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## Plenary Flash Talks

Monday, May 14, 11:30 am – 12:30 pm

Ballroom D

Flash Talks are brief presentations modeled on Ignite Talks (<http://www.ignitetalks.io/>), in which presenters are given 20 slides that automatically advance every 15 seconds. The result is a fast, informative, and fun presentation which lasts just 5 minutes.

This year's Flash Talks will consist of seven presentations by ITEST projects whose work connects to our conference theme, Equity and Access at the Human-Technology Frontier. Presentations will be given in three groups, with time given between each set to allow tables to engage in discussion before hearing from the next group of presenters.

**2018 Plenary Flash Talks** (listed alphabetically by presenter):

**Chief Science Officers: Empowering Youth to Make a Global Impact in STEM**

*Jeremy Babendure, Institute for Learning Innovation*

*Chief Science Officer Brandon*

**The Tuskegee BUILDERS Academy**

*Martha Escobar, Oakland University*

**Changing the Faces of Computing, One Stitch in Time**

*Yasmin B. Kafai, University of Pennsylvania*

**Data Science through Digital Storytelling**

*Seth Marceau, Youth Radio*

**Using Spatial Narratives to Link Community Engagement and Awareness of STEM Careers**

*Beth Schlemper, University of Toledo*

**Design Notebooking and Knowledge Building Practices during Elementary School Engineering**

*Kristen Wendell, Tufts University*

**Think Data, Act Local**

*Cassie Xu, Columbia University*

## Breakout Sessions

### Session 1

Monday May 14, 2018- 2:00-3:30PM

Room	Facilitators and Presenters	Session Descriptions
Ballroom A	<p><b>Stealthy STEM: Unexpected and Alternative On-ramps toward STEM Careers</b></p> <p><b>Facilitator:</b> Ruth Kermish-Allen, Maine Math and Science Alliance</p> <p><b>Presenters:</b> Lauren Birney, Pace University New York Stacey Forsyth, CU Science Discovery Cat Stylinski, University of Maryland Center for Environmental Science</p>	<p>The ITEST community offers many innovative “hooks” to expose youth audiences to STEM, and these often move beyond lab coats and computers. In this session, we will hear from a variety of projects sharing the many unexpected entry points to engage student interests in STEM learning, including but not limited to the arts and addressing community needs or challenges. The session will start with short visual talks from projects and then transition to small table groups to discuss key drivers and themes the field needs to focus on in order to go beyond STEM.</p>
Ballroom B	<p><b>Welcoming Workplaces: How can ITEST Partnerships Contribute to Creating Inclusive, Diverse, and Equitable Organizations?</b></p> <p><b>Facilitator:</b> Eli Tucker-Raymond, TERC</p> <p><b>Presenters:</b> Kenric Kesler, Northern Arizona University Jamie Larsen, Educational Gaming Environments (EdGE) @ TERC Matt Nurse, Nike Explore Team Sport Research Lab (NSRL) Cassie Xu, Lamont-Doherty Earth Observatory, Columbia University</p>	<p>Workplaces in STEM have been historically inhospitable places for people who are othered from the dominant culture in a setting, including women of color, people with disabilities, or those who are simply perceived as different. What can workplaces of the future learn from ITEST projects and what can ITEST projects learn from organizations that foreground diversity and equity? This session will include perspectives from both industry and ITEST projects.</p>
Ballroom C	<p><b>Emerging STEM Evaluation and Research Frameworks</b></p> <p><b>Facilitators:</b> Kristin Bass, Rockman et al Anne Gold, University of Colorado Boulder</p> <p><b>Presenters:</b> Alec Bodzin, Lehigh University Matthew Cannady, Lawrence Hall of Science Bob Coulter, Missouri Botanical Garden Melissa K. Demetrikopoulos, Institute for Biomedical Philosophy Berri Jacque, Tufts University Michael Johnson, Texas A&amp;M University Steven McGee, The Learning Partnership David Uttal, Northwestern University</p>	<p>What is the role of models and theoretical frameworks in ITEST program evaluation and research design? This session will start with an overview of evaluation and research frameworks, followed by five-minute summaries from ITEST project evaluators or researchers describing the frameworks they use for their work, such as STEM identity and STEM ecology.</p>

