

# NSF ITEST

## PI & Evaluator Summit 2019

Living, Learning, and Working in the Digital Age

June 13-14, 2019

Alexandria, VA



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**stelar.edc.org**  
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**#ITEST2019**



Education  
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STEM LEARNING AND RESEARCH CENTER

# NSF ITEST PI & Evaluator Summit 2019: *Living, Learning, and Working in the Digital Age*

June 13 - 14, 2019

The Westin Alexandria  
400 Courthouse Square  
Alexandria, VA

### Twitter Event Hashtags

**#ITEST2019 #STELAR2019**

### Detailed Program, Materials, and Logistics

<https://go.edc.org/2019itest>

### Wireless Internet Access (meeting space only)

Password: ITEST2019

Network: WESTIN\_MEETINGROOMS

### The STELAR Center:

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

Website <http://stelar.edc.org/>  
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Email [stelar@edc.org](mailto:stelar@edc.org)



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## Acknowledgments

### MEETING CHAIRS

**Sarita Pillai**, Education Development Center  
**Brianna Roche**, Education Development Center

### STELAR STAFF AT EDUCATION DEVELOPMENT CENTER

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**Becca Schillaci**, Research Associate, bschillaci@edc.org, 617-618-2772

### PROGRAM COMMITTEE MEMBERS

*The meeting chairs and STELAR staff thank the program committee for the innovative ideas and thoughtful input that helped shape the agenda for this meeting.*

**Winnie Black**, Central Susquehanna Intermediate Unit, Center for Schools and Communities

**Melissa K. Demetrikopoulos**, Institute for Biomedical Philosophy

**Stacey Forsyth**, University of Colorado Boulder

**Dana Franz**, Mississippi State University

**Janelle M. Johnson**, Metropolitan State University of Denver

**Lisa Kaczmarczyk**, Lisa Kaczmarczyk PhD Consulting, LLC

**Keliann LaConte**, National Center for Interactive Learning, Space Science Institute

**C. James Liu**, New York Hall of Science

**Kavita Mittapalli**, MN Associates, Inc.

**Sharon Nelson-Barber**, WestEd

**Julie Poncelet**, Julie Poncelet Consulting, LLC

**Helen Zhang**, Boston College

### SPECIAL THANKS

*The meeting chairs, STELAR staff and Program Committee would especially like to thank Amy Wilson-Lopez, Alejandra Sorto, Brenda Carpenter, and the entire NSF ITEST team of Program Officers and staff for their support and guidance that made this meeting possible.*

## National Science Foundation

### Featured Speakers, ITEST Program Officers, and Key Personnel

#### FEATURED NSF SPEAKERS

**Sylvia James**, *Deputy Assistant Director, Directorate for Education and Human Resources*

**Karen Marrongelle**, *Assistant Director, Directorate for Education and Human Resources*

**Elizabeth VanderPutten**, *Acting Deputy Director of the Division of Research on Learning*

#### ITEST PROGRAM OFFICERS

**Amy Baylor**, [abaylor@nsf.gov](mailto:abaylor@nsf.gov)

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**Amy Wilson-Lopez**, [awilsonl@nsf.gov](mailto:awilsonl@nsf.gov)

For general inquiries about ITEST, please write to [DRLITEST@nsf.gov](mailto:DRLITEST@nsf.gov)

#### KEY PERSONNEL

**Brenda Carpenter** *Einstein Fellow*, [brcarpen@nsf.gov](mailto:brcarpen@nsf.gov)

**Daniel McEnrue**, *Grants Management Specialist, Division of Grants and Agreements*

**Sheryl Miller** *Program Specialist*, [smiller@nsf.gov](mailto:smiller@nsf.gov)

## AGENDA

### Wednesday, June 12<sup>th</sup>, 2019 (pre-Summit)

<b>9:00am – 5:00pm</b>	<b>Legislative Visits</b> (by appointment)	<i>Congressional Offices</i>
<b>5:00pm – 7:00pm</b>	<b>Early Registration</b>	Prefunction Hall
<b>6:00pm</b>	<b>Birds of a feather dinner</b> (self-pay)	Prefunction Hall

