UTeach Conference 2015

9th Annual

May 19–21, 2015

THE UNIVERSITY OF TEXAS AT AUSTIN

Program

AT&T Executive Education and Conference Center • Austin, Texas

Keynote

ROBERT KRULWICH

Co-host of NPR's Radiolab, Robert Krulwich is one of the most original and widely listened to broadcasters in the world.

Krulwich illustrates hard-to-see concepts in science with anything at his disposal, using drawings, cartoons, videos, and more. Early in his career, he applied his signature style to technology and economics as well as science. Over the years, he has explored the structure of DNA with a banana; created his own Italian opera, "Ratto Interesso," to explain how the Federal Reserve regulates interest rates; and explained arbitrage by wearing Groucho glasses.

"I like talking about big ideas, and I especially like creating images that will keep those ideas in peoples' heads for hours, days, even months," Krulwich says.

As a Special Correspondent for ABC News, Krulwich made regular appearances on Nightline, ABC News Tonight, and Good Morning America. *TV Guide* called him "the most inventive network reporter in television."

As host and executive editor of the PBS documentary series NOVAscienceNOW, Krulwich looked at scientific breakthroughs and their applications, from fuel cells and hydrogen-powered cars to nanotechnology. For ABC's Brave New World series, he examined subjects ranging from artificial intelligence to human cloning.

Krulwich has won Emmy Awards for a cultural history of Barbie, a Frontline investigation of internet privacy, and a look at the Savings & Loan scandal. He also took home the 2010 Essay Prize from the Iowa Writers' Workshop, The Extraordinary Communicator Award from the National Cancer Institute, and the Alfred I. Dupont-Columbia Award.

Opening Plenary

TRICIA BERRY

Named one of the 100 Women Leaders in STEM by STEMconnector, Tricia Berry leads efforts to recruit and graduate women in the Cockrell School of Engineering as Director of the Women in Engineering Program at The University of Texas at Austin. She concurrently serves as Collaborative Lead for the Texas Girls Collaborative Project (TxGCP), leading the dissemination of STEM best practices and informal curriculum across Texas in coordination with the National Girls Collaborative Project. Through both roles, she connects and supports organizations and individuals working to advance gender equity in STEM fields across Texas and beyond. Berry is also Co-Founder and Executive Vice President for 825 Basics, helping people with tools to craft their career strategies, find their passions, and achieve career and life success. She is the co-author of *You Can't Eat Your Degree: Combine Your Passions and Philosophies to Create the Story of Your Future* and *Exceeds Expectations: Take Control of Your Performance Review*. Previously, Berry worked as a Process Engineer and a Product Development Engineer at The Dow Chemical Company in Freeport, Texas. Tricia holds a BS in Chemical Engineering and an MBA.

JEANNE GOKA-DUBOSE

Jeanne Goka and her family experienced great suffering as a consequence of World War II and extreme racial attitudes against their Japanese background. Jeanne, however, came to believe that the only way to combat racism, hate, and injustice was through education. She thus began her teaching life at an urban middle school in Houston, Texas. Still passionate about public education, Jeanne is the first principal of the Ann Richards School for Young Women Leaders, which serves a majority of economically disadvantaged students. The school is in its 8th year with grades 6 to 12 and has had two graduating classes with 100% college acceptances. Jeanne was the community's choice as a guest Mother Ginger in Austin Ballet's *Nutcracker* performance. She was honored as a Woman of Distinction by the Girls Scout of America of Central Texas, received the Corazon Community Award from Con Mi Madre, was selected to serve on the National Coalition of Girl Schools as the first representative of public all-girls schools, and was featured in the *Austin Woman* August 2010 issue.

Opening Plenary *(continued)*

TAMARA HUDGINS

Tamara Hudgins is the Executive Director of Girlstart. Since 2009, Girlstart's impact has grown from reaching 1,500 girls, teachers, and family members each year to over 15,000. Girlstart believes that more girls with more ideas will create more solutions to benefit us all. To address this, Girlstart increases girls' interest and engagement in STEM through innovative, nationally-recognized informal STEM education programs. Girlstart cultivates a culture where risk is rewarded, curiosity is encouraged, and creativity is expected. Hudgins has served in the nonprofit, philanthropic, and higher education communities in Austin, Chicago, and Central Europe for 20 years, and earned her PhD from Charles University in Prague.

SABARI RAJA

Sabari Raja is the co-founder of fast-growing edtech startup, Nepris, Inc., a first-of-its-kind cloud-based platform connecting industry and education. She has worked in education technology for 17 years, leading product and content strategy, business development, publisher relations, and emerging market growth strategies. Raja is passionate about working with K–12 educators to translate their needs into scalable technology solutions. She plays an active role in furthering STEM education around the country. Raja has an undergraduate degree in Electrical Engineering from India, a Master's in Computer Science from Louisiana State University, and an Executive MBA from Cox School of Business at Southern Methodist University.

Closing Plenary

LEAH BUECHLEY

Leah Buechley is a designer, engineer, artist, and educator whose work explores intersections and juxtapositions—of "high" and "low" technologies, new and ancient materials, and masculine and feminine making traditions. She also develops tools that help people build their own technologies. Her inventions include the LilyPad Arduino toolkit. From 2009–2013, she was a professor at the MIT Media Lab, where she founded and directed the High-Low Tech group. Her work has been exhibited internationally in venues including the Victoria and Albert Museum, the Ars Electronica Festival, and the Exploratorium, and has been featured in publications including *The New York Times*, *Boston Globe*, *Popular Science*, and *Wired*. Buechley received a PhD in computer science from the University of Colorado at Boulder and a BA in physics from Skidmore College. At both institutions, she also studied dance, theater, fine art, and design.

Film Screening: *Particle Fever*

MELISSA FRANKLIN

Melissa Franklin is the Mallinckrodt Professor of Physics at Harvard University. She is an experimental particle physicist who is working on studies of hadron collisions produced by the Fermi National Accelerator Laboratory with the Collider Detector Facility (CDF) and the ATLAS experiment at the Large Hadron Collider (LHC). She works in a collaboration of over 600 international physicists who discovered the top quark at CDF, and 3,000 physicists at ATLAS where she studies particle interactions and symmetries at the highest energies now available worldwide when the accelerator turns on this fall. Professor Franklin, born and raised in Canada, received her B.Sc. from the University of Toronto and her Doctorate from Stanford University. She worked as a post-doctoral fellow at Lawrence Berkeley Lab, an assistant professor at the University of Illinois in Champagne/Urbana and was a Junior Fellow in the Society of Fellows at Harvard, before joining the Harvard faculty in 1989 and becoming the first female tenured faculty member in the department of physics in 1992.

Tuesday, May 19, 2015

10:00 a.m. – 5:00 p.m. Registration

LEVEL 2

11:00 a.m.

CAMPUS TOUR AND STUDENT ORIENTATION | MEET IN LOBBY BY REGISTRATION DESK

For UTeach students only! We are offering a brief campus tour followed by a student orientation and light lunch. The tour will start at 11:00 a.m. Meet in the lobby right next to the conference registration desk.

1:00 – 2:30 p.m. Opening Plenary

ENGAGING WOMEN AND GIRLS IN STEM | BALLROOM

Tricia Berry, DIRECTOR OF WOMEN IN ENGINEERING, UNIVERSITY OF TEXAS AT AUSTIN
Jeanne Goka-Dubose, PRINCIPAL, ANN RICHARDS SCHOOL FOR YOUNG WOMEN LEADERS
Tamara Hudgins, EXECUTIVE DIRECTOR, GIRLSTART
Sabari Raja, CO-FOUNDER AND CEO, NEPRIS

2:45 – 3:45 p.m.

OPPORTUNITIES FOR GROWTH: ALIGNING UTEACH REPLICATION SITES TO THE DANIELSON FRAMEWORK FOR TEACHING | 101

Interactive Presentation

Adam Johnson, MASTER TEACHER, IDOTEACH, BOISE STATE UNIVERSITY

Numerous states, districts, and universities use Charlotte Danielson's Framework for Teaching, and program alignment is underway in the IDoTeach program at Boise State University. Potential benefits include students developing a solid working knowledge and understanding of research-based components of instruction; mentor and master teachers providing students with evidence-based feedback that is aligned to the FfT; program-wide alignment; opportunities for professional development; and more.

CREATING AN ONLINE PROFESSIONAL DEVELOPMENT ACADEMY FOR STEM TEACHERS | 102

Interactive Presentation

Carrie Culpepper, PROFESSIONAL DEVELOPMENT MANAGER, UTEACH, UNIVERSITY OF TEXAS AT AUSTIN
Kelli Allen, CLINICAL ASSISTANT PROFESSOR / MASTER TEACHER, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

The UTeach Institute has developed an online academy for STEM teachers to earn a special distinction from the UTeach program. Participants in this session will learn about the development and roll-out of the academy. They will also be able to view course materials and provide feedback to inform further development efforts. Finally, they will learn about opportunities to participate as individuals and/or with their UTeach program to support sustainability of program efforts like induction.

CONDUCTING RESEARCH USING NATIONAL UTEACH IMPLEMENTATION DATA, PART 1 | 103

Hands-On Workshop

Alicia Beth, MANAGER, RESEARCH AND EVALUATION, UTEACH INSTITUTE
Amy Moreland, SITE COORDINATOR, UTEACH INSTITUTE

During this first of a two-part session, representatives from the UTeach Institute will present the processes for acquiring data on UTeach-based programs across the U.S., including program features, student demographics, survey and focus group data, and potential graduate information. Projected service costs, types of data, and potential research topics will be discussed. A UTeach STEM Educators Association (USEA) board member will also discuss the research mission of the professional association.

BUILDING YOUR STUDENT ORGANIZATION | 202

Interactive Presentation

Peggy Ward, MASTER TEACHER, UATEACH, UNIVERSITY OF ARKANSAS AT FAYETTEVILLE
Christine Roland, MASTER TEACHER, CO-DIRECTOR, TOWSON UTEACH, TOWSON UNIVERSITY
Kelsey Layton, UATEACH STUDENT ORGANIZATION PRESIDENT, UNIVERSITY OF ARKANSAS AT FAYETTEVILLE
Emily Dennis, COMMUNITEACH STUDENT ORGANIZATION PRESIDENT, TOWSON UTEACH, TOWSON UNIVERSITY
Nick McKinley, COMMUNITEACH STUDENT ORGANIZATION OFFICER, TOWSON UTEACH, TOWSON UNIVERSITY

This session is for UTeach students who have begun (or are in the process of beginning) their UTeach student organization. The panelists, students and advisors from two universities, will present their successes and challenges in maintaining their campus organization.

