

**UTeach
STEM
Educators
Conference
2017**

Program

July 13–14, 2017 • Commons Learning Center • Austin, Texas

Featured Speakers

Katey Arrington

UTeach Austin, 2001

Katey Arrington is manager of K–12 System Services for the Charles A. Dana Center at The University of Texas at Austin. She provides leadership, guidance, and continuity across all of the Center’s K–12 products and services. Katey has extensive experience in educator professional development and as a teacher in K–12 and community college. She has served in instructional leadership at campus and district levels, including five years as the mathematics coordinator for a diverse district in Texas. Katey is one of the first UTeach Austin graduates, and she also earned a Master of Arts in Mathematics Education through the UTeach program. She is pursuing her doctorate in education policy and planning at UT Austin, where she is examining inequities in access to and success in high-quality math and science education and the connection between K–12 education and success in post-secondary endeavors.

Daniel FitzPatrick

UTeach Austin, 2006

Daniel FitzPatrick is a clinical assistant professor and mathematics master teacher at UTeach Austin. He teaches Step 2 and Functions and Modeling and has supported undergraduate UTeach students in Step 1, Classroom Interactions, and Project-Based Instruction. Before joining UTeach, Daniel taught middle school mathematics, Algebra 1 and 2, Geometry, Pre-Calculus, AP Calculus, and robotics. Daniel is a graduate of UTeach Austin and holds a Bachelor of Science and a Master of Arts in Mathematics from The University of Texas at Austin, UTeach Master’s Program. His interests include argument-driven inquiry and the use of dynamic software in teaching and learning mathematics.

Andrew Lowry

UTeach Austin, 2006

Andrew Lowry is starting his 12th year as an educator. For four years, he has been an assistant principal in Katy, Texas. He has been a high school science instructional coach, teacher, and swimming coach. Andrew’s passion is teaching, and he believes society can flourish when there is public respect for education.

He holds a Master’s in Educational Leadership from the University of Houston–Clear Lake (UHCL). He is currently pursuing his Doctor of Education in Curriculum and Instruction at UHCL with a special emphasis on STEM education. His research focuses on effective STEM teacher preparation programs.

Dr. Ariel J. Taylor

UTeach Austin, 2011

Ariel J. Taylor recently completed the Professional Leadership and Policy Studies doctoral program at the University of Houston. Ariel earned a Bachelor of Science in Mathematics from The University of Texas at Austin with a mathematics certification through UTeach in 2011. She also completed the UTeach Master’s program in 2012 and went on to obtain principal and superintendent certifications from the University of Houston. She taught high school math for four years and is now a math specialist Fort Bend ISD. Ariel enjoys presenting at conferences around the nation on the importance of authentic engagement and student accountability. Outside of her educational leadership work, she engages in youth empowerment through the nonprofit organization, The RISE Project, which she founded as an undergraduate student.

Moderator: Dr. Paige K. Evans

Clinical Professor, University of Houston

Paige K. Evans is a Clinical Professor in the College of Natural Sciences and Mathematics (NSM) at the University of Houston (UH). Dr. Evans has served as a master teacher at UH since 2008 and has been instrumental in developing the *teachHOUSTON* program, where she works with preservice secondary math/science teachers to teach innovative lessons as well as obtain Texas Teacher Certification. She currently serves as the PI/Co-PI on four NSF grants, is the director of the Noyce Internship and Scholarship Program, and actively publishes and presents on STEM education. She has been honored with the UH Teaching Excellence Award, the UH Group Teaching Excellence Award, and the NSM John C. Butler Teaching Excellence Award. Prior to UH, she spent 18 years as a secondary math/science educator and served in various leadership positions, including science department chair.

Thursday, July 13

12:30–1:00 p.m. Registration / Check-In

Atrium

1:30–2:30 p.m. Opening General Session

Lil' Tex Auditorium

Alumni from UTeach Austin will take the stage for our keynote panel to discuss their perspectives and experiences related to leadership in STEM education.

2:30–4:00 p.m. UTeach Playground

Atrium

Discover some favorite tips or tricks for engaging students from fellow alumni. Learn about great classroom resources and visit our exhibitors while you have a snack break and mingle with UTeach Nation.

See the separate handout in your folder for a list of Playground resources and exhibitors.




4:00–6:00 p.m. Welcome Reception

Atrium

Reconnect with your classmates and make new friends at the Welcome Reception. The event includes two free drink tickets and appetizers.

Friday, July 14

KEY

	All audiences
	K–12 pre-service and in-service teachers
	Master teachers

8:00–9:00 a.m. Breakfast and Registration / Check-In Atrium

9:00–10:00 a.m.