### Thursday, June 13<sup>th</sup>, 2019

<b>7:30am – 8:30am</b>	<b>Registration and Breakfast</b>	Prefunction Hall
<b>8:30am – 9:00am</b>	<b>Summit Welcome</b> , Karen Marrongelle, NSF	Main Ballroom
<b>9:00am – 9:45am</b>	<b>Keynote</b> , Joshua Brown, Icarus Aerospace	Main Ballroom
<b>9:45am – 10:00am</b>	<b>Tribute to Julio E. López-Ferrao</b>	Main Ballroom
<i>10:00am – 10:30am</i>	<i>Break</i>	<i>Prefunction Hall</i>
<b>10:30am – 11:30am</b>	<b>ITEST 2019 and Beyond: Solicitation Updates</b>	Main Ballroom
<b>11:30am – 12:30pm</b>	<b>Flash Talks</b>	Main Ballroom
<i>12:30 pm – 2:00pm</i>	<i>Lunch</i>	<i>Main Ballroom</i>
<b>1:00pm – 2:00pm</b>	<b>Lunch Panel: Preparing All Learners for the Future of Work</b>	Main Ballroom
<b>2:15pm – 3:15pm</b>	<b>Breakout Session 1</b>	Breakout Rooms
	Technical Assistance Session: Logic Models	Bell
	What Does it Mean to be a Scientist? How Culture, Language, and Gender Affect Equity in STEM	Banneker
	How Technology is Used to Support Relationships with Partners	Wright
	Multiple Pathways to New Collar Jobs	Edison F
	Q&A with NSF Program Officers about 2019 Solicitation ( <i>session also offered in 3rd Breakout</i> )	Edison G
<i>3:15pm – 3:45pm</i>	<i>Break</i>	<i>Prefunction Hall</i>
<b>3:45pm – 4:45pm</b>	<b>Breakout Session 2</b>	Breakout Rooms
	Technical Assistance Session: Research & Evaluation	Bell
	Biohybrid Design: A New Era in Bioethics	Wright
	Removing Barriers to STEM Success: Enhancing 3-D Spatial Skills	Edison F
	The Next Generation – Student Voices in STEM	Edison G
	New Proposal Pitches: ITEST Shark Tank	Banneker
<b>4:45pm – 5:30pm</b>	<b>Setup for Project Expo</b> <b>Working Groups</b>	Prefunction Hall Main Ballroom
<b>5:30pm – 7:00pm</b>	<b>Project Expo &amp; Reception</b>	Prefunction Hall

## AGENDA

**Friday, June 14<sup>th</sup>, 2019**

<b>7:30am – 8:30am</b>	<b>Registration and Breakfast</b>	Prefunction Hall
<b>8:00am – 8:30am</b>	<b>New Awardees Networking &amp; Coffee with Program Officers</b>	Main Ballroom
<b>8:30am – 8:45am</b>	<b>Day Two Orientation</b>	Main Ballroom
<b>8:45am – 9:00am</b>	<b>Remarks from NSF, Sylvia James, NSF</b>	Main Ballroom
<b>9:00am – 10:15am</b>	<b>Keynote Panel: The Future of Work</b>	Main Ballroom
<i>10:15am – 10:30am</i>	<i>Break</i>	<i>Prefunction Hall</i>
<b>10:30am – 11:45am</b>	<b>Project Expo Roundtables (see handout)</b>	Breakout Rooms
<b>12:00pm – 1:30pm</b>	<b>Lunch</b>	Main Ballroom
	<b>Program Officer Meetings (by appointment)</b>	Edison E, F, G
	<b>NSF Grants &amp; Agreements Drop-in Office Hours, Daniel McEnrue, NSF</b>	Banneker
	<b>New PI Q&amp;A Lunch Roundtable</b>	Bell
<b>1:45pm – 2:45pm</b>	<b>Breakout Session 3</b>	Breakout Rooms
	Technical Assistance Session: Meeting the Solicitation-Specific Criteria	Bell
	Building Equity in STEM by Cultivating a Lifetime of Learning Through Lasting Partnerships	Banneker
	How Technology is Used to Promote Student Engagement	Wright
	Ethical and Social Considerations: What would, could, should you have done and why?	Edison E
	Building Capacity to Support & Scale-up ITEST Projects	Edison F
	Q&A with NSF Program Officers about 2019 Solicitation ( <i>session also offered in 1st Breakout</i> )	Edison G
<b>3:00pm – 4:00pm</b>	<b>Closing Reflections &amp; NSF Town Hall, Elizabeth VanderPutten, NSF</b>	Main Ballroom
	<i>end of formal programming</i>	
<b>4:00pm – 5:00pm</b>	<b>Working Groups</b>	Main Ballroom
	<b>Program Officer Meetings (by appointment)</b>	Edison E, F, G

## Keynote Speaker Bios

*Listed in order of appearance*

### **Keynote**

**Joshua Brown** is the Founder, President, and CEO of Icarus Aerospace Inc. The focus of Joshua and his company has been to develop and integrate future concepts to foster a next generation workforce. He is a Doctoral student in Global Security at the American Military University, holds a Master's degree in Intelligence Studies, and a Bachelor's degree in Emergency & Disaster Management. He is a Service-Disabled Veteran who trained and supervised Naval Special Warfare/Special Operations candidates & Aviation Water Survival for pilots and aircrews. Joshua has extensive experience in Military, Law Enforcement, Fire, and EMS including supervisory/instructor roles as well as operational roles. He holds almost three dozen certifications in various disciplines along with copyrights and other pending intellectual property which include being the architect of the UAS for Public Safety IADLEST Certification Program.

### **Day 1 Lunch Panel: Preparing All Learners for the Future of Work**

**Ritu Raman** is an engineer, writer, and educator with a passion for introducing bio-hybrid materials into the toolbox of every inventor. She grew up in India, Kenya, and the United States where she learned to appreciate and thrive in diverse and dynamic environments. Her life experiences have forged the belief that technical innovation can drive positive social change, and this inspires her work to democratize and diversify STEM education around the world. Ritu is currently a postdoctoral fellow in the Langer Lab at MIT, funded by a Ford Foundation Fellowship by The National Academies of Sciences, Engineering, and Medicine. She holds many awards and honors, including being named a Forbes 30 Under 30 awardee for Science, an Innovation and Technology Delegate to the International Achievement Summit, and a L'Oreal USA For Women in Science Fellow.