## Session 1

Monday May 14, 2018- 2:00-3:30PM

Room	Facilitators and Presenters	Session Descriptions
Ballroom D	<p><b>Ethics: How ITEST Projects Do and/or Could Prepare Youth to Work in Spaces that May Not Welcome Them</b></p> <p><b>Facilitators:</b> <i>Rebekah Hammack, Einstein Fellow at NSF</i> <i>Wendy Smythe, AAAS Fellow at NSF</i></p> <p><b>Presenters:</b> <i>Sunggye Hong, University of Arizona</i> <i>Rita Karl, Twin Cities Public Television</i> <i>Merredith Portsmouth, Tufts University</i> <i>Karl Reid, National Society of Black Engineers</i></p>	<p>Current ITEST PIs will describe their work with diverse populations (e.g., girls, minorities, individuals with disabilities), including successful strategies for working with diverse populations and the ethical implications for preparing them to enter the STEM workforce.</p>
Bell	<p><b>Nurturing Work-Based Learning Models to Prepare Learners for Success in Future Work</b></p> <p><b>Facilitator:</b> <i>Kimberly Hauge, National Governors Association</i></p> <p><b>Presenters:</b> <i>Ashleigh McFadden, Advance CTE</i> <i>Dana Westgren, National Governors Association</i></p>	<p>Experiential learning during middle school, high school and postsecondary education is crucial for learners to be fully prepared for the world of work once they have completed their training. This interactive workshop will explore policies related to work-based learning, and focus on how to recruit and prepare employers to provide meaningful experiences to learners.</p>
Whitney	<p><b>New PI Orientation</b></p> <p><b>Facilitator:</b> <i>Becca Schillaci, Education Development Center</i></p> <p><b>Presenters:</b> <i>David Hauray, National Science Foundation</i> <i>John Ristvey, University Corporation For Atmospheric Research</i> <i>Bob Russell, National Science Foundation</i> <i>Jill Zande, Monterey Peninsula College</i></p>	<p>Are you new to the ITEST community? Wondering what resources are available to support your work? This session will provide an orientation to the STELAR Center and the ITEST program. (New PIs are encouraged, but not required, to attend.)</p>

## Session 2

Tuesday May 15, 2018 - 10:15-11:45AM

Room	Facilitators and Presenters	Session Descriptions
<b>Ballroom A</b>	<b>Unresolved Issues: Reflections on Working amidst Tensions and Dilemmas</b>  <b>Facilitator:</b> <i>Caroline E. Parker, Education Development Center</i>  <b>Presenters:</b> <i>June Ahn, New York University</i> <i>Megan Bang, University of Washington College of Education</i> <i>Ingrid Dahl, Education @Scale, Adaptive Path at Capital One</i>	In this workshop, the three plenary panelists will briefly share an unresolved tension in their work as a stepping off point for small group conversations around specific, real-world, current challenges in promoting equity and access for youth to future, emerging workplaces.
<b>Ballroom B</b>	<b>Beyond the STEM Classroom: Families and Parents as STEM Education Partners</b>  <b>Facilitator:</b> <i>Keisha Varma, University of Minnesota</i>  <b>Presenters:</b> <i>Monica Cardella, Purdue University</i> <i>Jamie Clayton, Morehouse College</i> <i>Carole Greenes, Arizona State University</i> <i>Lakshmi Iyer, Appalachian State University</i> <i>Matt Militello, East Carolina University</i> <i>David Uttal, Northwestern University</i>	In this session, participants will share ideas about how to include families and parents in efforts to support STEM education. Presenters will give brief presentations to provide an overview of their ITEST projects. Following the presentations, all participants and presenters will break up into small groups to discuss ITEST specific topics in relation to working with parents and families such as using technology, increasing interest and awareness of STEM careers, and working with underserved populations. Participants will share successes and address challenges they are experiencing as they strive to involve families and parents in their work. The session will end with a brief Q&A panel discussion with youth participants from the Chief Science Officers: A Strategy for Student Awareness and Industry Engagement project, who will share their ideas about including families and parents as STEM education partners.
<b>Ballroom C</b>	<b>Ask an Evaluator</b>  <b>Facilitator:</b> <i>Anne Gold, University of Colorado Boulder</i>  <b>Presenters:</b> <i>Bradford Davey, Technology for Learning Consortium</i> <i>Kevin Glass, EdAdvance</i> <i>Kirk Knestis, Evaluand LLC</i> <i>Rucha Londhe, Research and Evaluation Consultant</i> <i>Kavita Mittapalli, MN Associates, Inc</i> <i>David Reider, Education Design LLC</i>	Who's got questions about evaluation? Bring them to this session, and a team of evaluators will provide their best answers. The session will start with 30 minutes of short (5 minute) presentations of evaluators' favorite evaluation tips or tricks. Presenters will then address audience questions in an open Q&A session.