Why do we teach mathematics? | 1.138 Stadium

Mark Daniels, Associate Co-Director, UTeach Natural Sciences; Assistant Chair, Mathematics Department, University of Texas at Austin

Teachers often teach mathematics as a toolbox of techniques in response to a mandated list of topics that most students will actually never really need or use. Of course, we often try to throw in some fairly contrived “real-world” applications of the mathematics we teach, which are meant to motivate students, but is this approach working? The purpose of this session is to promote a discussion of the foundational reasons why we teach mathematics to children. Perhaps this will inspire us to re-evaluate what we teach, what we emphasize, and how we teach mathematics.

What is a flame? | 1.112G Tower

Laura Robinette Minor, Middle School Science Faculty, Trinity Episcopal School

Tired of teaching the combustion reaction in the same old way? Inspire students to investigate flames with new eyes, without lab equipment, and walk away with ideas for how to “spark up” other lessons. This session is intended to spark creative ideas for integrating inquiry and modeling into science curriculum.

Barbie bungee | 1.162 Mustang

Suzanne Culbreth, Master Teacher, University of Alabama, Birmingham

Paulette Evans, Master Teacher, University of Alabama, Birmingham

We will conduct a 5E lesson based on the Laying the Foundation (LTF) lesson, Barbie Bungee. We will debrief the lesson to highlight each of the 5Es and then share the lesson in its original format to facilitate a discussion of the adaptation. Participants will

investigate our Lesson Plan Menu and explore the options for application to their program.

Forget kill and drill: Engaging and effective review activities for the high school classroom | 1.108 Balcones

Mary Gregg, Mathematics Teacher, The School of Science and Engineering Magnet-Dallas

This session will focus on different activities and games that can be used to review content before a summative assessment, with particular focus on standardized tests. Activities can be modified for any content area and include suggestions for differentiating based on the needs of students. If you are a high school teacher looking for fun, easy to prep, effective activities to review content, this session is for you!

Bring your own technology: Data collection and analysis | 1.140 Bevo

Rick Rutland, Master Teacher, Vernier Software & Technology Trainer, University of Texas at San Antonio

Dr. Jodi Maker, Master Teacher, University of Texas at San Antonio

Janie Love, Master Teacher, University of Texas at San Antonio

Bring Your Own Device (BYOD) is becoming popular in many schools. We will demonstrate a technology-based method for data collection and analysis. Bring your own device loaded with the free app “Graphical Analysis” from Vernier Software for a demonstration lesson from Step 1 or Step 2.

Self-efficacy of pre-service STEM teachers: Traditional university versus UTeach university model | 1.130 Longhorn

Andrew Lowry, Assistant Principal, Obra D. Tompkins High School

Come learn and collaborate to uncover one part of the growing research surrounding UTeach. This session will spark curiosity, contribute to the literature on teacher preparation programs, and help inform university pre-service programs about the types of experiences pre-service teachers need to be effective.

10:15–11:15 a.m.

I taught a zoo: Teaching math and science with data collection | 1.140 Bevo

Lynn Kirby, Master Teacher, The University of Texas at Austin

Critical thinking skills are essential to the success of students in science and math. Our “animal lessons” focus on having students collect data and then analyze the data to make and defend claims. Throughout, students use measurement skills and proportional reasoning.

A natural collaboration: Math students and teachers in a maker space | 1.138 Stadium

*Lauren Siegel, Director, MathHappens
Margaret Nott, Mathematics Teacher, Austin High School
Ayesha Qadri, Student, UTeach Austin*

This session is for mathematics teachers looking to foster transference, and bring creativity, model design, and fun into their students’ math experiences. We will share our engaging classroom materials and discuss our experiences with making math exhibits, models, and displays to compliment offerings in museums and cultural institutions—making field trips mathematically rich for students.

Accommodating science instruction | 1.130 Longhorn

Jessica Menchaca, Secondary Science Teacher, Del Valle ISD

Erica Valdez, Secondary Science Teacher, Del Valle ISD

Having a hard time wrapping your head around ways to accommodate or differentiate for special populations of students? This session will cover the causes of achievement gaps and strategies for mitigation in science.

Balancing rigor and remediation in mathematics instruction | 1.108 Balcones

David Castro, Math Achievement Director, KIPP San Antonio

This hands-on workshop will provide participants with a proven protocol to backwards plan math instruction at the year, unit, and lesson levels. Learn how to create a differentiated curriculum that enables students with differing skill levels to engage in deep mathematical thinking and discourse.