**Emily Reid** is a computer scientist, educator, and entrepreneur. Emily is the VP of the Open Learning Program at AI4ALL and the owner of E. E. Reid Consulting, LLC, where she advises and creates curriculum for schools and businesses to help them build inclusive computing education programs. Previously, Emily was the founding Director of Education at Girls Who Code, where she was responsible for ensuring that GWC programs were unrivaled in delivering quality computer science education. Before Girls Who Code, Emily was a Senior Cyber Security Engineer at the MITRE Corporation and has published research in computational linguistics and cybersecurity. She speaks and writes on diversity, education, and technology. Emily holds an M.S. in Computer Science from Columbia University and a B.S. in Mathematics from Tufts University.

**Sheryl Sorby** is a Professor of Engineering Education at the University of Cincinnati and was a Fulbright Scholar at Dublin Institute of Technology. She is a former Program Director within the Division of Undergraduate Education at the NSF. She has been an investigator on more than \$13M in external funding and is the author of numerous publications and textbooks. She was the recipient of the Betty Vetter research award through WEPAN for her work in improving spatial skills and ultimately the success of women engineering students. Dr. Sorby was recently elected President-Elect of the American Society of Engineering Education and will begin her term as President in June 2020.

**Day 2 Keynote Panel: The Future of Work**

**Journal Joseph** is the author of *Data & Analytics 4.0: The Future of Work, Privacy and Trust in the Age of Artificial Intelligence*. As a passionate, multi-disciplinary, multilingual, hands-on data & analytics professional, he brings over a decade of experience to the industry and consulting arena. His interest in leveraging the advances in technology in order to harness the power of data began as an Intern at the former ITEST Learning Resource Center (LRC), currently known as STELAR. Being well-versed in both the public and private sectors, Journal advises clients on the most efficient use of technology in addition to data and analytics as it pertains to their business models. He is the founder of Analytics for Lunch: a masterclass series on the business of data & analytics, and the co-founder of Insert Analytics™. Journal Joseph is a graduate of Tufts University, The Fletcher School of Law and Diplomacy (MA, International Economics and Trade), the Department of Urban and Environmental Policy & Planning (Master of Public Policy), the Graduate School of Art and Science (Program Evaluation), and the University of Massachusetts (BA, Technology and Community Media).

**Joylin Kirk** is the Director of Public Sector Partnerships at Burning Glass Technologies. At Burning Glass, she connects community and social services agencies with leading edge labor market data and analytics solutions that improve organizational and systems-level performance, promote economic vitality of businesses and communities, and help individuals take greater control over their own career success. Prior to joining Burning Glass, Joylin was the senior director of mission services for Goodwill Industries International. At Goodwill, she led the career navigation, financial capacity building portfolios with focuses on veterans and military families, and youth services. Joylin has more than 20 years of experience leading programs for behavioral health and nonprofit workforce development organizations. She holds a B.A. in Psychology and Human Resource Management from King's College and an M.S. in Experimental Psychology from State University of New York: College at Cortland.

**James Tracy** is a nationally renowned educator and speaker on the implications of technology inflections for education, workforce development, spirituality, and social policy. With Greg Toppo, he has just completed a book on these issues, under contract with MIT Press. Jim received a Ph.D. in American History from Stanford University as well as an M.B.A. (with a concentration in nonprofit management) and an Ed.M. (in Higher Education Administration) from Boston University. He has been the head of several Independent schools and, most recently, President of the Woodrow Wilson Graduate School of Teaching and Learning, an innovative teacher training college founded in collaboration with MIT. Jim has been a Board Member of the Bostonian Society, an education advisor to Singularity University, a Visiting Fellow at Yale University, a Klingenstein Fellow at Columbia University, an Affiliate of the Berkman Center for Internet and Society at Harvard Law School, and a Board member of Boston University's Pardee Center for the Study of the Longer-Range Future. He is currently Co-Chair of the MassRobotics Work of the Future Committee, a Member of the MassRobotics Advisory Board, a Board member of the Boston edtech convener and accelerator LearnLaunch, a member of the Advisory Board for Boston University's Digital Education Initiative, a member of the MIT Subgroup on Skills and Training (within the MIT Future of Work Taskforce), a Board member of the Massachusetts Association of Nonprofit Schools and Colleges, and a Trustee of the Boston Athenaeum, among other endeavors.

## Plenary Flash Talks

Flash Talks are brief presentations modeled on Ignite Talks (<http://www.ignitetalks.io/>), in which presenters are given 20 slides that will 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 five presentations by ITEST projects whose work connects to our conference theme, *Living, Learning, and Working in the Digital Age*. Presentations will be given in two sets. After each set, tables will to engage in prompted discussion.