WHAT IS UTEACH? | 203

Interactive Presentation

Larry Abraham, UTEACH AUSTIN CO-DIRECTOR, PROFESSOR IN KINESIOLOGY AND HEALTH EDUCATION, AND INTERIM DEAN OF THE SCHOOL OF UNDERGRADUATE STUDIES, UNIVERSITY OF TEXAS AT AUSTIN
Gay Stewart, CO-DIRECTOR OF WVUTEACH, EBERLY PROFESSOR OF STEM EDUCATION, DIRECTOR OF THE WVU CENTER FOR STEM EDUCATION, PROFESSOR OF PHYSICS, WEST VIRGINIA UNIVERSITY

This session is for anyone interested in learning more about the UTeach secondary math and science teacher preparation program. Presenters will describe the hallmarks of UTeach, its organizational structure, the roles of key program staff and faculty, and its partnership with local K–12 schools. The presenters also will review the program's results at UT Austin, including program enrollment and retention, student profiles, and teacher production and retention.

UTEACH COURSE OVERVIEW: PERSPECTIVES ON SCIENCE AND MATHEMATICS | 301

Interactive Presentation

Van Herd, LECTURER, DEPARTMENT OF HISTORY, UNIVERSITY OF TEXAS AT AUSTIN

This session provides an introduction to Perspectives on Science and Mathematics, one of nine UTeach courses. This course fosters an understanding of the historical development of the fields of science and mathematics.

IGNITING THE FLAME OF LEARNING IN A BIOLOGY CLASSROOM | SALON A

Hands-On Workshop

Jason Walker, COLLEGE READINESS PROGRAM MANAGER, NATIONAL MATH + SCIENCE INITIATIVE

Paulette Evans, MASTER TEACHER, UABTEACH, UNIVERSITY OF ALABAMA AT BIRMINGHAM

This session will cover strategies involved in connecting concepts across the curriculum to make the content accessible, relevant, and applicable. Participants will experience this kind of learning and the pedagogy facilitating it through two classroom-ready activities that will ignite not only the understanding of complex biological concepts but also the enthusiasm among students.

DYNAMIC EXPLORATION WITH DESMOS | SALON B

Hands-On Workshop

Daniel FitzPatrick, CLINICAL ASSISTANT PROFESSOR / MASTER TEACHER, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

Explore Desmos, the dynamic, online, and—best of all—free graphing utility. Bring a laptop, tablet, and/or phone to participate in the Function Carnival activity, and discover how Desmos can be used as an exploration tool for students and as a way to capture formative assessment for the teacher.

4:00 – 5:00 p.m.

HELPING NEW TEACHERS AND THEIR COACHES SURVIVE AND THRIVE: STEM TIPS, AN ONLINE TEACHER INDUCTION AND PROFESSIONAL SUPPORT SERVICE | 101

Interactive Presentation

Griff Jones, STEM TIPS DIRECTOR, UNIVERSITY OF FLORIDA

Emma Brady, STEM TIPS COORDINATOR, UNIVERSITY OF FLORIDA

Tom Dana, ASSOCIATE DEAN FOR ACADEMIC AFFAIRS, UNIVERSITY OF FLORIDA

Discover how STEM TIPS works with UTeach programs to help them build a customized hybrid support induction program to virtually connect their coaches and new teachers using an all-in-one e-coaching and professional development platform designed to provide instructional support, collaboration tools, and high-quality teaching resources.

UTEACH–VERIZON MOBILE TECHNOLOGY INITIATIVE PROJECT | 102

Hands-On Workshop

Carrie Culpepper, UTEACH-VERIZON PROJECT COORDINATOR, UNIVERSITY OF TEXAS AT AUSTIN

Lynn Kirby, CLINICAL ASSISTANT PROFESSOR / MASTER TEACHER, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

Daniel FitzPatrick, CLINICAL ASSISTANT PROFESSOR / MASTER TEACHER, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

Pamela Romero, ASSOCIATE DIRECTOR, UTEACH INSTITUTE

Marty Evans, EVALUATION COORDINATOR, UTEACH INSTITUTE

Master teachers and UTeach Institute evaluation staff will share the results from the second year of implementation of the UTeach–Verizon project. The project aims to develop and disseminate a mobile technology instructional module that will be integrated into Step 2. The session will highlight lessons that are in consideration for inclusion into the instructional module, as well as share successes, challenges, and lessons learned associated with the project.

CONDUCTING RESEARCH USING NATIONAL UTEACH IMPLEMENTATION DATA, PART 2 | 103

Hands-On Workshop

Alicia Beth, MANAGER, RESEARCH AND EVALUATION, UTEACH INSTITUTE

Amy Moreland, SITE COORDINATOR, UTEACH INSTITUTE

During this second of a two-part session, participants will engage in a facilitated activity with colleagues at partner universities who may be interested in collaborating on future research projects on UTeach programs or related topics. Like speed dating, but with research!

INTEGRATING THE NSF ROBERT NOYCE TEACHER SCHOLARSHIP PROGRAM WITH UTEACH | 202

Roundtable Discussion

Ramon Lopez, PROFESSOR, UNIVERSITY OF TEXAS AT ARLINGTON

Ann Cavallo, PROFESSOR, UNIVERSITY OF TEXAS AT ARLINGTON

Greg Hale, ASSISTANT DEAN, UNIVERSITY OF TEXAS AT ARLINGTON

The NSF Robert Noyce Teacher Scholarship Program provides resources that can be very advantageous to UTeach programs. In this roundtable discussion, we will present some history about Noyce grants at UT Arlington, and we will moderate a general discussion about best practices for integrating the NSF Robert Noyce Teacher Scholarship Program with UTeach. We encourage other UTeach programs with active Noyce grants, or those planning to submit proposals, to participate.

UTEACH INSTRUCTIONAL PROGRAM OVERVIEW | 203

Interactive Presentation

Michael DeGraff, INSTRUCTIONAL PROGRAM COORDINATOR, UTEACH INSTITUTE

Steve Case, DIRECTOR OF THE CENTER FOR STEM LEARNING, ASSISTANT DIRECTOR OF THE CENTER FOR SCIENCE EDUCATION, AND UKANTEACH CO-DIRECTOR, UNIVERSITY OF KANSAS

This session will provide a comprehensive overview of the design and implementation of the UTeach model program curriculum. Each of the UTeach courses will be discussed, as well as the UTeach program field component.

INTERVIEW TECHNIQUES FOR FUTURE TEACHERS | 301

Hands On Workshop

Rene Sanchez, PRINCIPAL, CESAR E. CHAVEZ HIGH SCHOOL

This workshop is designed for UTeach students. The objective is to assist session participants with crafting responses to common teacher interview questions. Students will also learn job search and interview etiquette and tips for how they should present themselves to school districts and potential employers.

SURPRISED BY PARABOLAS: SHOWING THE VALUE OF "DEEP KNOWLEDGE" USING QUADRATICS IN FUNCTIONS AND MODELING | SALON A

Hands-On Workshop

Steven Obenhaus, MASTER TEACHER, UNIVERSITY OF KANSAS

How well do you think you know parabolas? This seemingly simple curve with its corresponding equation has more to offer than most undergraduate math majors think. The UKanTeach Functions and Modeling course pools the lessons and applications of parabolas and quadratic from the UTeach curricular materials and adds a couple new and fun investigations. Come do these fun new inquiries and hear how the entire parabola/quadratic theme is used to show the value of knowing a seemingly simple topic deeply.

UTEACH COURSE OVERVIEW: APPRENTICE TEACHING | SALON B

Interactive Presentation

Kelli Allen, CLINICAL ASSISTANT PROFESSOR / MASTER TEACHER, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

Pam Powell, CLINICAL ASSISTANT PROFESSOR / MASTER TEACHER, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

This session will provide an overview of Apprentice Teaching, the final of nine UTeach courses. This course provides the final clinical preparation before UTeach students are recommended for certification.

5:15 – 8:30 p.m.

Welcome Reception, Poster Session, and Film Screening | Texas Union

Hosted by National Instruments

WELCOME RECEPTION & POSTER SESSION

FILM SCREENING: *PARTICLE FEVER*

With special guest speaker, Melissa Franklin

Melissa Franklin, the Mallinckrodt Professor of Physics at Harvard University, is an experimental particle physicist who is working on studies of hadron collisions produced by the Fermi National Accelerator Laboratory with the Collider Detector Facility (CDF) and the ATLAS experiment at the Large Hadron Collider (LHC). She will introduce the film and conduct a Q&A afterward.

Poster Descriptions

COURSE EXPOSITION—STUDENTS

A1. TEACHING CRITICAL WRITING IN A SCIENCE CLASSROOM

Brad Berger, STUDENT, NAUTEACH, NORTHERN ARIZONA UNIVERSITY

Integrating disciplines in Step 2 lessons is challenging. This poster describes a project in which students apply technical writing skills in a science context, with connections to the Common Core.

A2. THE UNIT CIRCLE: TEACHING WITH PURPOSE

Stephanie Carver, STUDENT, NAUTEACH, NORTHERN ARIZONA UNIVERSITY

This poster presents a CI inquiry-style lesson, with educational goals and example student work that shows how sine and cosine waves come from the unit circle.

A3. CLASSROOM INTERACTIONS: CRITICAL QUESTIONING

Mariah Cherry, STUDENT, UTEACH ARLINGTON, UNIVERSITY OF TEXAS AT ARLINGTON

Classroom Interactions explores the implementation of formative and summative assessments. This poster showcases interviews with current students, examples of questioning, and examples of how UTeachers develop their questioning skills.

A4. NATURAL SELECTION/GENETICS: A NATURAL EVOLUTION

Brooke Collins, STUDENT, UATEACH, UNIVERSITY OF ARKANSAS AT FAYETTEVILLE

Inquiry and Common Core are represented in this lesson sequence partnering natural selection and a current event to explore the genetics of a rare phenotype.

A5. CHALLENGING A "FORMULA FIRST" METHOD: A DISCOVERY LESSON FOR THE LAW OF SINES

Emily Dennis, STUDENT, TOWSON UTEACH, TOWSON UNIVERSITY

Created by sophomore Classroom Interactions students, this 10th-grade Pre-Calculus lesson displays the proof of the Law of Sines with an exploratory approach.

A6. HOW HAS THE INDUSTRIAL REVOLUTION AFFECTED THE ENVIRONMENT?

