



2016 Maine STEM Summit



“Building Bridges: Developing Partnerships to Build Capacity for STEM Education in Maine”



**Friday, November 18, 2016
Colby College, Cotter Union
Waterville, ME**

Welcome

Welcome to the 2016 STEM Summit, the signature event of the Maine STEM Collaborative. The 2016 STEM Summit convenes K-12 in-school and out-of-school educators and administrators, business leaders, learning scientists, nonprofit organizations, science, technology, engineering, and mathematics (STEM) research scientists, policymakers, parents, and students to learn and share with each other to build capacity for STEM experiences across Maine. In addition to an outstanding learning experience, this Summit is designed to support attendees in adding their voices to define new collaborations, projects, and initiatives of many different forms.

We are very excited to introduce the STEM Education Innovation Challenge Grant Competition at the 2016 STEM Summit. This competition provides K-12 educators the opportunity to try out highly innovative ideas in STEM teaching and learning. Six finalists will “Fast Pitch” their projects to the audience who will select the finalist. All finalists will receive awards ranging from \$2,000 to \$5,000 to support implementation of their ideas.

We hope you learn from the Summit, share your experiences and ideas, and establish or expand your network of Mainers who are committed to improving STEM education in Maine.

Terry Shehata, Ph.D.
Chair, Maine STEM Collaborative

Event Schedule

	MORNING
7:30 A.M.	Registration & Continental Breakfast
8:15 A.M.	Welcome STEM Collaborative & Colby College
8:45 A.M.	Keynote Speaker Brooke Haycock , The Education Trust
9:45 A.M.	Voices & Perspectives Map
10:00 A.M.	Breakout Session #1
11:15 A.M.	Voices & Perspectives Map
11:30 A.M.	Breakout Session #2
12:45 P.M.	Voices & Perspectives Map
1:00 P.M.	LUNCH at Cotter Union

	AFTERNOON
1:45 P.M.	Keynote Speakers Andrew Sandweiss Yale University Student Jerry Ellner Universal Technical Institute
2:45 P.M.	Innovation Challenge: Finalist Fast-Pitch
4:00 P.M.	Wrap up

	EVENING
4:15 P.M.	Gallery Walk & Social Hour

Breakout Session #1

● **Addressing STEM From Differing Perspectives for Students**

Diamond Room 221

Designing engaging STEM learning experiences cannot be done through one-size-fits all approaches. This panel showcases the wide variety of ways learners can access STEM, through the arts, sports, coding, and others. Learn about the opportunities that are available to Maine's teachers and how you can participate in these innovative approaches to STEM learning and teaching. Panelists: Argy Nestor, Maine Arts Commission; Lindsey Pinchbeck, SweetTree Arts; Brett Elwell & Madelyn Murphy, EverFi; Dani McAvoy, Code.org; Hannah Walden, Maine Central Institute; Kate Cook Whitt, Thomas College; Eva Szillery, Maine Mathematics Science and Engineering Talent Search

● **Connecting Your Classroom to Your Community-Preparing Students for the Workforce**

Diamond Room 145

What makes Maine, Maine? One major aspect is our small tight knit communities. These communities are rich in history and stories. Are you looking to connect your students to the community they are in? Come to this panel discussion to see how one school has done this and gain ways to start in your community. Panelists: Morgan Cuthbert, Yarmouth Schools; Gabe Weiss, Yarmouth Education Foundation; Duncan Birkbeck & Clementine Blaschke, Yarmouth High School Students

● **Different Out of the Box From the Get Go**

SSWAC, Parker Reed

In addition to the variety afforded by local control, Maine has 'schools' in different formats, such as the Maine School of Science and Mathematics as a magnet school and charter schools such as the other 3 on this panel. Key staff from these places will describe their instructional models and the pros and

Breakout Session #1

cons of being a non-traditional school. Panelists: Pam Rawson, Baxter Academy; Erich Hunter, Maine School of Science and Mathematics; Emanuel Pariser, Maine Academy for Natural Sciences; Micah Depper and John D'Anieri, Harpswell Coastal Academy

● **Examining Maine's STEM Workforce: New Opportunities** **Diamond Room 142**

STEM jobs in Maine will rise nearly three times the rate of all occupations between 2012 and 2022, according to the Maine Department of Labor. Unfortunately the Maine workforce is shrinking. This session will explore several initiatives aimed at attracting quality STEM workers to live and work in Maine. Panelists: Nate Wildes, Live and Work in Maine; Joy Gould, Coastal Counties Workforce; Representative TBD, FocusMaine