### Presenters (listed alphabetically):

#### **Curriculum and Community Enterprise for Restoration of a Keystone Species in New York Harbor**

*Lauren Birney, Pace University*

#### **BUILDERS: Building Unique Inventions to Launch Discovery, Engagement, and Reasoning in STEM**

*Martha Escobar, Oakland University*

#### **LinCT: Linking Educators, Youth, and Learners in Computational Thinking**

*Kathryn Guimond, Science Museum of Minnesota*

#### **Adapting and Implementing a Geospatial High School Course in Career and Technical Education Clusters in Urban Settings**

*Katherine James, Northwestern University*

#### **Peer-Learning Communities to Develop Rural, African American Girls' Computer Science Knowledge and Career Awareness**

*Mohammed Qazi, Tuskegee University*

## Breakout Sessions

### 1<sup>st</sup> Breakout Session: Thursday 6/13 @ 2:15 – 3:15pm

<i>Room</i>	<i>Session Description</i>
Bell	<p><b>Technical Assistance Session: Logic Models</b></p> <p>Although logic models are not required components of an ITEST submission, they are nonetheless helpful for many reasons. They help the PI team articulate and implement the educational and research components of their project in relation to anticipated outcomes; they clearly communicate a coherent rationale behind different project elements to reviewers; and they help the evaluators write useful formative and summative evaluations. In this interactive technical assistance session, which will be facilitated by a senior NSF advisor with expertise in evaluation, PIs and evaluators will explore the elements of a compelling and useful logic model, and they will discuss how logic models can be used to empower projects from their conceptualization to their dissemination. Session participants are encouraged to bring a logic model for a forthcoming project, and they will have opportunities to receive and provide feedback on this model and others based on the principles learned in this session.</p> <p><b>Presenter</b> <i>Sarah-Kay McDonald</i>, National Science Foundation</p>
Banneker	<p><b>What Does it Mean to be a Scientist? How Culture, Language, and Gender Affect Equity in STEM</b></p> <p>How do we navigate learner-centric and culturally responsive strategies to improve equity and access in our projects? Listen to 5-minute presentation each from Keisha Varma, Jaymee Nanasi Davis, and Allison Master who are working with a diverse group of learners that include high school girls, Native Hawaiian and immigrant students and their families in HI, MN, and WA. Their presentations will be followed by short group discussions that will help explore what STEM means to the learners; what skills and knowledge learners bring that already align with STEM; and how to give agency and value to what learners already know. Furthermore, what challenges learners face will also be addressed.</p> <p><b>Facilitators</b> <i>Keliann LaConte</i>, National Center for Interactive Learning <i>C. James Liu</i>, New York Hall of Science</p> <p><b>Presenters</b> <i>Keisha Varma</i>, University of Minnesota <i>Jaymee Nanasi Davis</i>, University of Hawaii - Maui College <i>Allison Master</i>, University of Washington</p>

Wright

**How Technology is Used to Support Relationships with Partners**

Technology is a key part of all ITEST projects, the presentations in this session will focus on the innovative ways that technology can be used to cultivate, support, and sustain relationships with project partners. Attendees will learn about the innovative use of technologies in presenting projects, have the opportunity to discuss the role of technology in their work, and think about how they can leverage technology to solidify partnerships in future work.

**Facilitator**

*Helen Zhang*, Boston College

**Presenters**

*Jennifer Jocz*, Education Development Center

*David Reider*, Education Design, INC.

*Lori Rubino-Hare*, Northern Arizona University

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Edison F

**Multiple Pathways to New Collar Jobs**

What will the careers of the future look like, and how do we best prepare students for these “New Collar Jobs?” This session focuses on the growing sector of technology-based careers often attained through non-traditional educational pathways. Participants will hear brief presentations from projects highlighting workforce development initiatives, then will break into small groups to discuss innovations and challenges in meeting the needs of tomorrow’s workforce, including frameworks and practices that support increased engagement with underrepresented groups.

**Facilitator(s)**

*Stacey Forsyth*, CU Science Discovery

*Janelle Johnson*, Metropolitan State University of Denver

**Presenters**

*Berri Jacque*, Tufts University Medical School

*Connie Flanagan*, University of Wisconsin Madison

*Kristin Searle*, Utah State University

*Elizabeth Radday*, EdAdvance

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Edison G

**Q&A with NSF Program Officers about 2019 Solicitation**

This session provides attendees the opportunity to meet with NSF Program Officers to ask questions about the upcoming 2019 ITEST Solicitation. The session will be set up in an informal town-hall format. Note: this session is being offered twice, during Breakout Sessions 1 and 3 in order to allow attendees multiple opportunities to attend.