Dave Entwistle, STUDENT, UTEACH UMASS LOWELL, UNIVERSITY OF MASSACHUSETTS, LOWELL

The poster describes a Project-Based Instruction unit designed to explore the concepts of work and power though the mills in Lowell, MA.

A7. I'M PICKING UP GOOD PERMUTATIONS, WE'RE LEARNING SOME GREAT COMBINATIONS

Courtney Inabnitt, STUDENT, SKYTEACH, WESTERN KENTUCKY UNIVERSITY

Explore a secondary mathematics 5-E model lesson in classroom interactions through investigations of repeatable permutations in jazz music and ice cream!

A8. INTERACTIVE NOTEBOOKS IN FUNCTIONS AND MODELING

Clara Janskowski, STUDENT, UTEACH BROWNSVILLE, UNIVERSITY OF TEXAS AT BROWNSVILLE

Zulia Ramirez, STUDENT, UTEACH BROWNSVILLE, UNIVERSITY OF TEXAS AT BROWNSVILLE

Mathematicians use notebooks to record data, illustrations, charts, graphs, and their thinking. Our interactive notebooks will showcase our explorations in Functions and Modeling as our input and how we express our own ideas and process as an output.

A9. A STEP IN THE RIGHT DIRECTION

Zulema Martinez, STUDENT, UTEACH ARLINGTON, UNIVERSITY OF TEXAS AT ARLINGTON

This poster will compare lesson plans that were made at the beginning of Step 1, when students had limited lesson-planning knowledge, to those completed toward the end of the course. The poster will also include notes taken by the students with interactive journals and showcase pictures of activities performed.

A10. WOULD YOU DRINK WATER FROM THE MERRIMACK RIVER? FIELD EXPERIENCE FOR PROJECT-BASED INSTRUCTION

Alicia Negron, STUDENT, UTEACH UMASS LOWELL, UNIVERSITY OF MASSACHUSETTS, LOWELL

This presentation demonstrates how a unit about industrial watersheds can be built around a project in which students answer the question, "Would you drink water from the Merrimack River?" The presentation includes information about planning a field trip, designing a unit through backwards design, and working in an inclusion classroom.

A11. DIGGING UP THE PAST

Mark Schippel, STUDENT, UTEACH COLUMBUS, COLUMBUS STATE UNIVERSITY

In this Project-Based Instruction lesson, students investigate the fossils found in a local area and determine the geologic history of that site.

A12. FUNCTIONAL RELATIONS ON THE STATION

Kristen Schuler, STUDENT, CSUTEACH, CLEVELAND STATE UNIVERSITY

This poster highlights the 5-Es of an International Space Station-themed unit on functions, which was created and implemented for Classroom Interactions.

A13. 3D PRINTING IN FUNCTIONS AND MODELING

Connie Wu, STUDENT, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

Blaze Utz, Student, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

We created a homemade 3D printer for Functions and Regression Models, including mixing chemicals, playing with optics, and creating a staging device from a tripod.

A14. A SYMMETRICAL BLAST-OFF: USING A ROCKET LAUNCH TO EXPLORE QUADRATIC EQUATIONS

Darby McGee, STUDENT, UATEACH, UNIVERSITY OF ARKANSAS AT FAYETTEVILLE

This Step 2 poster describes integrated math/science lessons using a rocket launch activity to help students explore and understand quadratic equations and their multiple forms.

PROGRAM EXPOSITION—STUDENTS

B1. ANALYZING SLOPE TO DETERMINE WHETHER PRODUCTION IS SUCCESSFUL

Anna Baturin, STUDENT, UTEACH UMASS LOWELL, UNIVERSITY OF MASSACHUSETTS, LOWELL

This poster exhibits a unit on analyzing slope created for Project-Based Instruction. Students were asked to answer the question, "How can we analyze slope to determine if a business's production is successful?"

B2. STEM CONTENT LEARNING AND UNDERGRADUATE TEACHING ASSISTANT EXPERIENCES

Vivian Choong, STUDENT, UKANTEACH, UNIVERSITY OF KANSAS

Undergraduate teaching assistant positions reinforce STEM content learning and offer valuable classroom experiences in implementing inquiry during lectures and finding unique solutions to challenges.

B3. WETEACH WEST GEORGIA

Martisia Jackson, STUDENT, UTEACH WEST GEORGIA, UNIVERSITY OF WEST GEORGIA

This poster describes the WeTeach organization at the University of West Georgia, including background information, benefits of being a member, and past events/activities.

B4. ENGAGING K–12 STUDENTS THROUGH UABTEACH INTERNSHIPS

Muhammed Jan, STUDENT, UABTEACH, UNIVERSITY OF ALABAMA AT BIRMINGHAM

Jenna Robie, STUDENT, UABTEACH, UNIVERSITY OF ALABAMA AT BIRMINGHAM

This poster describes K–12 UABTeach internships and student interactions with UABTeach interns.

B5. UTEACH AMBASSADORS: PROMOTING UTEACH UMASS LOWELL

Clint Perry, STUDENT, UTEACH UMASS LOWELL, UNIVERSITY OF MASSACHUSETTS, LOWELL

Student Ambassadors promote the UTeach program on campus and in local high schools. Ambassadors are enthusiastic about UTeach and are model teachers in the program. This job also requires running meetings and communicating UTeach awareness to STEM faculty and majors.

B6. DEVELOPING UTEACH STUDENTS' LEADERSHIP SKILLS THROUGH A MULTI-PART LEADERSHIP INSTITUTE

Juanita Rojas, STUDENT, UTEACH PAN AMERICAN, UNIVERSITY OF TEXAS, PAN AMERICAN

Eva Rojas, STUDENT, UTEACH PAN AMERICAN, UNIVERSITY OF TEXAS, PAN AMERICAN

The UTeach Pan American student organization officers and members participated in a two-day interactive learning exchange with a local nonprofit organization.

B7. BRING THE ASTRONAUTS HOME: AN INVIGORATING PBL EXPERIENCE FOR HIGH SCHOOL ENGINEERING STUDENTS

Matt Varvir, STUDENT, UTEACH DALLAS, UNIVERSITY OF TEXAS AT DALLAS

Ju Lee, Student, UTEACH DALLAS, UNIVERSITY OF TEXAS AT DALLAS

Motivated by the Space Shuttle *Columbia* disaster, students design an emergency transport to allow astronauts to safely evacuate from the International Space Station to Earth.

B8. GROWTH OF STEMTREE

Taylor Tarbutton, STUDENT, UCA STEMTEACH, UNIVERSITY OF CENTRAL ARKANSAS

Taylor Newman, STUDENT, UCA STEMTEACH, UNIVERSITY OF CENTRAL ARKANSAS

Take a look at what it was like to start a STEMteach student organization. This poster showcases our journey through our first year and what we plan for the future.

RESEARCH—STUDENTS

C1. CONSTRUCTION AND ESTABLISHMENT OF A BENCHTOP AQUAPONIC SYSTEM AS A CONTEXT FOR TEACHING SCIENCE

Sofia Fernandez, STUDENT, FSU-TEACH, FLORIDA STATE UNIVERSITY

Through engineering a mobile aquaponic system, we have created an affordable and authentic teaching context for STEM classrooms: the Benchtop Aquaponic System.

C2. DECISION MAKING IN PHYSARUM POLYCEPHALUM

Bethany Geer, STUDENT, UTEACH DALLAS, UNIVERSITY OF TEXAS AT DALLAS

Slime molds were presented with sugar/salt mixtures in varying ratios to test their decision-making processes when faced with limited or contaminated resources.

C3. WHATEVER YOU LIKE: THE EFFECTS OF 5-E INQUIRY VERSUS DIRECT INSTRUCTION ON TEACHER RAPPORT

Hannah Keith, STUDENT, SKYTEACH, WESTERN KENTUCKY UNIVERSITY

This poster describes a Research Methods inquiry investigating the effects of teacher rapport and pedagogy (5-E inquiry versus direct instruction) on undergraduate mathematics students.

C4. SEEKING TO ENGAGE FEMALES IN STEM

Katey Kuzmak, STUDENT, UCCS TEACH, UNIVERSITY OF COLORADO, COLORADO SPRINGS

Allyssa Hinkle, STUDENT, UCCS TEACH, UNIVERSITY OF COLORADO, COLORADO SPRINGS

This research focuses on whether STEM programs outside of the classroom, like the Science Olympiad, increase female interest in STEM fields.

C5. MUSIC IN A BOTTLE

Olivia Rankin, STUDENT, UKANTEACH, UNIVERSITY OF KANSAS

It's common knowledge that when you blow across the top of a bottle it creates a sound, and as the level of liquid within the bottle changes so does the pitch of the sound. But what if the pitch could be controlled? Could a mathematical model be created to allow the user to treat the bottle as a consistent and reliable system?

C6. THE EFFECT OF COMPUTER-BASED, INTERACTIVE MODULES ON STUDENTS' LEARNING OF DIFFUSION

Rachel Rowland, STUDENT, UALRTEACH, UNIVERSITY OF ARKANSAS AT LITTLE ROCK

Computer-based modules implemented in 9th-grade biology classrooms showed increased scores compared to traditional, lecture-based classrooms. In this study, student data was used to answer three research questions on how student learning was affected.

C7. VARYING THE LENGTH OF A PENDULUM'S OSCILLATION TIME AND ITS EFFECT ON THE LISSAJOUS CURVE RATIO IN PENDULUM PAINTINGS

Amber Terrell, STUDENT, UTEACH COLUMBUS, COLUMBUS STATE UNIVERSITY

With a series of pendulum paintings, I measured the relationship between the length of the pendulum's oscillation time and the Lissajous curve ratio by varying the length of the oscillation times. The ratio was always 1.

OTHER—NON-COMPETITIVE

D1. STUDENT VIEWS OF EFFECTIVE TEACHING: A QUALITATIVE ANALYSIS

Robin Bollman, FACULTY / MASTER TEACHER, MTEACH, MIDDLE TENNESSEE STATE UNIVERSITY
Sally Millsap, FACULTY / MASTER TEACHER, MTEACH, MIDDLE TENNESSEE STATE UNIVERSITY

This poster reports results of a survey administered to MTeach students at various points in their education to assess their impressions of what constitutes effective teaching.