● **Interdisciplinary STEM Focus** **Diamond Room 141**

Professional development providers in Maine are working to support teachers and classrooms in writing, social science, data, STEM, and more. How can we build on these professional development opportunities and collaborate to make learning interdisciplinary? Explore and share how discipline experts around the state are supporting teachers to deliver rich interdisciplinary learning experiences. Panelists: Lynn Farrin, Maine Mathematics and Science Alliance; Meggie Harvey, Gulf of Maine Research Institute; Jenn Page, Hurricane Island; Erika Allison, Maine Writing Project and UMaine RiSE Center; Bill Zoellick, Schoodic Institute; Molly Schauffler, Data Literacy Project

● **Teachers Leading the Way!** **Diamond Room 243**

This session will highlight how professional learning communities and teacher leaders can provide the needed supports and engagement to lead the way towards a bright

Breakout Session #1





future of STEM teaching and learning in Maine. Panelists: Jane Crowley, MSAD 51; Julianne Opperman, MSAD 51; Diana Allen, Sanford School Department and Maine Science Teachers Association; Margo Murphy, Camden Hills High School and Maine Mathematics and Science Alliance board member; Angie McLaughlin, Maine Teacher of the Year

Understanding Current Findings: Defining a STEM Education Agenda for Maine **Diamond Room 146**

Maine has pockets of innovation and understanding hidden away in remote areas all across our state. This session brings together results from studies of Maine's STEM education to provide a detailed understanding of what do we already know and what do we still need to know. Panelists: Pamela Buffington, Education Development Center; Alison Miller, Bowdoin College; Laura Millay, UMaine RiSE Center; Jan Mokros, Maine Mathematics and Science Alliance; Sally Slovenski & Aliana Clark, Maine Campus Compact

What We Need to Know to Advocate for STEM Education in K-12 and Higher Education **Diamond Room 122**

This session focuses on what information the legislature needs to help them form policy. They will identify information sources, types, even specific data sets they wish they had. And they will identify effective ways to present data to them. Panelists: Representative Brian Hubbell; Representative Paul Stearns; Senator Rebecca Millett, Former Chair Senate Education Committee

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-  Policy & Government
 -  Research
 -  Professional Development
 -  Maine's STEM Workforce
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Breakout Session # 2

● **Authentic Contexts for STEM Learning** **Diamond Room 142**

How do authentic contexts for learning facilitate bundling of the three NGSS dimensions for meaningful STEM learning?

Explore and share how professional development is bringing authentic contexts for STEM learning to classrooms across Maine. Panelists: Gary Lewis, Maine Mathematics and Science Alliances; Meggie Harvey, Gulf of Maine Research Institute; Karen Giles, Robotics Institute of Maine; Anita Smith, Project Learning Tree; Nicole Poulton & Elizabeth Baker, Bigelow Labs Keller BLOOM & Belfast High School.

● **Bridging Research and Practice: It Can Be Done!** **Diamond Room 241**

This session will showcase some examples of how researchers and practitioners worked in partnership to bridge the divide between research and practice. Examples to be highlighted include equity oriented STEM improvement efforts undertaken in the NSF-funded Research and Practice Collaboratory. Panelists: Pamela Buffington & Abigail Jurist Levy, Education Development Center.

● **Designing Professional Development: Identifying and Responding to Needs** **Diamond Room 146**

This session will facilitate discussion between educators and professional development providers as we share lessons learned from our own work as a springboard to discuss general best-practices. Focal points include creating trust and connecting with decision makers, vetting and developing community partners, and customizing materials to the needs of the schools. Panelists: Jenn Page, Hurricane Island Foundation; Yvonne Thomas, Island Institute; Alex Brasili, Herring Gut Learning Center.

Breakout Session #2

- **Evaluating and Assessing Outcomes of STEM Professional Development**
Diamond Room 141

Professional development is a great opportunity, but how do we know if the intervention has the intended impact? This session will help participants break out of the “let’s build a survey” mindset and introduce validated instruments and helpful resources. Panelists: Sue Allen & Ruth Kermish-Allen, Maine Mathematics and Science Alliance; Laura Millay, UMaine RiSE Center; Jonathon Shemwell, University of Maine.

- **Flexibility Beyond the Classroom: Connecting Younger Students to STEM**
Diamond Room 145

Educators have heard the cries from the workforce: In order to be prepared to contribute to Maine’s changing economy students need access to problem-solving projects and STEM activities earlier in their development as learners. The answer? Flexible scheduling and extended, real-world activities with community partners. Jon Amory, Ethan Frederick and Heather D’Ippolito, Baxter Academy for Technology and Science; Trina Dorn & Amy Pichette, LearningWorks After School Program.