**Facilitator**

*Becca Schillaci*, STELAR

**Presenters**

*Michael Ford*, National Science Foundation

*Ann Rivet*, National Science Foundation

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**2<sup>nd</sup> Breakout Session: Thursday 6/13 @ 3:45 – 4:45pm**

<i>Room</i>	<i>Session Description</i>
Bell	<p><b>Technical Assistance Session: Research and Evaluation</b></p> <p>In this interactive technical assistance session, program officers will explain distinctions between evaluation and research in light of the new ITEST solicitation. The new solicitation encourages PIs to upload copies of evaluation reports as part of annual and final reports. This session will review the components of a quality evaluation plan and specify what might be included in evaluation reports. Discussion will also describe elements of a quality research plan, which is at the heart of all successful ITEST proposals. To prepare for this session, participants are encouraged to bring a 1-page outline of a research plan, describing the research question, data sources, and proposed analyses; as well as a 1-page outline of an accompanying evaluation plan, describing the types of questions the evaluators will ask, the evidence that will be gathered in relation to those questions, and how this evidence will provide formative feedback to the project efforts.</p> <p><b>Presenters</b>  <i>Karen King</i>, National Science Foundation  <i>Michael Ford</i>, National Science Foundation</p>
Wright	<p><b>Biohybrid Design: A New Era in Bioethics</b></p> <p>The emerging field of biohybrid design, or building machines with part-biological and part-synthetic components, is interesting because it harnesses the dynamic adaptive behavior of biological materials to produce machines capable of complex functional behaviors such as self-assembly, self-maintenance, and self-healing. This concurrently raises questions around the bioethics of building such machines, and the regulatory guidelines that must accompany their design, manufacture, and implementation. This workshop will introduce biohybrid design, present a few vignettes asking ethical questions related to this field, and drive an active and engaged discussion on how an interdisciplinary groups of scientists, educators, and policy makers can guide the safe, effective, and ethical use of this technology in the future.</p> <p><b>Presenter</b>  <i>Ritu Raman</i>, Massachusetts Institute of Technology</p>
Edison F	<p><b>Removing barriers to STEM Success: Enhancing 3-D Spatial Skills</b></p> <p>This workshop will begin with a brief presentation regarding the need for and impact of spatial skills training for success in STEM. The remainder of the session will include hands-on practice with a module from a curriculum designed to help students improve their spatial skills. The session will conclude with a brief discussion among participants regarding models for curricular implementation.</p> <p><b>Presenter</b>  <i>Sheryl Sorby</i>, University of Cincinnati</p>

Edison G

**The Next Generation: Student Voices in STEM**

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.

**Facilitators:**

*Jeremy Babendure*, Institute for Learning Innovation Research Fellow and SciTech Institute Executive Director

*Kelly Greene*, COO SciTech Institute and International Director of Student Success

**Presenting Youth from Chief Science Officers:**

*Caillou, Marissa, Moira, and Shalae*

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Banneker

**New Proposal Pitches: ITEST Shark Tank**

Members of the ITEST community will give 5-minute “Shark Tank” style pitches of their ITEST project ideas to get valuable feedback from the ITEST community. Presenters will make their pitches in front of a panel of judges and an audience of their peers. Following each pitch, presenters will receive feedback from the judges. The session will conclude with informal Q&A from the audience.

**Facilitator**

*Brianna Roche*, STELAR

**Judges**

*Monya Ruffin*, National Science Foundation

*Robert Russell*, National Science Foundation

*Chia Shen*, National Science Foundation

*Michael Steele*, National Science Foundation

**Presenters**

*Joselina Cheng*, University of Central Oklahoma

*Alec Bodzin*, Lehigh University

*Eugene Cordero*, San Jose State University

*Mary Dussault and Erika Wright*, Smithsonian Astrophysical Observatory

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**3<sup>rd</sup> Breakout Session: Friday 6/14 @ 1:45 – 2:45pm**

<i>Room</i>	<i>Session Description</i>
Bell	<p><b>Technical Assistance Session: Meeting the Solicitation-Specific Criteria</b></p> <p>This technical assistance session addresses ITEST’s solicitation-specific review criteria, which review panels must consider in addition to the NSF-wide merit review criteria. These criteria represent a significant change from the previous solicitation in the sense that they emphasize the importance of strengths-based approaches to innovative technologies, instructional strategies, and research designs in projects whose goals are to broaden participation. In this session, led by two ITEST program officers, participants will read brief mock examples of educational activities and research plans that might be found in proposals, and they will evaluate and discuss these examples in relation to the solicitation-specific review criteria. This session is designed to increase PIs’ capacity to engage diverse populations in educational and research activities in rigorous and responsive ways. Given that ITEST is a program explicitly designated for broadening participation, this session will provide practical insights on communicating plans for working with groups who are underserved and underrepresented in STEM fields.</p> <p><b>Presenters</b>  <i>M. Alejandra Sorto</i>, National Science Foundation  <i>Amy Wilson-Lopez</i>, National Science Foundation</p>
Banneker	<p><b>Building Equity in STEM by Cultivating a Lifetime of Learning Through Lasting Partnerships</b></p> <p>Diverse community-based, government, and industry partnerships are essential for sustaining the impacts of STEM learning. Presenters Josie Cheng, Winnie Black, Martin Reardon and Anne Haugh will showcase innovative ways humans and technology converge, interact, and engage with young STEM learners in OK, NC and PA. Their 5-minute project overviews will provide examples of how learners are developing transferable technological skills to prepare them for an evolving workforce. Their presentations will be followed by group discussions that will help explore the challenges in bringing technologies to various audiences and generate strategies for engaging partners to achieve equity goals.</p> <p><b>Facilitator(s)</b>  <i>Kavita Mittapalli</i>, MN Associates, Inc.</p> <p><b>Presenters</b>  <i>Joselina Cheng</i>, University of Central Oklahoma  <i>Winnie Black</i>, Central Susquehanna Intermediate Unit - Center for Schools and Communities  <i>Martin Reardon</i>, East Carolina University  <i>Anne Haugh</i>, Duplin County Schools</p>

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Wright

**How Technology is Used to Promote Student Engagement**

Technology is a key part of all ITEST projects, the presentations in this session will focus on the innovative ways that technology can be used to attract, sustain, and deepen student engagement. Attendees will learn about the innovative use of technologies in presenting projects, have the opportunity to discuss the role of technology in their work, and think about how they can leverage technology to engage and retain students in future work.