Step 1 and 2 lesson plans: Where's the computer science? | 1.162 Mustang

Mike DeGraff, Teacher Support Specialist, UTeach Institute

In this session, we will discuss leveraging the UTeach CS Principles curriculum to incorporate computer science in Step 1 and 2. We will bring several ideas for activities to support lesson plan development and ask for your help in selecting and further developing these ideas to be shared with the UTeach community. This session is for anyone with interest in lesson plan development in the Step courses, no matter your CS experience. The more voices included, the better resources we'll develop!

Mentoring pre-service and new teachers | 1.112G Tower

Pamela Powell, Master Teacher, The University of Texas at Austin

Kelli Allen, Master Teacher, The University of Texas at Austin

The care given to mentoring a new teacher is essential to future teaching success. Participants will share ideas for best mentoring practices for pre-service and new teachers, articulate pedagogical and content needs of pre-service and new teachers, and create a list of techniques and strategies to support pre-service and new teachers.

11:30 a.m.—12:30 p.m.

Desmos: Digital learning in the digital age | 1.108 Balcones

Kailan Bell, Mathematics Teacher and Department Instructional Facilitator, Creekview High School

Desmos provides hundreds of online activities for all levels (Algebra 1 to Precalculus and beyond) to deepen student understanding of concepts, teach students how to discuss mathematics, and let teachers see a live view of their students' computer screens. Let students work at their own pace or turn on "Teacher Led Mode" to walk through any activity at your pace. Either way, you and your students will have fun with Desmos.

Writing a conference proposal and getting accepted | 1.162 Mustang

Andrew Lowry, Assistant Principal, Obra D. Tompkins High School

Participants will learn what to expect when writing a conference proposal. Using the techniques taught in this session, gain skills to successfully write proposals for any conference you wish to present at in the future (including the 2018 Alumni UTeach Conference). Anyone who is interested in being a leader should attend!

Exploring gene expression with HHMI BioInteractive resources | 1.130 Longhorn

Keri Shingleton, Science Teacher, Holland Hall Upper School

Biology's central dogma describes the flow of genetic information from DNA to RNA to protein. Mutations in DNA sequences can affect the resulting protein, possibly causing disease. Come learn about the latest free HHMI BioInteractive resources that teach gene expression, mutations, and ways to treat genetic diseases.

Promoting literacy in the STEM classroom | 1.138 Stadium

Rikki Foster, Science Teacher and Department Chair, Manor New Technology High School
Spencer Martin, STEM Instructional Coach, Kansas City, Kansas Public Schools

This session will present a strategy for STEM teachers to promote literacy in their respective fields by having students analyze STEM articles and engage in discussion with their peers. Article Responses and Colloquiums are a great way to give students voice and choice on their learning as well as bringing in academic writing and presentations to the classroom.

Onboarding UTeach graduates into the National UTeach Alumni Network | 1.112G Tower

Jo Hamilton, Member Services Coordinator, UTeach Institute

Michelle Lowry, Senior Software Developer, UTeach Institute

Martha Perez, Data Collection and Evaluation Coordinator, UTeach Institute

Your UTeach students are about to head out into the world! Come hear how they are enrolled as apprentice teachers into a professional association just for them that provides virtual support, career opportunities, access to professional learning, and more!

Using technology to automate student placement | 1.140 Bevo

Leslie Nisbet, Assistant Professor, Florida International University

Nicholas Oehm, Master Teacher, Florida International University

In this hands-on session, participants will practice collecting student and mentor teacher data electronically and use Excel to manipulate sample datasets. Participants with a basic knowledge of Excel will learn how to use the VLOOKUP, pivot table, and mail merge functions to generate field placements and integrate student data with their mentor teacher data for program tracking.

12:30–1:30 p.m. Lunch

Atrium

1:30–2:30 p.m.

Inductive reasoning: Creating opportunities for student engagement in inquiry-based learning | 1.140 Bevo

Mark Townsend, Precalculus Course Coordinator, OnRamps, The University of Texas at Austin

This session is intended for math teachers at any level looking to enhance inquiry-based learning opportunities in their classrooms. Participants will have time to play with online tools and resources to see how they can use pattern recognition to teach specific definitions, theorems, or processes.

Isopod pods: Incorporating engineering design into the science classroom | 1.130 Longhorn

Laura Robinette Minor, Middle School Science Faculty, Trinity Episcopal School

Engineering is a hot topic, but how can we incorporate it into an already full curriculum? Experience a design challenge and come away with ideas for incorporating design challenges in your classroom.