## Session 2

Tuesday May 15, 2018 - 10:15-11:45AM

Room	Facilitators and Presenters	Session Descriptions
Ballroom D	<b>Incorporating Indigenous Perspectives into STEM Workforce Development</b>  <b>Facilitator:</b> <i>Wendy Smythe, AAAS Fellow at NSF</i>  <b>Presenters:</b> <i>Kathy Berry Bertram and Glenn Markel, Alaska Pacific University</i> <i>Rachel Byington, University of Wisconsin-Madison</i> <i>Laura Conner, University of Alaska Fairbanks Campus</i> <i>Sharon Nelson-Barber, WestEd</i>	This workshop will provide an opportunity for PIs working with Indigenous populations to engage in small group discussions about their projects. Goals of the workshop are to provide a venue for discussion about best practices, project conceptualization, successful strategies, and employing Traditional Ecological Knowledge (TEK) education for STEM education and workforce development in Indigenous communities, in addition to ethical considerations of working with diverse populations.
Bell	<b>Understanding the Value of Informal STEM Programs for Diverse Youth: A Guide for Institutions of Higher Learning</b>  <b>Facilitator:</b> <i>Wendy Martin, Education Development Center</i>  <b>Presenters:</b> <i>James Diamond, Education Development Center</i> <i>Vikram Kapila, NYU Tandon School of Engineering</i> <i>Marc Lesser, Mouse</i> <i>Fan Wu, Tuskegee University</i>	The ITEST community is deeply committed to providing innovative STEM experiences to underrepresented youth. While youth benefit from the experiences, to really move the needle on increasing diversity in the STEM workforce, it will be important for the gatekeepers in higher education, such as admissions officers and faculty, to recognize the value of these experiences when they recruit and admit students, especially since many of the students our projects serve may not have access to the opportunities these gatekeepers typically value. In this session, staff from several different informal projects talk about the ways in which they are helping create pathways to higher education for program participants by engaging with those institutions.
Whitney	<b>Strategies for Culturally-Responsive Evaluation</b>  <b>Facilitator:</b> <i>Kristin Bass, Rockman et al</i>  <b>Presenters:</b> <i>Rachel Becker-Klein, Two Roads Consulting</i> <i>Hilarie Davis, Technology for Learning Consortium</i> <i>Melinda Davis, University of Idaho</i> <i>Monique Jethwani, Columbia University</i> <i>Enos Massie, Massie &amp; Associates</i> <i>Tandra Tyler-Wood, University of North Texas</i>	This session will explore frameworks and methods for working with diverse populations on evaluation projects. Panelists and participants will review and discuss approaches they have used in their ITEST projects, and exchange resources and best practices.