**Facilitator**

*Dana Franz*, Mississippi State University

**Presenters**

*Megan Littrell*, CIRES Education and Outreach

*Stacey Forsyth*, University of Colorado-Boulder

*Keliann LaConte*, National Center for Interactive Learning, Space Science Institute

Edison E

**Ethical and Social Considerations: What would, could, should you have done and why?**

This interactive session will engage participants of all experience levels in exploring how they can proactively incorporate ethical and social considerations into their ITEST projects. This session will go beyond content and mechanics and include the perspective of process.

**Facilitators**

*Melissa Demetrikopoulos*, Institute for Biomedical Philosophy

*Lisa Kaczmarczyk*, Lisa Kaczmarczyk PhD Consulting, LLC

*Sharon Nelson-Barber*, WestEd

Edison F

**Building Capacity to Support & Scale-up ITEST Projects**

This session will explore current and alternative approaches to building capacity in ITEST projects, including ways to scale-up. Following three 5-minute ignite-style presentations, participants will engage in an interactive discussion (called “World Cafe” activity) in order to share and harvest insights organized around three guiding questions: what are current approaches to capacity building? What alternative approaches should be considered? How to scale-up and sustain ITEST projects to support more equitable, localized ownership, and foster deeper partnerships to amplify outcomes?

**Facilitators**

*Julie Poncelet*, Center for Social Innovation

*Becca Schillaci*, STELAR

**Presenters**

*Janelle Johnson*, Metropolitan State University of Denver

*James Van Haneghan*, STEMWorksLLC

*Moses Ochanji*, California State University San Marcos

*Jennifer Yu*, SRI International

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Edison G

**Q&A with NSF Program Officers about 2019 Solicitation**

This session provides attendees the opportunity to meet with NSF Program Officers to ask questions about the upcoming 2019 ITEST Solicitation. The session will be set up in an informal town-hall format. Note: this session is being offered twice, during Breakout Sessions 1 and 3 in order to allow attendees multiple opportunities to attend.

**Facilitator**

*Sarita Pillai*, STELAR

**Presenters**

*Michael Ford*, National Science Foundation

*Ann Rivet*, National Science Foundation

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## 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. STELAR Collaboration Station: Team with the ITEST Community on Several Upcoming Opportunities for Dissemination.** *The STELAR Team, Educational Development Center*
- 2. A Community-Based Approach to Broadening STEM Access to STEM Career Pathways**  
*Josh Kumin, Janelle M. Johnson, Metropolitan State University of Denver*
- 3. American Innovations in an Age of Inventions** *Tandra L. Tyler-Wood, University of North Texas*
- 4. An Examination of How Participating in an Online Social Learning Environment Affects Students' STEM Identities and Science Knowledge\*** *Keisha Varma, University of Minnesota*
- 5. AR Girls: Using Augmented Reality to Engage Art-Oriented Girls in Science Communication** *Cathlyn (Cat) Styliniski, Ruth Kermish-Allen, University of Maryland Center for Environmental Science*
- 6. Assessing STEM Career Interests to Adapt Mathematics Instruction** *Candace Walkington, Matthew Bernacki, Southern Methodist University*
- 7. Building Enhanced Scientific Thinking through Modeling Ecosystems** *Bob Coulter, Missouri Botanical Garden*
- 8. Building STEM Career Aspirations Through Enhanced Family Science Capital** *M. Gail Jones, NC State University*
- 9. Children's Commenting and Debugging when Playing a Tangible Coding Program** *Laura Bofferding, Mahtob Aqazade, Purdue University*
- 10. Coding Science Internships: Enabling Broader Participation in Computer Science\*** *Ari Krakowski, Eric Greenwald, Lawrence Hall of Science - UC Berkeley*
- 11. Computer-Assisted Video Analysis Methods for Understanding Underrepresented Student Participation and Learning in Collaborative Learning Environments** *Marios S. Pattichis, Carlos LópezLeiva, Sylvia Celedón-Pattichis, University of New Mexico*
- 12. Connected STEM - Promoting STEM Education through Connected Devices and Building Automation to Learn Science** *Michael Johnson, Texas A&M*
- 13. Designing an Educational Game to Connect Students to Genetics: Molecular-Level Representations** *Frieda Reichsman, The Concord Consortium*