PBS LearningMedia as a safe, helpful, powerful resource for teachers and students | 1.108 Balcones

Miriam Mendoza, KLRU-TV, Austin PBS, The University of Texas at Austin

Julie Hildebrand, First Grade Teacher, Patton Elementary School, and PBS Digital Innovator

With five years of experience with LearningMedia and more than one million teacher accounts, PBS knows that good teachers are using PBS LM to enhance and extend their students' learning. Whether a student is struggling with new concepts and skills or pursuing independent pathways, the resource gives people autonomy in finding what they need. And for teachers, it may provide a new spark to enliven their lessons and activities. All for free, all part of PBS's mission to serve the U.S. Educators will be encouraged to give PBS LearningMedia a test drive during the session, including developing folders and artifacts that they can use in their classes.

Flipped classrooms: How to make a great instructional video | 1.138 Stadium

Lauren Cardenas, Mathematics Teacher, San Felipe Del Rio CISD

Have you considered “flipping” your classroom? Want to learn how to make professional-looking instructional videos? We'll practice making videos, from planning and scripting to filming and editing, all the way to that great feeling of uploading your finished product to YouTube. And we'll discuss how you can successfully integrate flipped classrooms and inquiry-based learning.

Step 1 and 2 combo: Seizing a missed opportunity and lessons learned | 1.112G Tower

Leslie Nisbet, Assistant Professor, Florida International University

Nicholas Oehm, Master Teacher, Florida International University

FIUteach Master Teachers will share insights on how they have increased program enrollment through the launch of a “combo” class, including syllabus/course content, field experience, scheduling, and recruitment strategies.

Show-and-share: Recruitment and retention of UTeach students | 1.162 Mustang

Kelli Allen, Master Teacher, The University of Texas at Austin

UTeach programs have a common interest in recruiting and retaining students. Participants will share strategies for recruiting students into Step 1 and retaining them throughout the UTeach program sequence and beyond. Share success stories and pitfalls while creating a collaborative document to access after the conference.

2:45–3:45 p.m.

Growth mindset: In and out of the classroom | 1.108 Balcones

Tania Tasneem, Science Teacher, Kealing Middle School

Rhiannon Chambers, Apprentice Teacher, The University of Texas at Austin

Instilling a growth mindset in students is essential to their success. When students believe they can get smarter, they understand that effort makes them stronger. This session is for teachers and mentors interested in incorporating growth mindset strategies into their everyday instruction. The importance of having a growth mindset as a teacher will be covered as well.

Questions: The heart of inquiry-based instruction | 1.140 Bevo

Janice Hudson, Master Teacher, Columbus State University

Kenneth Jones, Master Teacher, Columbus State University

Asking the right questions and using student responses to conduct meaningful classroom discourse are critical skills at the heart of successful inquiry-based lessons. Participants will explore different types of questions appropriate for different stages of instruction, participate in activities that illustrate how to use questions to drive classroom activities toward curriculum goals, and develop questions appropriate for each of the SEs.

Applying STEM models of instruction: Synectics teaching | 1.130 Longhorn

Andrew Lowry, Assistant Principal, Obra D. Tompkins High School

The Synectics model of teaching is an instructional practice that is rarely used in STEM classrooms. This session has the potential to enlighten other educators about how Synectics can modernize a lesson and bring about additional benefits for improving students' abilities to be creative, problem solve, explore real-world solutions, and develop a deeper understanding of concepts.

Classroom management for the 21st century | 1.138 Stadium

Kelli Allen, Master Teacher, The University of Texas at Austin

Jonathan Broussard, Apprentice Teacher, The University of Texas at Austin

Students in the 21st century have a unique skill set they are bringing into classrooms, causing teachers to redefine classroom management strategies to maximize the development of these skills and minimize disruptions to teaching and learning. Participants will research attributes of a 21st century classroom and discover innovative classroom management tools.

AVIDizing math | 1.112G Tower

Trevon Jones, Math Teacher and AVID Coordinator, Paschal High School

Participants will utilize Advancement via Individual Determination (AVID) strategies to approach a high school math lesson. They will be able to summarize the mission and purpose of the AVID College Readiness System, implement AVID WICOR strategies (such as Collaborative Study Groups), be able to find additional information and resources to support AVID on their campus.

Google- and Apple-certified teacher programs: The how-tos and the benefits | 1.162 Mustang

Spencer Martin, STEM Instructional Coach, Kansas City, Kansas Public Schools

Being a Google- or Apple-certified educator is helpful and looks great on a résumé, and these certifications are not as hard to obtain as you might think. This session is intended for teachers of any subject or level who would like to learn more about classroom technology and build their résumé at the same time.

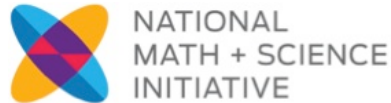
3:45–4:00 p.m. Closing General Session
Lil' Tex Auditorium

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