- **Lessons Learned?: How Do We Achieve Teaching and Learning Excellence in STEM Subjects in Maine's K-12 Schools?**
SSWAC, Parker Reed

This session focuses on the experiences of these key education policy people and what advice they give to the executive branch, the legislative branch and others in state on moving Maine forward in STEM education. Panelists: Duke Albanese, former Commissioner and Superintendent; Anita Bernhardt, York School Department, former Maine Department of Education; Francis Eberle, former National Association of State Boards of Education, National Science Teachers Association, and Maine Mathematics and Science Alliance

Breakout Session #2

● MLTI-Making the Most of a Unique Opportunity for All of Maine
Diamond Room 122

MLTI, aka “The Laptop Program”, delivered 55,000 MacBook Airs & iPad Pros in Fall 2016 to Maine K-12 schools. How do we work together to bridge the gap between the most universally digitally empowered and literate K-12 students in the nation and Maine’s higher education system, employers, and opportunity? Panelists: Mike Muir, Maine Department of Education; Julie Willcott, Kennebec Valley Community College; Douglas Snow, Andrew Johnson & Jim Moulton, Apple.

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- Policy & Government
 - Research
 - Professional Development
 - Maine’s STEM Workforce
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Keynote Speakers



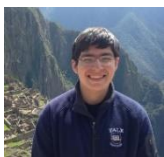
Jerry Ellner, National Director of High School Development at Universal Technical Institute, the nation's leading provider of training for aspiring auto, motorcycle, diesel, marine and collision repair technicians. Ellner began his career at UTI in 1991 as the *first* admissions representative in New England,

advanced to regional admissions director, to the national director. In 2009, Ellner embraced a newly-created role of national director for high school development. His expertise in managing admissions and enrollment, and developing and fostering relationships with high schools has enabled hundreds of schools nationwide to better understand the value of a technical, STEM-based education. Ellner has been instrumental in the development of UTI's successful STEM workshop programs for high school students and counselors, helping to further broaden their perspective on STEM careers.



Brooke Haycock, a former high school dropout from an urban public school system, playwright researcher Brooke Haycock has been with The Education Trust for more than a decade. Her issue-focused docudramas, based entirely on interviews with

students and educators, transform research into performance, exposing the stories behind the data and driving straight to the heart of the debate around equity in schools. Brooke is the author of Ed. Trust's Echoes From the Gap series, and her off-stage writing, focused on student stories and message communication in schools, has appeared in Phi Delta Kappan and is regularly featured in Ed Trust's blog, The Equity Line. She holds a bachelor's degree from The University of California, Santa Barbara and a master's from Johns Hopkins University.



Andrew Sandweiss, a graduate of Bangor High School (BHS), is a sophomore at Yale University studying Architecture with a concentration in Urban Studies. His involvement with STEM began in 2012 after entering the STEM Academy at BHS. During high school Sandweiss worked on developing

strategies to mitigate the climatic phenomenon El Niño, specifically working with its recently discovered variant: El Niño Modoki. He participated in several national science competitions that culminated with his presentation on "Climate Change and the Future of Water," at Emirates Center for Strategic Studies and Research in Abu Dhabi.

Innovation Challenge – Fast Pitch!

STEM Education Innovation Challenge Finalists

You decide the winner! During the Finalist Fast-Pitch session audience members will vote to determine our Champion.

High School Category:

Applicant: Maya Crosby & Ken Stevenson, Lincoln Academy,
Newcastle

Project Title: Project Launch

Applicant: Rosalee Lamm, Portland High School, Portland

Project Title: Creating a Virtual Reality

Middle School Category:

Applicant: Amanda Ripa, Messalonskee Middle School,
Oakland

Project Title: Power Plants

Applicant: Christel Driscoll, Franklin Sames, & Thomas
Fournier, Lincoln Middle School, Portland

Project Title: Wind Powered Kinetic Sculptures

Elementary School Category:

Applicant: James Willigar & Sally Allen, Whitefield Elementary
School, Whitefield

Project Title: Student Renewable Energy Lab

Applicant: Nichole Hewes, Troy Central School, Troy

Project Title: Building Blocks: Using Legos and
Minecraft to Teach Computer Coding

STEM Education Innovation Challenge Finalists
Compete for \$15,000 in Grants



Special Thanks

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Thank You!

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