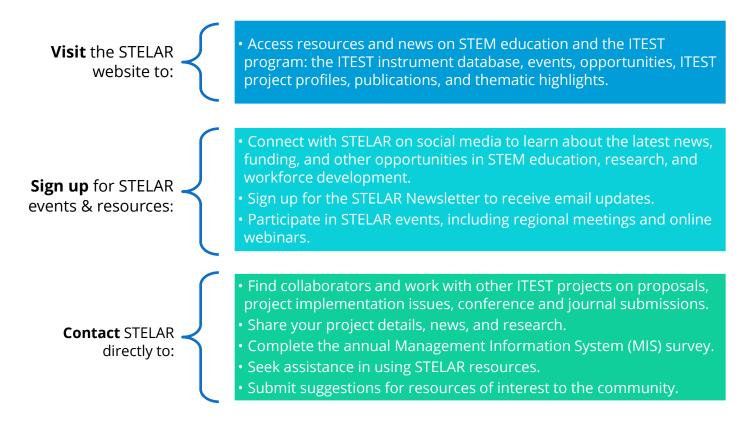
The STEM Learning and Research (STELAR) Center, housed at the Education Development Center, Inc. (EDC), serves the nation's STEM education community by sharing project findings and lessons learned from the NSF's Innovative Technology Experiences for Students and Teachers (ITEST) Program.

Mission and How We Work With ITEST Projects

STELAR builds capacity and magnifies the results of ITEST projects to deepen the impact of the ITEST program by focusing on three core areas:

- 1. **Technical support** that facilitates ITEST projects' success in developing and articulating innovative models for STEM learning environments.
- 2. **Synthesis and dissemination** of ITEST projects' findings nationally in order to inform and influence a national community of other stakeholders.
- 3. **Outreach** efforts to broaden participation in the ITEST community to individuals from organizations and communities not currently represented in the ITEST portfolio.

STELAR provides resources and activities at various stages of project implementation. Below are examples of ways you can benefit from STELAR and participate in the ITEST Community:





The STELAR website provides resources to anyone interested in STEM education, research, workforce development or ITEST projects. Features include:



STELAR Materials – Access content created specifically by the STEM Learning and Research Center. *Project Profiles* – Read descriptions, visit websites, and access materials submitted by current and past ITEST Projects.

Events, Opportunities, & News – Learn about opportunities to present, publish, or fund your work.

Instrument Database – Search the database to find instruments used by current and past ITEST projects in their research.

Thematic Highlights – View a curated set of materials around a theme, such as youth motivation or professional development.

Working Groups – Join groups discussing topics and issues of interest to the ITEST community.

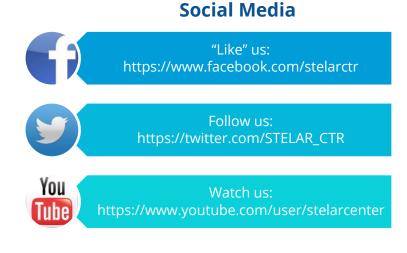
STELAR Team

Leadership: Sarita Pillai, PI, EDC • Caroline Parker, Co-PI, EDC • Karen Peterson, Co-PI, EdLab Group • Joyce Malyn-Smith, Senior Advisor, EDC

Staff:

Becca Schillaci, EDC • Bernadette Sibuma, EDC • Kate Goddard, EdLab Group

Contact us: stelar@edc.org



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Collaboration Networking Facilitation Instructions

These instructions are for your use to facilitate this activity in a variety of settings.

How to Use Collaboration Networking: The purpose of the activity is to introduce participants to other programs and organizations in the room so program participants will be aware of opportunities or resources that can be leveraged. This activity is used at the beginning of events to help participants meet each other.

Instructions to Participants: Share the following instructions with the group.