D2. ADVANTAGES OF IMPLEMENTING A CAMPUS LIVING AND LEARNING COMMUNITY FOR A UTEACH PROGRAM

Debra Duffy, PROGRAM COORDINATOR, MONARCHTEACH, OLD DOMINION UNIVERSITY
Diana Cantu, MASTER TEACHER, MONARCHTEACH, OLD DOMINION UNIVERSITY

Implementing a Living and Learning Community (LLC) in campus housing can be challenging. The LLC offers additional elements of support to student success, camaraderie, and retention. In addition, an LLC can serve as a venue for other program activities to help students complete program requirements and give them opportunities to participate in informal STEM education.

D3. ALREADY OVERWORKED AND UNDERPAID: RECRUITING AND RETAINING QUALITY IN-SERVICE TEACHERS TO PARTICIPATE WITH LIMITED RESOURCES

Mackenzie Lucky, STUDENT ADVISOR, CAL TEACH BERKELEY, UNIVERSITY OF CALIFORNIA, BERKELEY
Ryan Shiba, PROGRAM MANAGER, CAL TEACH BERKELEY, UNIVERSITY OF CALIFORNIA, BERKELEY

Mentor teachers are already overworked and underpaid, yet our programs all depend on the expertise of these professionals. How do we keep them engaged with our programs when funding is scarce?

D4. TEACHER RESEARCH TEAMS BENEFIT UNDERGRADUATE DEVELOPMENT IN EDUCATION

Carissa Marsh, STUDENT, CUTEACH, UNIVERSITY OF COLORADO, BOULDER
Luke DeGregori, STUDENT, CUTEACH, UNIVERSITY OF COLORADO, BOULDER

Teacher Research Teams develop important skills of undergraduates by exposing them to educational research and working closely with practicing teachers in math and science fields.

D5. VOICES FROM THE PAST: CSUTEACH GRADUATES TALK ABOUT THEIR PRACTICE

Kate O'Hara, FACULTY, CSUTEACH, CLEVELAND STATE UNIVERSITY
Lisa Suarez, INDUCTION AND PD COORDINATOR, CSUTEACH, CLEVELAND STATE UNIVERSITY

This poster highlights interviews with CSUteach graduates about how the program helped develop their current teaching practice.

D6. HOW TO TEACH SUCCESS: ACHIEVEMENT GOAL ORIENTATION IN PRESERVICE TEACHERS

Ryan Shiba, PROGRAM MANAGER, CAL TEACH, UNIVERSITY OF CALIFORNIA, BERKELEY
Elisa Stone, PROGRAM DIRECTOR, CAL TEACH, UNIVERSITY OF CALIFORNIA, BERKELEY

Research findings suggest that pre-service teacher achievement goal orientation is influenced through enrolling in Step 1 Math, which incorporates teaching methods, field experiences, and journal reflections.

D7. HOW DO WE PREPARE OUR STUDENTS FOR APPRENTICE TEACHING?: SCAFFOLDING INCREASED TEACHING RESPONSIBILITIES FOR THE SEQUENCE OF FIELD PLACEMENTS AT CAL TEACH BERKELEY AND MERCED

Elisa Stone, PROGRAM DIRECTOR, CAL TEACH, UNIVERSITY OF CALIFORNIA, BERKELEY
Chelsea Arnold, PROGRAM DIRECTOR, CAL TEACH MERCED, UNIVERSITY OF CALIFORNIA, BERKELEY

Are our students fully prepared to begin their student teaching in Apprentice Teaching? Are there gaps? How might identified gaps be addressed in earlier coursework? The Cal Teach programs at Berkeley and Merced have collaborated to initiate additional structure for fieldwork, defining in more detail the expectations for our students and mentor teachers during each course and developing a more explicitly sequenced scaffolding of teaching experiences across coursework.

Wednesday, May 20, 2015

8:00 – 8:45 a.m. Breakfast

BALLROOM

9:00am–10:00am and 10:00am–11:00am

OPEN HOUSE—UTEACH FACILITIES | MEET IN LOBBY BY REGISTRATION DESK

We will tour the UTeach facilities in Painter Hall (4th floor) in two groups. Meet in the lobby a few minutes before 9 or a few minutes before 10, and we'll walk over together. There's a map in your folder, in case you miss the group.

9:00 – 10:00 a.m.

TWO SESSIONS IN ONE: EFFECTIVENESS OF ARGUMENTATION IN HIGH SCHOOL BIOLOGY | 101

THE EFFECTIVENESS OF ARGUMENTATION IN FOSTERING SCIENCE FOR ALL: EXAMINING THE EFFECTS OF AMBITIOUS INSTRUCTION IN BIOLOGY LABORATORIES

Sherry Southerland, PROFESSOR AND CO-DIRECTOR, FSU-TEACH, FLORIDA STATE UNIVERSITY
Anna Strimaitis, GRADUATE RESEARCHER, FLORIDA STATE UNIVERSITY
Patrick Enderle, POSTDOCTORAL RESEARCHER, FLORIDA STATE UNIVERSITY
Victor Sampson, ASSOCIATE PROFESSOR, DEPARTMENT OF CURRICULUM AND INSTRUCTION, COLLEGE OF EDUCATION, UNIVERSITY OF TEXAS AT AUSTIN
Jonathan Grooms, POSTDOCTORAL RESEARCHER, FLORIDA STATE UNIVERSITY

This presentation will focus on contrasting case studies that examine the learning gains made by low-, moderate-, and high-achieving students in biology laboratories at two schools that use different approaches for biology laboratory instruction—one employing traditional verification laboratories and one employing laboratories structured around argument-driven inquiry, an ambitious instructional approach that actively engages students in the practices of science.

THE EFFICACY OF ARGUMENTATION IN SUPPORTING HIGH SCHOOL BIOLOGY STUDENTS' ENGAGEMENT IN THE NATURE AND PRACTICES OF SCIENCE

Ellen Granger, DIRECTOR OF THE OFFICE OF SCIENCE TEACHING ACTIVITIES, CO-DIRECTOR OF FSU-TEACH, FLORIDA STATE UNIVERSITY
Sherry Southerland, PROFESSOR AND CO-DIRECTOR, FSU-TEACH, FLORIDA STATE UNIVERSITY
Victor Sampson, ASSOCIATE PROFESSOR, DEPARTMENT OF CURRICULUM AND INSTRUCTION, COLLEGE OF EDUCATION, UNIVERSITY OF TEXAS AT AUSTIN
Jonathan Grooms, POSTDOCTORAL RESEARCHER, FLORIDA STATE UNIVERSITY
Patrick Enderle, POSTDOCTORAL RESEARCHER, FLORIDA STATE UNIVERSITY

Difficult epistemic practices like argumentation take time and practice to develop. The same is true for understanding of the nature of science. This study examined high school students' ability to participate in scientific practices and their understanding of the nature of science and science inquiry after engaging in a series of argument-driven inquiry (ADI) laboratories across an academic year and compared them with those of students who did not have the ADI experiences.

DATABASE DREAMS: CUSTOMIZING SOLUTIONS FOR FIELD PLACEMENT MATCHES, 5-E LESSON PLANS, AND STUDENT TRACKING | 102

Interactive Presentation

Ryan Shiba, PROGRAM MANAGER, CAL TEACH, UNIVERSITY OF CALIFORNIA, BERKELEY
Mackenzie Lucky, STUDENT ADVISOR, CAL TEACH, UNIVERSITY OF CALIFORNIA, BERKELEY
Andre Lewis, CONSULTANT, UNIVERSITY OF CALIFORNIA, BERKELEY

Does it take you longer than 90 seconds to make 82% of your field placement matches? Where do you send students when they ask for sample 5-E lesson plans? How do you keep track of your students' progress through the program? Learn about the Cal Teach Berkeley's database solutions to its complex problems: a field placement automator, a 5-E lesson plan repository, and a student-level database.

UTEACH COURSE OVERVIEW: STEP 1 AND 2 | 103

Interactive Presentation

Denise Ekberg, CLINICAL ASSISTANT PROFESSOR / MASTER TEACHER, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN
Lynn Kirby, CLINICAL ASSISTANT PROFESSOR / MASTER TEACHER, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

This session will provide an introduction to the Step courses, the first two UTeach courses taken by students. The Step courses provide students with early opportunities to "try out teaching."

THE MAKER MOVEMENT, 3D PRINTING, AND STEM EDUCATION | 104

Interactive Presentation

Lisa Suarez, INDUCTION AND PD COORDINATOR, CSUTEACH, CLEVELAND STATE UNIVERSITY
Kate O'Hara, MASTER TEACHER, CSUTEACH, CLEVELAND STATE UNIVERSITY

Learn how to use free 3D design software and 3D printers to make mathematics and science come to life for students. Learn how to design a 3D printed "race car" to study geometry, measurement, and physical science concepts. Learn how to use the Donors Choose website to get your own 3D printer for your classroom. And, if you don't have access to a 3D printer, learn how to use 3D design software and 3D "stack forms" to teach measurement and density.

BROKEN AIRPLANES, BROKEN SCHOOLS | 107

Interactive Presentation

Michael Marder, CO-DIRECTOR, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

Britain produced the first passenger jet and was poised to dominate air travel. Then planes started falling out of the sky. British engineers failed to fix them in time and ceded the civilian aerospace industry to the U.S. for decades. The root of the problem was mistaken theories about why things break and how to keep them safe. The U.S. produced the first system of universal high school education and was first with college for the masses. Then U.S. self-assurance plummeted as international assessments showed its students far behind the rest of the world. This is driving aggressive reforms to fix our failing schools. But what if these theories for why schools break and how to keep them safe are just as mistaken as the early British theories for airplanes? What will happen to our educational system then?

EMBEDDING "MICROMESSAGING" STEM EQUITY AWARENESS IN THE UTEACH COURSE SEQUENCE | 108

Interactive Presentation

Mary Urquhart, ASSOCIATE PROFESSOR AND DEPARTMENT HEAD, UNIVERSITY OF TEXAS AT DALLAS

Tegwin Pulley, TEXAS DIRECTOR, STEM EQUITY PIPELINE, NATIONAL ALLIANCE FOR PARTNERSHIPS IN EQUITY

Katie Donaldson, CLINICAL ASSISTANT PROFESSOR, UTEACH DALLAS, UNIVERSITY OF TEXAS AT DALLAS

UTeach Dallas has partnered with the National Alliance for Partnerships in Equity (NAPE) to bring "Micromessaging to Reach and Teach Every Student" STEM equity awareness to our pre-service teachers. In this workshop, we will introduce the concept of micromessaging and discuss the UTeach Dallas faculty (including master teachers) blueprint for weaving threads of the key components of NAPE's micromessaging program into the existing UTeach course sequence without major curriculum changes.