### Session 3

Tuesday, May 15, 2018 - 12:45-2:00PM

Room	Facilitators and Presenters	Session Descriptions
<b>Ballroom A</b>	<b>STEM and Civic Engagement: Connecting Research and Society</b>  <b>Facilitator:</b> <i>Ram Alagan, Alabama State University</i>  <b>Presenters:</b> <i>Karla Eitel, College of Natural Resources, McCall Outdoor Science School, Natural Resources and Society, University of Idaho</i> <i>Ruth Kermish-Allen, Maine Mathematics and Science Alliance</i> <i>Bruce MacFadden, Florida Museum of Natural History, University of Florida</i> <i>Beth Schlemper, Department of Geography and Planning, University of Toledo</i>	This session will begin with five-minute presentations from ITEST PIs focused on how they incorporate civic engagement in their projects, followed by a roundtable conversation that will consider different forms of civic engagement models for STEM projects.
<b>Ballroom B</b>	<b>STEM Education Research: Evidence that Answers Research Questions vs Evaluation</b>  <b>Facilitator:</b> <i>Rebekah Hammack, Einstein Fellow at NSF</i>  <b>Presenters:</b> <i>Jake Grohs, Virginia Tech</i> <i>Berri Jacque, Tufts University</i> <i>Lisa Kaczmarczyk, Lisa Kaczmarczyk Consulting LLC</i> <i>Sarah Kay-McDonald, National Science Foundation</i> <i>Caroline E. Parker, Education Development Center</i>	This session will begin with a presentation by NSF program director Sarah-Kay McDonald who will discuss NSF's perspective on research and evaluation. STELAR co-PI Carrie Parker will provide information about STELAR resources. Current ITEST PIs and evaluators will then describe how they are operationalizing research and evaluation in their projects.
<b>Ballroom C</b>	<b>Planning for SPrEaD Grants</b>  <b>Facilitator:</b> <i>Sarita Pillai, Education Development Center</i>  <b>Presenters:</b> <i>Bradley Barker, University of Nebraska - Lincoln</i> <i>David Haury, National Science Foundation</i> <i>Kirk Knestis, Evaluand LLC</i> <i>Lori Rubino-Hare, Northern Arizona University</i>	Successful Project Expansion and Dissemination (SPrEaD) ITEST Projects are given 3-5 years and up to \$2,000,000 of funding to further the design and development of established interventions that have demonstrated impact. During this session participants will learn how to plan a SPrEaD proposal through presentations from ITEST program officer David Haury and project members from three SPrEaD ITEST projects.

### Session 3

Tuesday, May 15, 2018 - 12:45-2:00PM

Room	Facilitators and Presenters	Session Descriptions
Ballroom D	<b>The Next Generation</b>  <b>Facilitators:</b> <i>Jeremy Babendure, Institute for Learning Innovation</i> <i>Natalie King, Georgia State University</i>  <b>Presenters:</b> <i>CSO Anthony</i> <i>CSO Brandon</i> <i>CSO Mackenzie</i> <i>CSO Mayra</i> <i>CSO Sebastian</i> <i>CSO Shalae</i>	<p>In this student-led session, youth from the Chief Science Officers (CSO) project will present the changing dynamics of learning from a student perspective. CSOs will share their experiences in the program, including working with industry partners, STEM professionals and opportunities that encouraged them to visualize themselves as the future. They will share strategies on how PIs can include students in the planning process and curriculum development, and how PIs can create learning environments that place students in control of their efforts. They will also share how they are scaling up the program, and how projects can benefit from including students as partners for the impact to be more meaningful.</p>
Bell	<b>Preparing the Skilled Technical Workforce of the Future: How ITEST Projects Approach Dispositions and Skills</b>  <b>Facilitator:</b> <i>Joyce Malyn-Smith, Education Development Center</i>  <b>Presenters:</b> <i>Eric Greenwald, University of California-Berkeley</i> <i>Vikram Kapila, New York University</i> <i>Chengcheng Li, University of Cincinnati</i> <i>Victor Minces, University of California-San Diego</i> <i>David Reider, Education Design</i>	<p>To be successful in work at the Human-Technology Frontier, people will need to expand their skill sets and develop dispositions that are conducive to working in dynamic, interdisciplinary teams with machines as fully participating partners in formulating and solving problems. What can we learn about needed skills and dispositions from current research into future work and what can ITEST projects tell us about how they are helping youth develop these skills and dispositions? This session will begin with short presentations which will lead into group discussions.</p>
Whitney	<b>How to Make Data Beautiful: A Hands-On Workshop</b>  <b>Facilitator:</b> <i>Kristin Bass, Rockman et al</i>  <b>Presenters:</b> <i>Kristin Bass, Rockman et al</i> <i>Asha Richardson, Youth Radio</i>	<p>Learn how to present your project's research and evaluation findings with compelling tables, graphs, and infographics. No graphic design experience or expensive software necessary! Presenters will share tips and resources for data visualization, and give participants hands-on experience making data beautiful.</p>