"The goal of this "collaboration networking" activity is to provide you the opportunity to learn about organizations and programs with the expectation that you may discover a person and/or program that could be a promising collaborator. In <u>two minutes</u>, describe your program to the person across from you. Provide the following information:

- Your name, Organization, ITEST Project
- Organization/Project goals and activities
- Organization/Project needs
- Organization/Project resources

At four minutes a bell will sound and folks move, according to your introductory instructions to learn about another program/meet another person (depending on room set-up).

Activity Timeline: Time for this activity can vary, based on the number of participants and the time you have on your agenda to devote to collaboration. Though it can be time consuming, participants love this activity and want more opportunities to really get to know the folks in the room. We recommend you do at least three rounds (15 minutes), but participants can benefit from five or six rounds, if you can devote the time.

Activity Format: This activity can take place in many configurations: a series of rectangular tables arranged either in a circle or in long rows, forming two lines against a wall, and standing in place. It is ideal for groups of 40 or less but can be implemented with larger groups. Make allowances for any accessibility needs in your instructions.







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Session Descriptions

WORKSHOPS

Enhancing Project Implementation with Partnerships

ITEST projects often involve partnerships with school districts, institutions of higher education, business and industry, community-based organizations and other organizations in order to enhance the development of authentic experiences that serve to build student interest in STEM. This session will describe strategies for developing and maintaining for highly effective partnerships in the context of ITEST projects.

- Irene Lee, GUTS y Girls
- Alka Harriger, SPIRIT

Implementing High-Quality Research and Evaluation

ITEST projects conduct foundational and applied research to address the development, implementation, and dissemination of innovative strategies engaging students to be aware of STEM careers, to pursue formal school-based and informal out-of-school educational experiences to prepare for such careers, and evaluate the outcomes of these programs. In this session attendees will hear successes, challenges and lessons learned, in this regard, from seasoned ITEST PIs, researchers and evaluators.

- Mike Barnett, Seeding the Future: Creating a Green Collar Workforce Through Learning about Indoor Urban Farming Technologies and Alternative Energy Sources
- Sukey Blanc and Dale McCreedy, Integrating Science Into Afterschool: A Three-Dimensional Approach To Engaging Underserved Populations In Science
- Karen Peterman, SISTERS: Sustaining Interest in Science, Technology, Engineering, and Research in Society

Strategies to Broadening Participation

Given the shifting demographics reflected in our current classrooms and in our country, what are effective and productive ways to ensure broadening participation by engaging diverse underrepresented populations in STEM programs and careers? This is one of several key questions that ITEST strategies projects are encouraged to address in their work. In addition, the program is also interested in broadening participation in the ITEST community of practice itself, to include for example MSIs and community colleges. In this session, attendees will hear from individuals who work to broaden participation in a variety of settings.

- Michael D. Smith, The National GEM Consortium
- Jamika D. Burge, PhD, DARPA Taylor







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High Quality Research and Evaluation Design

Building on the earlier workshop on research and evaluation design, this session will focus on research and evaluation design challenges and success strategies.

- Edith Gummer, National Science Foundation
- Neil Heffernan, Predicting STEM Career Choice from Computational Indicators of Student Engagement within Middle School Mathematics Classes
- Gerald Knezek, Rhonda Christensen and Tandra Tyler-Wood, Going Green! Middle Schoolers Out to Save the World (MSOSW)

WORKING GROUPS

Guided by the workshops, STELAR working groups will provide opportunities for ITEST PIs and Evaluators to meet in small thematic/topical groups to design a product that synthesizes findings or recommendations around the theme/topic across multiple ITEST projects.

Attendees will be asked to self-select into one of the following groups:

- Research and Evaluation Design Working Group
- Outreach and Dissemination Working Group
- Developed at Convening Working Group









Emerging Technology Demonstrations

The CryptoClub: Extending Learning with Student-Generated Tutorials

Janet Beissinger and Bonnie Saunders

The CryptoClub website has tools for encrypting, messages to crack, treasure hunts and other activities. Explore the website and learn how students are developing their own tutorials that explain how they solve mathematics and cryptographic problems.

iDesign: Developing Technological Fluency Through Culturally-Relevant Game Design Roberto Joseph

The iDesign Team will demo several game making tools that are part of the game-based curriculum they are currently developing.