BUILDING COMMUNITIES OF STUDENTS AND MENTOR TEACHERS: DEMANDS OF RECRUITMENT AND RETENTION | 203

Interactive Presentation

Sumudu Lewis, PROGRAM DIRECTOR AND MASTER TEACHER, UTEACH UMASS LOWELL, UNIVERSITY OF MASSACHUSETTS, LOWELL

David Entwistle, STUDENT, UTEACH UMASS LOWELL, UNIVERSITY OF MASSACHUSETTS, LOWELL

Clint Perry, STUDENT, UTEACH UMASS LOWELL, UNIVERSITY OF MASSACHUSETTS, LOWELL

Recruiting students and quality mentor teachers have been the biggest challenges for UTeach UMass Lowell. However, we are finding ways to increase our off-campus and on-campus image through UTeach Ambassadors and the UTeach STARS Program, and we are working to build a community of UTeach mentors to support our program and share good practice.

MAKING THE MOST OF YOUR APPRENTICE TEACHING EXPERIENCE | 301

Interactive Presentation

Eliza Bobek, MASTER TEACHER, UTEACH UMASS LOWELL, UNIVERSITY OF MASSACHUSETTS, LOWELL

Anna Baturin, STUDENT, UTEACH UMASS LOWELL, UNIVERSITY OF MASSACHUSETTS, LOWELL

Alicia Negron, STUDENT, UTEACH UMASS LOWELL, UNIVERSITY OF MASSACHUSETTS, LOWELL

Participants will learn how to make the most of their student teaching experience from two UTeach students who have recently completed their semester of Apprentice Teaching. Topics covered will include classroom management, building relationships with cooperating teachers and university supervisors, organization and planning, and marketing yourself within your district.

10:15 – 11:15 a.m.

TWO SESSIONS IN ONE: EXPANDING ACCESS TO STEM EDUCATION | 101

INCREASING ACCESS TO STEM THROUGH STEAM: THE NSF ESCAPE PROGRAM

Brad Hughes, DIRECTOR SCIENCE EDUCATION AND MEDIA, NSF ESCAPE, UNIVERSITY OF CALIFORNIA, IRVINE

The Equitable Science Curriculum for Integrating Arts in Public Education program brings together experts in STEM science and education with artists and arts educators to provide innovative new approaches to learning sciences through the arts. This NSF grant ($6.4 million) produces Sustainable Professional Development for a national audience, researching the efficacy of STEAM approaches for reducing cognitive load through embodied cognition.

ONRAMPS STEM COURSES AND REPLICATION

Mark Daniels, CLINICAL PROFESSOR OF MATHEMATICS / ASSOCIATE CO-DIRECTOR OF UTEACH, UNIVERSITY OF TEXAS AT AUSTIN

Jennifer Saenz, COORDINATOR (ONRAMPS), CENTER FOR TEACHING AND LEARNING, UNIVERSITY OF TEXAS AT AUSTIN

OnRamps successfully offers STEM dual enrollment courses where UT credit is granted to high school and community college students enrolled in certain STEM courses. Secondary STEM teachers are trained and mentored by university faculty in order to present high-quality engaging STEM courses in their schools. These courses are intended to expose students to active learning methods and university-level thinking in selected STEM subjects.

UTEACH MONEY MATTERS | 102

Interactive Presentation

Amy Chavez, FINANCIAL ANALYST, UTEACH INSTITUTE

Michael Marder, CO-DIRECTOR, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

George Johnson, CO-DIRECTOR, CAL TEACH, UNIVERSITY OF CALIFORNIA, BERKELEY

Ryan Shiba, PROGRAM MANAGER, CAL TEACH, UNIVERSITY OF CALIFORNIA, BERKELEY

This session will discuss the financial side of the UTeach program. UTeach Austin and Cal Teach will discuss their program costs, funding sources, challenges, and strategies for sustainability.

UTEACH COURSE OVERVIEW: CLASSROOM INTERACTIONS | 103

Interactive Presentation

Walter Stroup, ASSOCIATE PROFESSOR OF STEM EDUCATION, DEPARTMENT OF CURRICULUM AND INSTRUCTION, COLLEGE OF EDUCATION, UNIVERSITY OF TEXAS AT AUSTIN

Shelly Rodriguez, CLINICAL ASSISTANT PROFESSOR / MASTER TEACHER, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

This session will provide an overview of Classroom Interactions, one of nine UTeach courses. This course continues the process of preparing students to teach mathematics and science in secondary settings by providing opportunities to see how theories explored in the Knowing and Learning in Mathematics and Science course play out in instructional settings.

MAKING IN K–12 | 104

Interactive Presentation

Chad Ratliff, ASSISTANT DIRECTOR OF INSTRUCTION, ALBEMARLE COUNTY PUBLIC SCHOOLS
Ana Josephson, TEACHER, ANN RICHARDS SCHOOL FOR YOUNG WOMEN LEADERS
Kat Sauter, TEACHER, ANN RICHARDS SCHOOL FOR YOUNG WOMEN LEADERS
Patrick Benfield, STEAM DIRECTOR, SAINT GABRIEL'S CATHOLIC SCHOOL
Mathew Fisher, ASSISTANT DIRECTOR, TEACHING RESOURCES CENTER / SELF DESIGN STUDIO, UNIVERSITY OF NORTH CAROLINA AT GREENSBORO

In this session, participants discuss the role of the maker movement in their classrooms, schools, and educational communities.

INTEGRATING ENGINEERING DESIGN, COMPUTATIONAL THINKING, AND 21ST-CENTURY SKILLS IN THE HIGH SCHOOL ENGINEERING CLASSROOM | 107

Interactive Presentation

Cheryl Farmer, PROGRAM DIRECTOR, UTEACHENGINEERING, UNIVERSITY OF TEXAS AT AUSTIN

Learn about an innovative, research-based engineering curriculum that fosters computational thinking and supports development of 21st-century skills. Engineer Your World engages students in authentic engineering practices, computational thinking, and 21st-century skills through a series of rigorous and relevant design challenges. Explore the curriculum, learn about research results, and engage in discussion with an experienced Engineer Your World teacher.

EXPANDING ACCESS TO PHYSICS FOR MIDDLE SCHOOL AND HIGH SCHOOL PRE-SERVICE TEACHERS: UNIVERSITY OF HOUSTON'S NEW PHYSICS COURSES | 108

Interactive Presentation

Paige Evans, CLINICAL ASSOCIATE PROFESSOR, TEACHHOUSTON, UNIVERSITY OF HOUSTON
Mariam Manuel, ADJUNCT PROFESSOR, UNIVERSITY OF HOUSTON

The teachHOUSTON and Physics faculty at the University of Houston developed and implemented two physics courses to engage middle school and high school pre-service teachers in interactive, inquiry-based teaching pedagogies for physics. This session examines both courses and will include discussion pertaining to content objectives, degree plans, benefits of these courses in teacher preparation programs, feedback from participants, and future courses.

WHAT IS UTEACH REPLICATION? | 203

Interactive Presentation

Kimberly Hughes, DIRECTOR, UTEACH INSTITUTE
Ellen Granger, DIRECTOR OF THE OFFICE OF SCIENCE TEACHING ACTIVITIES, CO-DIRECTOR OF FSU-TEACH, FLORIDA STATE UNIVERSITY

The UTeach Institute has developed a comprehensive approach to supporting the replication of UTeach at partnering university sites. This session provides an overview of the Institute's products and services, including site selection, communication of the UTeach model, operational and instructional support, evaluation services, and networking and community building opportunities. Participants will learn about the proposal process and selection criteria, initiating a UTeach program, planning and budgeting for a UTeach program, and expectations for program rollout and course fidelity.

EFFECTIVE CLASSROOM MANAGEMENT: STRATEGIES TO CREATE AND CAPTURE A COOPERATIVE CLASSROOM | 301

Hands-On Workshop

Scott Fray, MASTER TEACHER, NAUTEACH, NORTHERN ARIZONA UNIVERSITY
Lynn Kirby, CLINICAL ASSISTANT PROFESSOR / MASTER TEACHER, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

Similar to what happens in The Chronicles of Narnia, participants will be transported to a place that few people believe in. Rather than being introduced to fauns and talking animals, attendees are introduced to a world where they can achieve 100% participation from their students. If you are willing to consider the impossible and enter this world with an open mind, great adventures await! Part 1 of two classroom management sessions.

11:30 a.m. – 12:30 p.m.

EDTPA AND UTEACH | 101

Interactive Presentation

Deborah Gober, PROFESSOR OF MATHEMATICS EDUCATION, CO-DIRECTOR, UTEACH COLUMBUS, COLUMBUS STATE UNIVERSITY
Elisa Stone, PROGRAM DIRECTOR, CAL TEACH, UNIVERSITY OF CALIFORNIA, BERKELEY
Jennie Whitcomb, ASSOCIATE DEAN, TEACHER EDUCATION, UNIVERSITY OF COLORADO, BOULDER

The edTPA is a student teacher performance assessment developed by the Stanford Center for Assessment, Learning and Equity (SCALE) and is being implemented in teacher preparation programs across the country. In this session, representatives from three UTeach partner programs will discuss how they adapted the UTeach coursework to support their students through this process.

BEYOND THE INITIAL FUNDING PERIOD FOR UTEACH REPLICATION: WHAT DO OUR PROGRAMS LOOK LIKE NOW? | 102

Roundtable Discussion

Pamela Romero, ASSOCIATE DIRECTOR, UTEACH INSTITUTE
Ronda Brandon, VICE PRESIDENT, UTEACH EXPANSION PROGRAM, NATIONAL MATH + SCIENCE INITIATIVE

In this session, the UTeach Institute and the National Math + Science Initiative will facilitate a conversation among individuals involved in mature UTeach model programs on these programs' growth and change following the conclusion of initial grant funding and support. Topics include issues related to institutionalization, fundraising and sustainability, continued adaptations to the UTeach model, and potential opportunities for collaboration, networking, and support.

UTEACH AND COMPUTER SCIENCE PRINCIPLES: NATIONAL INITIATIVES TO REFORM INTRODUCTORY CURRICULA AND BROADEN PARTICIPATION FROM K–12 THROUGH UNIVERSITY | 103

Interactive Presentation

Bradley Beth, SENIOR PROGRAM COORDINATOR, PROJECT ENGAGE, UNIVERSITY OF TEXAS AT AUSTIN
Phil Sweany, ASSOCIATE PROFESSOR, COMPUTER SCIENCE AND ENGINEERING, UNIVERSITY OF NORTH TEXAS

Presenters will discuss Computer Science Principles, the emerging national standard for computer science education and the framework upon which the new AP Computer Science exam will be based, within the context of a number of state and national initiatives to reform computer science education. Curricular options and pathways will be reviewed, and presenters will discuss potential implications for UTeach programs and pre- and in-service teachers.