\* Technology Demonstration

\*\* Poster & Technology Demonstration

- 14. Developing Digital Makers in the Coding Makerspace to Include Boys of Color in Computer Science Learning and Cybersecurity Workforce Development** *Dr. Phillip Eaglin, Dr. Tom McKlin, Changing Expectations*
- 15. Engaging Minoritized Students in STEM Learning via Community Cultural Wealth** *Deena Khalil, Meredith Kier, Adrian Wayne Bruce, Angel Miles Nash, Howard University*
- 16. Fly High Your Math and Science Skills Using a Flight Simulator\*** *Dr. Chadia A. Aji, Dr. M. Javed Khan, Tuskegee University*
- 17. Free Web Applications for Analyzing Sound and Creating Music\*** *Victor Minces, UCSD*
- 18. Indigenous Mapping** *Sharon Nelson-Barber, Jon Boxerman, Matt Silbergliitt, Zanette Johnson, WestEd*
- 19. Integrating Computational Thinking in Visual Arts** *Anne Haugh, Martin Reardon, East Carolina University*
- 20. iSTEM - Innovative Science, Technology, Engineering and Mathematics Strategy Project: Encouraging STEM Careers through Innovation** *Cynthia Trawick, Tiffany Bussey, Dwayne Joseph, Willie Rockward, Jamie Clayton, Melissa Demetrikopoulos, Institute for Biomedical Philosophy*
- 21. Make with Data** *Aaron D’Cruze, Nathan Holbert, Cassie Xu, Lamont-Doherty Earth Observatory, Columbia University*
- 22. Modeling Agricultural Life Sciences Through STEM Integration (MALTS)** *Quincy Clark, Purdue University*
- 23. NAF IT High School Student College and Career Readiness Experiences** *Edward Fletcher, Victor Hernandez-Gantes, Thomas Horwood, Nick Minar, University of South Florida*
- 24. NGSS Storyline as a Catalyst to Science Reform: Experiences of the BODYMODELS Project** *Neal Grandgenett, Xin Wang, Anne Karabon, Michelle Friend, Amelia Knarr, Kota Takahashi, Kristin VanWynGarden, Namwoong Kim, University of Nebraska at Omaha*
- 25. Philly Scientists: Mapping the Biodiversity of the Philadelphia Promise Zone** *Guillermo Ibarrola Recalde, Drexel University*
- 26. Project ESTITCH: Developing Integrated E-Textiles Curriculum for Upper Elementary School** *Kristin A. Searle, Utah State University*
- 27. Promoting Robotic Design and Entrepreneurship Experiences** *Vikram Kapila, NYU Tandon School of Engineering*
- 28. Resources for Teaching Artificial Intelligence in K-12** *David Touretzky, Carnegie Mellon University*

\* Technology Demonstration

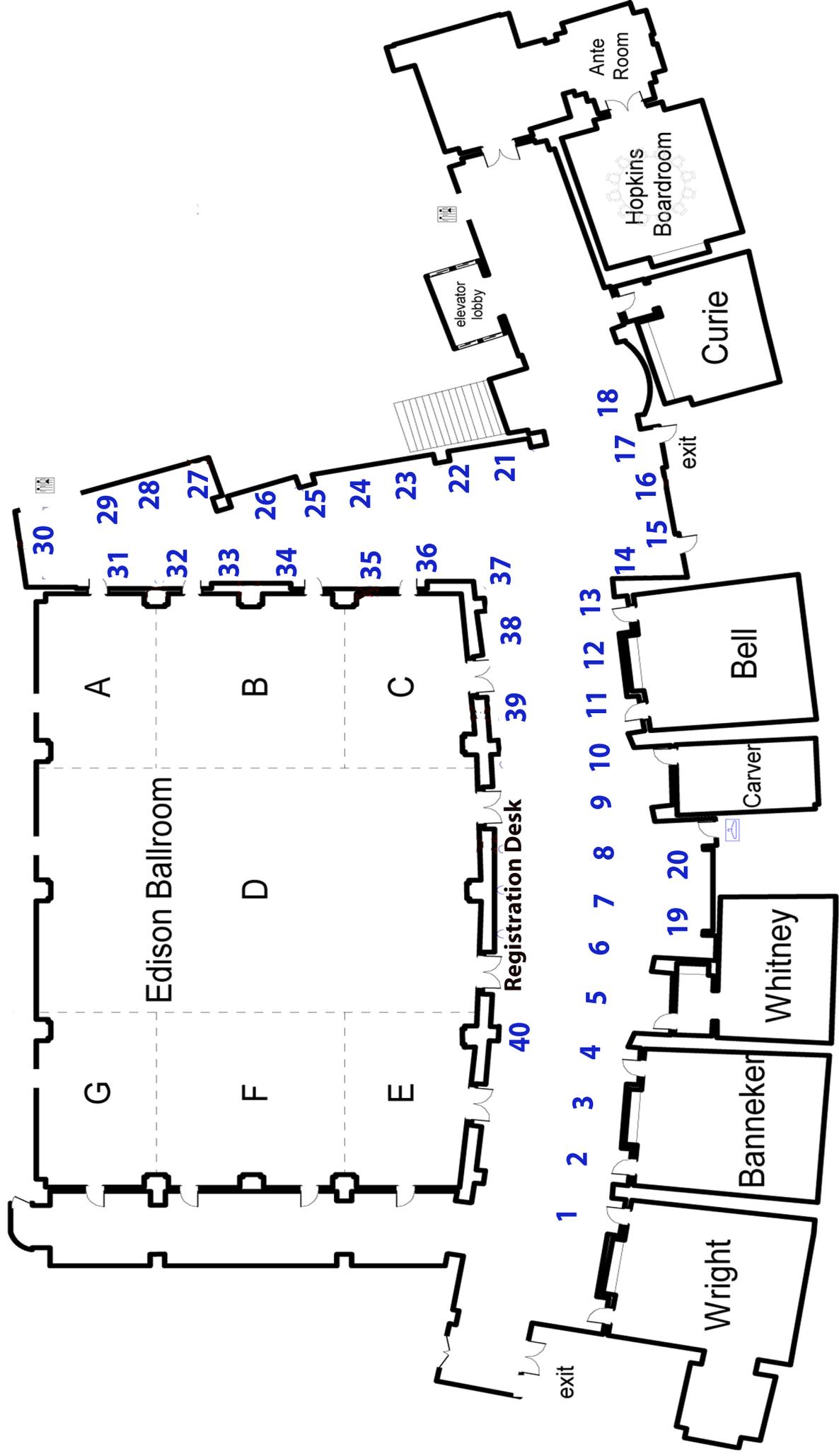
\*\* Poster & Technology Demonstration 10