Innovative Flight Simulation Experiences for Students and Teachers

Chadia Affane Aji

Experience the low-cost flight simulation environment Tuskegee University is using to enhance how students learn physics and mathematics.

Innovative Technology in Science Inquiry (ITSI-SU)

Carolyn Staudt

ITSI-SU is improving standards-based science instruction through a focus on guided student inquiry using probeware, computational models, and other interactive materials.

NanoExperiences: Pathways to Workforce Success

John Ristvey

Learn how NanoExperiences is preparing students for post-secondary education in STEM career pathways related to nanoscale science and technology (NS&T) through their online job shadow tool.

Predicting STEM Career Choice From Computational Indicators of Student Engagement Within Middle School Mathematics Classes

Neil Heffernan

This research project is developing and utilizing ASSISTments software to study disengagement in middle school mathematics as an influence for choice in STEM careers. Learn more about ASSISTments and how researchers can use it to do their own controlled experiments.

STEM Digital Images in Geoscience Investigations: Teaching Analysis with Light (STEM DIGITAL)

Morton Sternheim

STEM DIGITAL works with middle and high school educators and their students to conduct environmental research aided by the analysis of images from digital cameras, scanners, and the Internet.

Visualization Basics: Using Gaming to Improve Computational Thinking

Jacqueline Leonard

This ITEST project is developing, implementing and studying an intervention for students and teachers in middle schools that includes computational thinking and spatial visualization in the contexts of gaming and robotics.









Working Group Instructions

STELAR working groups provide opportunities for ITEST PIs and Evaluators to meet in small thematic/topical groups to design a product that synthesizes findings or recommendations around the theme/topic across multiple ITEST projects.

Your task today is to define a findings-focused product associated with your topic that you can develop in the upcoming year. Example products include: white paper, journal article, conference presentation, develop a new STELAR resource, host a regional convening, etc.

Working groups will continue to meet beyond the convening. Therefore, during your meeting determine the scope of your planned product (6 months – 1 year) and when and how frequently to check-in (we recommend monthly meetings). The STELAR website has a Working Group section to help facilitate your project activities; information will be shared on how to use this resource during the working group session.

Attendees will be asked to self-select into one of the following groups:

- Research Design
- Outreach and Dissemination
- Topic to be determined at the convening

Working Group Meeting Activities:

- Identify a specific theme
- Determine product and timeline
- Outline work tasks and action items for developing product
- Define roles (including identification of a chair and co-chair), perhaps a smaller group willing to lead the work beyond the convening
- Post notes to the online STELAR Working Group
- Create 1 PowerPoint Slide to share during the Working Group Report Out that includes:
 - Working Group Theme
 - Product
 - Key Dates
 - \circ $\,$ One question you have for convening attendees







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Birds of a Feather Dinner

Reservations have been made at the following restaurants for 6:30pm on Tuesday, August 19. Please sign up for a specific restaurant at the registration table.

Ardeo + Bardeo (American) <u>http://ardeobardeo.com/</u> 3311 Connecticut Ave NW, Washington, DC 20008 (202) 244-6750

Lebanese Taverna (Lebanese) <u>http://www.lebanesetaverna.com/</u> 2641 Connecticut Ave NW, Washington, DC 20008 (202) 265-8681

Medium Rare (American) http://www.mediumrarerestaurant.com/ 3500 Connecticut Ave NW, Washington, DC 20008 (202) 237-1432

Meskerem (Ethiopian) <u>http://meskeremethiopianrestaurantdc.com</u> 2434 18th St NW, Washington, DC 20009 (202) 462-4100

Petits Plats (French) <u>http://www.petitsplats.com/</u> 2653 Connecticut Ave NW, Washington, DC 20008 (202) 518-0018