MAKETANK'S STEM TO STEAM: WELCOME TO THE ART SIDE | 104

Interactive Presentation

Rod Northcutt, ASSOCIATE PROFESSOR, MIAMI UNIVERSITY, CO-DIRECTOR, MAKETANK, INC.

Kate Currie, CO-DIRECTOR, MAKETANK, INC.

STEAM methods have the potential to increase access to STEM fields through active, making-based/project-based learning. MAKETANK (a nonprofit in Ohio run by artists) will survey their STEAM programs designed for primary/secondary and formal/informal education systems that are modular, scalable, and applicable to emerging educational technologies. Projects are making-based and involve collaborations between university students, community members, and K–12 teachers and students.

THE USE OF NON-DICHOTOMOUS MULTIPLE CHOICE (NDMC) QUESTIONS IN UTEACH CLASSES | 107

Interactive Presentation

Walter Stroup, ASSOCIATE PROFESSOR OF STEM EDUCATION, DEPARTMENT OF CURRICULUM AND INSTRUCTION, COLLEGE OF EDUCATION, UNIVERSITY OF TEXAS, AUSTIN

Chris Costello, SITE COORDINATOR, UTEACH INSTITUTE

Situated primarily in relation to a theme of formative assessment in lesson development, this session will provide an overview of the who, what, where, when, how, and why of the ongoing use of NDMCs. Much of the time will be reserved for a discussion of specific examples.

HELPING MENTORS BE BETTER MENTORS | 108

Roundtable Discussion

Edith Eskilson, MASTER TEACHER, UKANTEACH, UNIVERSITY OF KANSAS

Katrina Rothrock, MASTER TEACHER, UKANTEACH, UNIVERSITY OF KANSAS

Ever had a mentor not quite understand what expectations they should have for the student you've placed in their classroom? Their intentions are good, but they've missed the goal with your student? Participants will share ideas about how to work with local districts to better prepare mentor teachers to receive UTeach students in Step 1 through student teaching so that it can be a successful experience for all. Examples of mentor teacher feedback, expectations, and other ideas will be shared.

ENGINEERING PATHWAYS | 203

Roundtable Discussion

Jill Marshall, ASSOCIATE PROFESSOR, DEPARTMENT OF CURRICULUM AND INSTRUCTION, COLLEGE OF EDUCATION, UNIVERSITY OF TEXAS AT AUSTIN

Cecelia Wigal, UC FOUNDATION PROFESSOR, UNIVERSITY OF TENNESSEE AT CHATTANOOGA

John C. Mayer, CO-DIRECTOR, UABTEACH; PROFESSOR, DEPARTMENT OF MATHEMATICS, UNIVERSITY OF ALABAMA AT BIRMINGHAM

Malinda Zarske, ENGINEERING MASTER TEACHER, CU TEACH, UNIVERSITY OF COLORADO, BOULDER

Adam Fontecchio, ASSOCIATE DEAN OF ACADEMIC AFFAIRS; CO-DIRECTOR, DRAGONSTEACH; PROFESSOR, ELECTRICAL AND COMPUTER ENGINEERING, DREXEL UNIVERSITY

This session provides an opportunity for programs to share their experiences with the intersection of UTeach and Engineering pathways on their campuses. Participants will share recruiting, retention, and certification strategies as well as their struggles and successes with creating a UTeach engineering program.

CLASSROOM MANAGEMENT: A DAY AT THE IMPROV | 301

Interactive Presentation

Lynn Kirby, CLINICAL ASSISTANT PROFESSOR / MASTER TEACHER, UTEACH AUSTIN, UNIVERSITY OF TEXAS, AUSTIN

Scott Fray, MASTER TEACHER, NORTHERN ARIZONA UNIVERSITY

New teachers often report that classroom management is the largest problem they face at school. This session will allow participants the opportunity to apply proven classroom management strategies to solve different scenarios taken from today's classrooms. Solutions will be presented in front of the whole group as a skit. Fun will be had by all! And we will learn a lot, too! Part 2 of the Effective Classroom Management session.

12:30 – 1:30 p.m.

LUNCH | TEJAS DINING ROOM

1:45 – 2:45 p.m.

TWO SESSIONS IN ONE: IMPACTS OF MENTOR TEACHERS | 101

EVALUATING THE LEARNING ENVIRONMENTS WITHIN THE UTEACH PROGRAM AT ONE REPLICATION SITE

Kim Distin, PROGRAM COORDINATOR, UTEACH DALLAS, UNIVERSITY OF TEXAS AT DALLAS

How do the perceptions of pre-service teachers change as they progress through the UTeach program? Do they judge their classes differently as they learn how to teach others? Does observing classrooms of mentor teachers in the K–12 sector affect their evaluation of the UTeach program or their university classes? The learning environments of UTeach students are a prime study example to see how students compare learning environments and styles, and how this changes as they learn.

MENTORING AS PROFESSIONAL DEVELOPMENT

Jan Smith, MASTER TEACHER, IDOTEACH, BOISE STATE UNIVERSITY

This study investigated the impact mentoring IDoTeach students has had on mentors. Results from a qualitative survey of mentors will be shared and discussed as well as implications for future partnerships.

NATIONAL IMPLEMENTATION OF THE UTEACH MODEL: WHAT DO THE DATA TELL US? | 102

Interactive Presentation

Mary Lummus-Robinson, DATA COORDINATOR, UTEACH INSTITUTE

Pamela Romero, ASSOCIATE DIRECTOR, UTEACH INSTITUTE

Alicia Beth, MANAGER, RESEARCH AND EVALUATION, UTEACH INSTITUTE

Forty-four universities are now implementing secondary STEM teacher preparation programs based on the UTeach model. In this session, we will discuss broad patterns across seven years of data on national UTeach implementation and invite participants to share experiences from their own campuses.

UTEACH COURSE OVERVIEW: KNOWING AND LEARNING IN MATHEMATICS AND SCIENCE | 103

Interactive Presentation

Catherine Riegle-Crumb, ASSOCIATE PROFESSOR OF STEM EDUCATION, DEPARTMENT OF CURRICULUM AND INSTRUCTION, COLLEGE OF EDUCATION, UNIVERSITY OF TEXAS AT AUSTIN

Anthony Petrosino, ASSOCIATE PROFESSOR OF STEM EDUCATION, DEPARTMENT OF CURRICULUM AND INSTRUCTION, COLLEGE OF EDUCATION, UNIVERSITY OF TEXAS AT AUSTIN

This session will provide an introduction to Knowing and Learning in Mathematics and Science, one of nine UTeach courses. This course focuses on issues of what it means to know and learn secondary science and mathematics.

CREATE YOUR OWN SCIENCE MANIPULATIVES TO MAKE DIRECT INSTRUCTION ACTIVE! | 104

Roundtable Discussion

Katie Donaldson, MASTER TEACHER / ASSISTANT DIRECTOR, UTEACH DALLAS, UNIVERSITY OF TEXAS AT DALLAS

Kate York, MASTER TEACHER, UTEACH DALLAS, UNIVERSITY OF TEXAS AT DALLAS

Finding direct instruction a drag? Need a way to keep your students active, but on task? Try some manipulative-based teaching! Manipulatives are great way to engage ALL your students and provide scaffolding for your English language learners. Come play with all types and try your hand at creating some manipulatives of your own. Participants will receive access to electronic copies of manipulatives.

RATE OF CHANGE: EXPLORE, CONNECT, AND ANALYZE | 107

Interactive Presentation

Charla Holzbog, DIRECTOR OF MATHEMATICS, NATIONAL MATH + SCIENCE INITIATIVE

Marsha Scott, MASTER TEACHER, UNIVERSITY OF TEXAS AT ARLINGTON

Participants will explore an inquiry/problem-based lesson, in which students examine what happens to the rate of change in the height of fill material in an irregularly shaped container when the material is added at a constant rate and how to apply their conclusions to additional situations.

CUTEACH ENGINEERING: BRINGING THE "E" INTO STEM TEACHER LICENSURE FOR ALL STUDENTS | 108

Hands-On Workshop

Malinda Zarske, ENGINEERING MASTER TEACHER, CU TEACH, UNIVERSITY OF COLORADO, BOULDER

Jacquelyn Sullivan, CO-DIRECTOR, GENERAL ENGINEERING PLUS PROGRAM, UNIVERSITY OF COLORADO, BOULDER

Learn about CU Boulder's new CU Teach Engineering program—where undergraduate engineering students earn secondary science or math teacher licensure *within* a highly flexible General Engineering degree. This new pathway also allows all science and math majors to experience engineering design in the K–12 classroom. During this session, you will participate in a hands-on engineering design activity from our STEP courses and learn how we are creating a common language around engineering design for all future CU Teach STEM teachers.

DEVELOPMENT OFFICERS PANEL: SUSTAINING YOUR PROGRAM WITH PRIVATE SUPPORT | 203

Panel Discussion

Maria Allen, ASSOCIATE DIRECTOR, DEVELOPMENT, UTEACH INSTITUTE

Stacey Smith, DIRECTOR OF CORPORATE AND FOUNDATION RELATIONS, OKLAHOMA STATE UNIVERSITY

Rebecca Gordon, ASSOCIATE VICE PRESIDENT FOR DEVELOPMENT, UNIVERSITY OF ALABAMA AT BIRMINGHAM

Lee Meadows, CO-DIRECTOR, UABTEACH; ASSOCIATE PROFESSOR, SECONDARY SCIENCE EDUCATION, UNIVERSITY OF ALABAMA AT BIRMINGHAM

Kelsey Evans, CHIEF EXTERNAL RELATIONS OFFICER, COLLEGE OF NATURAL SCIENCES, UNIVERSITY OF TEXAS AT AUSTIN

UTeach partners discuss how they navigate issues related to fundraising for their programs. Presenters include development officers and program representatives who raise funds for program sustainability.