29. **SciGirls Strategies** *Rita Karl, Hilarie Davis, Technology for Learning LLC*
30. **Seeding the Future of STEM Researchers through Emerging Agricultural Technologies**  
*Helen Zhang, Chris Asante, Dave Jackson, Yihong Cheng, Raj Rupani, Mike Barnett, Boston College*
31. **Short-Term Impacts of a STEM Focused JROTC Leadership Camp** *James P. Van Haneghan, Melissa Dean, Robert F. Barrow, Lt. Col (Ret.), Susan Pruet, STEMWorksLLC*
32. **Socio-Environmental Investigations with Geospatial Technologies** *Alec Bodzin, Lehigh University*
33. **Strengthening the STEM Pipeline for Elementary School African Americans, Hispanics, and Girls by Scaling Up Summer Engineering Experiences** *Monica E. Cardella, Purdue University*
34. **Student-Produced Videos to Learn and to Educate their Communities** *Jeffrey Ram, Wayne State University*
35. **Supporting Diversity, Inclusion, and Equity Through Informal STEM Work-Based Experiences** *Svetlana Darche, WestEd*
36. **To Err is Human: Engaging Youth in an Iterative Design Process with Professional Engineers in a Supportive Library Setting** *Keliann LaConte, Jen Jocz, National Center for Interactive Learning/Space Science Institute, Education Development Center*
37. **Transforming the Conversation about STEM through Student Voice** *Jeremy Babendure, Ph.D, Kelly Greene, Institute for Learning Innovation*
38. **Insights from the First Two Years of a Project Partnering Middle School Teachers with Industry to Bring Engineering to the Science Classroom** *Jake Grohs, Virginia Tech Engineering Education*
39. **YouthAstroNet - Tech Tools for Telescopes\*** *Mary Dussault, Erika Wright, Center for Astrophysics, Harvard & Smithsonian*
40. **Zippping Towards STEM: Integrating Engineering Design into the Middle School Physical Science Curriculum** *Nidaa Makki, Donald Visco, Jr., Nicholas Garafolo, Kristin Koskey, Wondimu Ahmed, The University of Akron*

\* Technology Demonstration

\*\* Poster & Technology Demonstration

# ITEST Project Expo Map



## Project Expo Roundtables

**Friday, June 14th, 10:30am – 11:45am**

The Project Expo Roundtables are concurrent sessions where attendees will choose to participate in thematic roundtable discussions. These sessions provide a space for attendees to engage in small-group conversations with poster/tech presenters from the Project Expo. Each table will include presenters that address similar disciplines, settings, grade-spans, or other unifying theme. Roundtable participants will engage in a discussant-facilitated conversation anchored by the unifying theme of the presenters.

Roundtables will be set up in the Main Ballroom and Breakout Rooms, see “Project Expo Roundtables” handout for room assignments and descriptions.

# NSF ITEST PI & Evaluator Summit 2019: Living, Learning, and Working in the Digital Age

## Thursday, June 13

7:30	Registration & Breakfast
8:30	Summit Welcome
9:00	Keynote
10:00	Break
10:30	ITEST Solicitation Updates
11:30	Flash Talks
12:30	Lunch
1:00	Broadening Participation Panel
2:15	Breakout Sessions Part 1
3:15	Break
3:45	Breakout Sessions Part 2
4:45	Break & Expo Set Up
5:30	Project Expo
7:00	End of Day 1

## Friday, June 14

7:30	Networking & Breakfast
8:30	Day 2 Orientation
8:45	NSF Remarks
9:00	Future of Work Panel
10:15	Break
10:30	Roundtables
12:00	Lunch & Program Officer Meetings
1:45	Breakout Sessions Part 3
3:00	Closing Reflections & NSF Town Hall
4:00	Working Groups & Program Officer Meetings
5:00	End of Day 2

#ITEST2019

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