## Expertise Roundtables

Monday, May 14, 4:00 – 5:00 pm

The purpose of this session is to learn about and discuss a specific topic of interest. Each table is dedicated to a topic and hosts up to 10 people. Leaders at each table will take about 10 minutes each to introduce the topic and their research and then lead an inclusive and constructive conversation. The session will last one hour. We ask that participants stay at the same table for the entire session.

Select a table by picking up a ticket for that topic at the registration desk. The number of tickets per table is limited. First come, first served.

<b>Ballroom A</b>	
Preparing Scientists for Work with Educators and Youth	Jerrod Henderson, Cat Stylinski
<b>Ballroom B</b>	
1 Partnerships with Schools	Lauren Birney, Steven McGee
2 Publishing in Journals	Pavlo Antonenko, Edward Fletcher, Xiufeng Liu
<b>Ballroom C</b>	
Methods for STEM Interest	Mac Cannady, Kevin Glass
<b>Ballroom D</b>	
1 Culturally Relevant Curriculum	Alec Bodzin, Victor Minces
2 Culturally Sensitive Technology	Karla Eitel
3 Disrupting Barriers in Low-Income Communities	Lisa Kaczmarczyk, Maggie Renken
4 Equity in Project Implementation	Heidi Carlone, Beth Sappe
5 Industry Partnerships	Ilene Kantrov, Jamie Larsen
6 Inequity in Informal Education	Sunggye Hong, Eli Tucker-Raymond
7 ITEST Collaborations	Jeremy Babendure, Melissa Demetrikopoulos
8 Longitudinal Participant Outcomes	Yue Li, Anna Woodcock
9 Research Dissemination	Nancy Songer, Paola Sztajn
<b>Bell</b>	
1 Art in STE(A)M	Kavita Mittapalli
2 Intergenerational STEM	Rachel Byington, David Uttal
<b>Whitney</b>	
Disrupting Barriers for Underrepresented Groups	Monique Jethwani, John Tillotson

## ITEST Project Expo

During the ITEST Project Expo, participants can explore different project stations to experience demonstrations, interactives, posters, videos, and/or artifacts from project work. The expo will feature the following projects and presenters.

1. **ITEST Proposal Development Course\*** *STELAR Team, Educational Development Center*
2. **2018 NSF STEM for All Video Showcase: Transforming the Educational Landscape\*** *A collaboration of TERC and the six NSF-funded resource centers: MSPnet, CADRE, CIRCL, CAISE, STELAR, and CS for All Teachers*
3. **Ideas: Inventing, Designing and Engineering on the Autism Spectrum** *Wendy Martin, Education Development Center & Jennifer Yu, SRI International*
4. **All Included in Mathematics--Expanding Professional Development Opportunities** *Paola Sztajn, North Carolina State University*
5. **Integrating Computer Science into all Disciplines in Middle School and High School\*\*** *Susan Rodger, Duke University*
6. **Broadening identities for diverse youth in STEM through socioenvironmental problem solving** *Heidi Carlone, University of North Carolina at Greensboro & Lakshmi Iyer, Appalachian State University*
7. **Building Computer Science Identity and Career Interest in Latina High School Girls in an Extended Hackathon Program** *Anna Woodcock, California State University San Marcos & Lisa Kaczmarczyk, Lisa Kaczmarczyk Consulting LLC*
8. **Collaborative Digital Interrupted Case Studies to Build Bioscience Career Awareness** *Berri Jacque, Tufts University*
9. **Lowering Barriers to Engage Students to Pursue STEM+C Degrees & Careers\*\*** *Bruce Segee & Amy Gaspar, University of Maine*
10. **Promoting Robotic Design and Entrepreneurship Experiences\*\*** *Vikram Kapila, NYU Tandon School of Engineering*
11. **Build a Better Book: Engaging Teens in the Design and Fabrication of Multi-Modal Books\*** *Stacey Forsyth & Kathryn Penzkover, University of Colorado Boulder*
12. **Coding to Learn Science\*** *Eric Greenwald, University of California Berkeley*
13. **Demonstration of StarLogo Nova (agent based modeling tool)\*** *Bob Coulter, Missouri Botanical Garden*
14. **Making Music with Physics\*** *Victor Minces, University of California San Diego*