SUPPORTING NEW TEACHERS: INDUCTION PANEL | AMPHITHEATER 204

Panel Discussion

Kelli Allen, CLINICAL ASSISTANT PROFESSOR / MASTER TEACHER, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

Justin Seeley, AP BIOLOGY/LEP BIOLOGY TEACHER, SOUTH HILLS HIGH SCHOOL

Kevin Garcia, K–12 DISTRICT MATHEMATICS COORDINATOR, SOUTHSIDE INDEPENDENT SCHOOL DISTRICT

David Robinson, PLTW ENGINEERING AND ROBOTICS TEACHER, MURCHISON MIDDLE SCHOOL

Wai (William) Chan, SCIENCE TEACHER, WILLIAM P. CLEMENTS HIGH SCHOOL

Richard Harrison, ALGEBRA I / PRE-ALGEBRA TEACHER, LBJ HIGH SCHOOL

What kind of support do new teachers need and value from their preparation programs? UTeach graduates reflect on their experiences as first- and second-year teachers.

EXAMINING THE INTERSECTION BETWEEN CURRICULUM AND THE MAKER MOVEMENT THROUGH THE LENS OF PEDAGOGICAL FRAMEWORKS | 301

Interactive Presentation

Shaunna Smith, ASSISTANT PROFESSOR OF EDUCATIONAL TECHNOLOGY, TEXAS STATE UNIVERSITY

Naomi Thompson, GRADUATE RESEARCH ASSISTANT, INDIANA UNIVERSITY

Walter Stroup, ASSOCIATE PROFESSOR OF STEM EDUCATION, DEPARTMENT OF CURRICULUM AND INSTRUCTION, COLLEGE OF EDUCATION, UNIVERSITY OF TEXAS AT AUSTIN

Ben Leduc-Mills, R&D SWISS ARMY KNIFE, SPARKFUN ELECTRONICS, INC.

In this session, we will examine some of the frameworks/theories that could inform the maker movement in education. We will pay specific attention to philosophies for learning that guide the continued development of the UTeach program.

3:00 – 4:00 p.m.

THE CAEP CRUSADERS: NAVIGATING THE ACCREDITATION WATERS AS A UTEACH REPLICATION SITE | 102

Roundtable Discussion

Grant Clayton, ASSISTANT PROFESSOR, UNIVERSITY OF COLORADO, COLORADO SPRINGS

Pat McGuire, ASSISTANT PROFESSOR, UNIVERSITY OF COLORADO, COLORADO SPRINGS

We will discuss the Council for the Accreditation of Educator Preparation (CAEP) accreditation process and how the UCCSTeach program navigated these new waters in November 2014. Challenges associated with the process and points of intersection related to data collection, SPA reports, and resources to be shared across replication sites will be discussed.

UTEACH CO-DIRECTORS SPECIAL INTEREST GROUP | 103

Roundtable Discussion

Deborah Gober, CO-DIRECTOR, UTEACH COLUMBUS; PROFESSOR OF TEACHER EDUCATION, COLUMBUS STATE UNIVERSITY

Sherry Southerland, CO-DIRECTOR, FSU-TEACH; PROFESSOR AND INTERIM CHAIR OF THE SCHOOL OF TEACHER EDUCATION; FELLOW OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCES, FLORIDA STATE UNIVERSITY

Program co-directors, college deans, and other university leaders will convene to discuss topics of interest to the group.

A CONSTRUCTIVIST APPROACH TO TEACHING WITH MOBILE TECHNOLOGY | 104

Hands-On Workshop

Carrie Culpepper, PROFESSIONAL DEVELOPMENT MANAGER, UTEACH, UNIVERSITY OF TEXAS AT AUSTIN

Lynn Kirby, CLINICAL ASSISTANT PROFESSOR / MASTER TEACHER, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

Daniel FitzPatrick, CLINICAL ASSISTANT PROFESSOR / MASTER TEACHER, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

Mobile technology has become more readily available to students in today's classrooms, but what role do they play for the constructivist teacher? UTeach Master Teachers involved in the Verizon Foundation Innovative Learning Schools Project will share their experiences and demo lessons implementing mobile technology as a tool for inquiry, collaboration, and assessment.

NAVIGATING THE HALLWAYS OF STUDENT-CENTERED INSTRUCTION: AN ACTIVITY CREATED FOR INDUCTION SUPPORT | 107

Hands-On Workshop

Cindy Dyar, MASTER TEACHER, FSU-TEACH, FLORIDA STATE UNIVERSITY

Logan Chalfant, MASTER TEACHER, FSU-TEACH, FLORIDA STATE UNIVERSITY

During our induction visits, we have noticed some common themes expressed by our graduates. Our graduates often struggle with marrying the tenets of FSU-Teach with the more traditional environments they find themselves in. In an effort to support them, we developed an activity that promotes reflection and discussion around several of these issues.

UTEACH COURSE OVERVIEW: RESEARCH METHODS | 108

Interactive Presentation

Michael Marder, CO-DIRECTOR, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

This session will provide an introduction to Research Methods, one of nine UTeach courses. This course engages future teachers in a series of independent scientific inquiries.

FUNDER PANEL: WHY AND HOW DO FUNDERS GIVE? | AMPHITHEATER 204

Panel Discussion

Tracy LaQuey Parker, SENIOR VICE PRESIDENT OF BUSINESS DEVELOPMENT, PARKER SOLUTIONS GROUP

Kerri Briggs, EDUCATION POLICY OFFICER, EXXONMOBIL

Leslie Gurrola, STRATEGY MANAGER, GREATER TEXAS FOUNDATION

Ray Hsu, SENIOR MANAGER, ACADEMIC PROGRAMS, NATIONAL INSTRUMENTS

Dr. Claude Everett Cooke and Joyce Milton Cooke, COOKE LAW FIRM

This session will discuss the importance of private fund-raising to support the sustainability of UTeach programs. The panelists include individual, corporate, and foundation donors to UTeach programs. Donors will discuss what motivated their gift and provide insight into their expectations when providing support.

COLLABORATIVE MATHEMATICS: PROBLEM SOLVING ACROSS THE GLOBE | 301

Hands-On Workshop

Shelly Rodriguez, CLINICAL ASSISTANT PROFESSOR / MASTER TEACHER, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

Krystal Rankhorn, STUDENT, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

Michael DeGraff, INSTRUCTIONAL PROGRAM COORDINATOR, UTEACH INSTITUTE

In this session, we explore an innovative approach to connected learning. Participants will solve a problem from the Collaborative Mathematics website and then create a video documenting their problem-solving process. These videos will then be shared on the Collaborative Mathematics website for all to see the variety of approaches to both the problem and the documentation of the problem solving. Collaborative Mathematics is a project started by former UTeach Master Teacher, Jason Ermer.

4:15 – 5:15 p.m.

TWO SESSIONS IN ONE: TEACHER IDENTITY | 101

FACTORS IMPACTING TEACHER IDENTITY, CAREER INTENTIONS, AND TURNOVER RATES OF STEM TEACHERS

Interactive Presentation

Joanne Goodell, PROFESSOR, CLEVELAND STATE UNIVERSITY

Bill Kosteas, ASSOCIATE PROFESSOR, CLEVELAND STATE UNIVERSITY

Mike Horvath, ASSOCIATE PROFESSOR, CLEVELAND STATE UNIVERSITY

This session will provide an update on the project presented at last year's conference. We will present the methodology, describe the survey instruments, and discuss the hypotheses the investigators plan to address. In addition, we will share the results of a preliminary analysis regarding the relationship between teacher identity, field courses, and career intentions, as well as early career decisions, using data from the UTeach end-of-program and alumni surveys.

LEARNING TO TEACH SCIENCE IN A HIGH-NEEDS SETTING: THE INTERSECTION OF EMOTIONS AND IDENTITY

Interactive Presentation

Sherry Southerland, PROFESSOR AND CO-DIRECTOR, FSU-TEACH, FLORIDA STATE UNIVERSITY

Karen Rose, MASTER TEACHER, FSU-TEACH, FLORIDA STATE UNIVERSITY

The research focuses on a central question: How do the identity and emotions of pre-service science teachers interact with the implementation of student-centered teaching in a high needs school? We used qualitative naturalistic methods to construct a series of three case studies of pre-service science teachers, with data collection beginning the semester before and extending throughout their student teaching experience.

CAEP ACCREDITATION AND THE UTEACH MODEL | 102

Interactive Presentation

Stevie Chepko, SENIOR VICE PRESIDENT, ACCREDITATION, CAEP

Hear about the new Council for the Accreditation of Educator Preparation (CAEP) accreditation process with a focus on how it relates to secondary STEM education programs.

PREPARING ALUMNI TO BE LIFELONG LEARNERS | 103

Roundtable Discussion

Katrina Rothrock, MASTER TEACHER, UKANTEACH, UNIVERSITY OF KANSAS

Getting students involved in professional development before they walk off campus can both help establish a commitment to continued learning AND build students' resumes in preparation for a job search. UKanTeach is building a PD program that begins before student teaching and continues into the first few years of students' professional careers and beyond. Come and share what your UTeach program has developed for alumni PD and what your alumni are asking for, or find out how to get started.

UTEACH AND THE MAKER MOVEMENT: IS THERE A CONNECTION? | 104

Interactive Presentation

Mark Spencer, LECTURER, CAL TEACH, UNIVERSITY OF CALIFORNIA, BERKELEY

Daniel FitzPatrick, CLINICAL ASSISTANT PROFESSOR / MASTER TEACHER, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

Walter Stroup, ASSOCIATE PROFESSOR AND STEM PROGRAM COORDINATOR, DEPARTMENT OF CURRICULUM AND INSTRUCTION, COLLEGE OF EDUCATION, UNIVERSITY OF TEXAS AT AUSTIN

Chris Costello, SITE COORDINATOR, UTEACH INSTITUTE

Jason Harron, PHD STUDENT, CURRICULUM AND INSTRUCTION, UNIVERSITY OF TEXAS AT AUSTIN

Shelly Rodriguez, CLINICAL ASSISTANT PROFESSOR / MASTER TEACHER, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

Panelists will discuss activities, lessons, or topics they have developed or adapted in their UTeach courses. Each of the examples connects to aspects of the maker movement. These examples will provide a context to discuss some of the potential opportunities and issues related to the emergence of the maker movement in education.

DEVELOPMENT SPECIAL INTEREST GROUP | 107

Roundtable Discussion

Maria Allen, ASSOCIATE DIRECTOR, DEVELOPMENT, UTEACH INSTITUTE

Ronda Brandon, VICE PRESIDENT, UTEACH EXPANSION PROGRAM, NATIONAL MATH + SCIENCE INITIATIVE

Join us for a discussion of a variety of topics related to fundraising for UTeach programs.