\* Technology Demonstration

\*\* Poster & Technology Demonstration

15. **Nebraska WearTec Project** *Bradley Barker & Neal Grandgenett, University of Nebraska*
16. **Ramping Up to the BODYMODELS Project** *Neal Grandgenett, University of Nebraska & Xin Wang, RMC Research*
17. **Urban Youth Tracking the Biodiversity of Philadelphia\*** *Nancy Songer, Drexel University*
18. **Community-based Problem Solving to Introduce Inclusive STEM Pedagogies** *Richard Wagner, Metropolitan State University Denver & Mariana Enriquez, Program Evaluation Consultant*
19. **Design-based IT Learning Experiences at University of Cincinnati** *Chengcheng Li, University of Cincinnati*
20. **Earth Partnership: Indigenous Arts & Science-Connecting STEM to Native Science** *Rachel Byington, Earth Partnership, UW-Madison*
21. **Empowering Youth to Make a Global Impact in STEM** *Jeremy Babendure, Institute for Learning Innovation*
22. **Engaging Elementary School Aged African Americans, Latinx, and Girls in Summer Engineering Experiences with Rich Contexts** *Monica Cardella, Purdue University*
23. **Flight Simulation Technology to Improve Math and Science Skills for Middle School Students** *Chadia Aji & M. Javed Khan, Tuskegee University*
24. **From Toys to Tools - UAVs in Middle-School Engineering Education** *John Ristvey, UCAR*
25. **Gender Differences in Career Interest in Rural 7th Grade Students** *Tandra Tyler-Wood, University of North Texas*
26. **iDigFossils: Engaging K-12 Students in Integrated STEM via 3D Digitization, Printing and Exploration of Fossils** *Pavlo Antonenko & Bruce MacFadden, University of Florida*
27. **Lens on Climate Change - Engaging Students in Learning About Locally Relevant Climate Change Through Videography** *Anne Gold, University of Colorado Boulder*
28. **MAKING IT STICK!** *Peter Veronesi, The College at Brockport SUNY*
29. **Next Step Learning: Bridging Science Education and Cleantech Careers with Innovative Technologies** *Charles Xie, Concord Consortium*
30. **Preparing Students to be College, Career, and Future Ready** *Edward Fletcher & Victor Hernandez-Gantes, University of South Florida & Thomas Horwood, ICF*

\* Technology Demonstration

\*\* Poster & Technology Demonstration

31. **Project BUILD (Building Using an Interactive Learning Design): Bringing Together Library Staff and Professional Engineers to Facilitate Engineering Activities for y\Youth (Grades 2-5) and Their Caregivers** *Paul Dusenbery & Keliann LaConte, Space Science Institute & Jen Jocz, Education Development Center*
32. **Promoting STEM Interests and Careers Through Families and Museums Exploring** *Gail Jones, NC State University*
33. **SciGirls Strategies** *Rita Karl, Twin Cities PBS SciGirls & Hilarie Davis, Technology for Learning LLC*
34. **Seeding the Future of STEM Researchers through Emerging Agricultural Technologies** *Helen Zhang & David Jackson, Boston College*
35. **Socio-Environmental Science Investigations Using the Geospatial Curriculum Approach with Web Geographical Information Systems** *Alec Bodzin, Lehigh University*
36. **Soft Robotics to Broaden the STEM Pipeline** *Nathan Mentzer, Purdue University*
37. **Strategic Problem-based Approach to Rouse Computer Science (SPARCS)** *Harvey Siy, University of Nebraska at Omaha*
38. **The CryptoClub: Cryptography and Mathematics in the Middle Grades** *Janet Beissinger, University of Chicago*

\* Technology Demonstration

\*\* Poster & Technology Demonstration

# Project Expo