GRAPHING REAL-TIME TEMPERATURE DATA IN AN INVESTIGATIVE MIDDLE OR HIGH SCHOOL STATISTICS LESSON | 108

Hands-On Workshop

Peggy Bertrand, CLINICAL ASSISTANT PROFESSOR, VOLSTEACH, UNIVERSITY OF TENNESSEE, KNOXVILLE

Nivedita Ganguly, CLINICAL ASSISTANT PROFESSOR, VOLSTEACH, UNIVERSITY OF TENNESSEE, KNOXVILLE

Participants will use mobile technology to create box-and-whisker plots of real-time temperature data in a model lesson that is appropriate for middle or high school math. The session is exploratory and interdisciplinary, with connections to geography and meteorology. Prior familiarity with box plots is not required to attend the session. Participants will discuss the benefits of allowing students to intuitively interpret box plots before learning the details of how they are calculated.

ROUNDTABLE WITH UTEACH GRADUATES (RESTRICTED TO CURRENT UTEACH STUDENTS) | 301

Roundtable Discussion

Maria Negley, MATH TEACHER AND THINK FORWARD TRAINER, MANOR NEW TECHNOLOGY HIGH SCHOOL

Mark Townsend, HIGH SCHOOL MATHEMATICS TEACHER, NYOS CHARTER SCHOOL

Nicole Reneau, PREAP/AP MATH TEACHER, ANDERSON HIGH SCHOOL

Stephanie Klenzendorf, BIOLOGY TEACHER, STONY POINT HIGH SCHOOL

Mamie Huang, IPC/CHEMISTRY/AP ENVIRONMENTAL SCIENCE LONG-TERM SUBSTITUTE, ROUSE HIGH SCHOOL

Everything you've wanted to know about life after UTeach but have been afraid to ask. At least in front of your instructors. UTeach grads will answer questions regarding finding a job, getting through the first two years, the realities of teaching using diverse instructional styles in a variety of contexts, etc.

UNIVERSITY REPLICATION PANEL: LESSONS LEARNED | AMPHITHEATER 204

Panel Discussion

Bill Gammons, MASTER TEACHER, UTEACH DALLAS, UNIVERSITY OF TEXAS AT DALLAS

Lee Meadows, CO-DIRECTOR, UABTEACH; ASSOCIATE PROFESSOR, SECONDARY SCIENCE EDUCATION, UNIVERSITY OF ALABAMA AT BIRMINGHAM

Scott Fray, MASTER TEACHER, NAUTEACH, NORTHERN ARIZONA UNIVERSITY

Elisa Stone, PROGRAM DIRECTOR, CAL TEACH, UNIVERSITY OF CALIFORNIA, BERKELEY

Gail Kaplan, PROFESSOR, DEPARTMENT OF MATHEMATICS, TOWSON UNIVERSITY

This panel brings together colleagues from UTeach partner universities (co-directors, faculty members, master teachers) to discuss lessons learned while implementing a UTeach model program. Panel members will discuss student recruitment and support, institutional support, implementing courses, field placements, working with colleagues in other departments, and fundraising.

6:00 – 9:00 p.m.

Reception and Dinner hosted by ExxonMobil Corporation | Ballroom

TALKING SCIENCE TO NON-SCIENTISTS: SADDAM HUSSEIN'S SECRET OCTOPUS AND OTHER STORIES

Robert Krulwich, CO-HOST, NPR'S RADIOLAB

This presentation will be about how to talk about complex science to people who don't think they have the knowledge or patience to listen. Krulwich's argument is that anybody, and he means ANYBODY—even a kid who got a C+ in biology in 9th grade and hopes never to think about science again—can be seduced into listening to and enjoying a nuanced tale about how the world works and how things came to be.

Thursday, May 21, 2015

8:00 – 9:15 a.m. Breakfast

TEJAS DINING ROOM

INTEGRATING COMPUTER SCIENCE INTO THE UTEACH CURRICULUM | 102

Interactive Presentation

Alicia Beth, MANAGER, RESEARCH AND EVALUATION, UTEACH INSTITUTE
Bradley Beth, SENIOR PROGRAM COORDINATOR, PROJECT ENGAGE, UNIVERSITY OF TEXAS AT AUSTIN
Bryan Hill, ASSISTANT DEAN, STUDENT RECRUITMENT AND INTERNATIONAL PROGRAMS, UNIVERSITY OF ARKANSAS AT FAYETTEVILLE
Lee Meadows, ASSOCIATE PROFESSOR, SECONDARY SCIENCE EDUCATION; CO-DIRECTOR, UABTEACH, UNIVERSITY OF ALABAMA AT BIRMINGHAM
John C. Mayer, PROFESSOR, MATHEMATICS; CO-DIRECTOR, UABTEACH, UNIVERSITY OF ALABAMA AT BIRMINGHAM PHIL SWEANY, ASSOCIATE PROFESSOR, COMPUTER SCIENCE AND EDUCATION, UNIVERSITY OF NORTH TEXAS

During the first half of the session, institutions that submitted National Science Foundation STEM + Computing Partnerships proposals will describe the projects they proposed. The second half of the session will be allocated to discussing a common theme across proposals of identifying potential opportunities for integrating computer science content and computational thinking constructs into the UTeach curriculum.

FLORIDA REPLICATION SITES MEETING (CLOSED) | 103

Audrey De Zeeuw, SITE COORDINATOR, UTEACH INSTITUTE

This is a closed session for current Florida replication sites and will focus on topics of interest and relevant updates.

GEORGIA REPLICATION SITES MEETING (CLOSED) | 104

Chris Costello, SITE COORDINATOR, UTEACH INSTITUTE

This is a closed session for current Georgia replication sites and will focus on topics of interest and relevant updates.

TENNESSEE REPLICATION SITES MEETING (CLOSED) | 107

Ashley Welch, MANAGER OF SITE SUPPORT, UTEACH INSTITUTE

This is a closed session for current Tennessee replication sites and will focus on topics of interest and relevant updates.

ARKANSAS REPLICATION SITES MEETING (CLOSED) | 108

Susan Harriman, DIRECTOR OF POLICY AND SPECIAL PROJECTS, ARKANSAS DEPARTMENT OF EDUCATION

This is a closed session for current Arkansas replication sites and will focus on topics of interest and relevant updates.

TEXAS REPLICATION SITES MEETING (CLOSED) | 301

Tracie Ellis, SITE COORDINATOR, UTEACH INSTITUTE

This is a closed session for current Texas replication sites and will focus on topics of interest and relevant updates.

9:30 – 10:30 a.m. Closing Plenary

MAKING GOOD: EQUALITY AND DIVERSITY IN MAKER EDUCATION | AMPHITHEATER 204

Leah Buechley

The first issue of MAKE magazine was published in 2005. The ascendancy of the "maker movement" over the last 10 years has created exciting new opportunities for some, but it has arguably exacerbated educational inequalities—providing valuable resources to a privileged few while reinforcing gender and racial stereotypes. This talk takes a celebratory and critical look at the history of the maker movement and its relationship to education. Mainstream maker approaches are contrasted with tools and techniques designed to support diversity and equality.

10:45 – 11:45 a.m.

UTEACH ARKANSAS MARKETING CAMPAIGN: A STATEWIDE INITIATIVE TO GET HIGH SCHOOL SENIORS INTERESTED IN STEM TEACHING | 101

Interactive Presentation

Lisa Palacios, ASSISTANT DEAN OF STUDENT SUCCESS, UNIVERSITY OF ARKANSAS AT LITTLE ROCK
Michelle Buchanan, MASTER TEACHER, UCA STEMTEACH, UNIVERSITY OF CENTRAL ARKANSAS
Gail Hughes, PROFESSOR OF EDUCATIONAL LEADERSHIP; CO-DIRECTOR, UALRTEACH, UNIVERSITY OF ARKANSAS AT LITTLE ROCK
Sheri Vaughn, ASSISTANT DIRECTOR, UATEACH, UNIVERSITY OF ARKANSAS AT FAYETTEVILLE

The three UTeach programs in the state of Arkansas (UA, UALR, UCA), with the support of Arkansas Department of Higher Education, worked with a marketing firm to distribute a statewide campaign in less than three months. The campaign included innovative television, website, and social media ads to encourage high school seniors to put together a 15-second video to demonstrate a STEM concept for a chance to win a $5,000 scholarship to one of the three schools to participate in UTeach.

GENERATIVE LESSON DESIGN AND THE 5-ES | 102

Interactive Presentation

Walter Stroup, ASSOCIATE PROFESSOR OF STEM EDUCATION, DEPARTMENT OF CURRICULUM AND INSTRUCTION, COLLEGE OF EDUCATION, UNIVERSITY OF TEXAS AT AUSTIN
Shelly Rodriguez, CLINICAL ASSISTANT PROFESSOR / MASTER TEACHER, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

This session will provide a brief overview and set of practical materials (rubrics, etc.) for supporting generative lesson design developed from working with students in Classroom Interactions and other UTeach courses. Examples and relations to 5-E lesson plan development will be discussed.

TEACHING CRITICAL AND CREATIVE THINKING: ADVANCED ACADEMIC STRATEGIES ARE FOR ALL STUDENTS! | 103

Hands-On Workshop

Lynn Kirby, *CLINICAL ASSISTANT PROFESSOR / MASTER TEACHER, UTEACH AUSTIN, UNIVERSITY OF TEXAS, AUSTIN*

Nivedita Ganguly, MASTER TEACHER, VOLSTEACH, UNIVERSITY OF TENNESSEE, KNOXVILLE

Nita Ganguly and Lynn Kirby have been working with the College Board for more than 15 years to widen the pipeline to AP classes by making them inclusive of students from all backgrounds. Teaching creative/critical thinking can increase the engagement and success of your students and make your classroom a wonderful place to learn.

E-TEXTILES: A TOOL FOR CONSTRUCTIVIST EDUCATION | 104

Interactive Presentation

Naomi Thompson, GRADUATE RESEARCH ASSISTANT, INDIANA UNIVERSITY

Ben Leduc-Mills, R&D SWISS ARMY KNIFE, SPARKFUN ELECTRONICS, INC.

Jeff Branson, EDUCATIONAL OUTREACH COORDINATOR, SPARKFUN ELECTRONICS, INC.

In this session, you'll experience the power of e-textiles for interest-driven learning. E-textiles are textile artifacts that are computationally generated or that contain embedded computers (e.g., LilyPad Arduino). Introducing such novel, cross-disciplinary technologies can broaden participation, particularly by women, as well as improve learning outcomes.

THE UTEACH STEM EDUCATORS ASSOCIATION (USEA): A PROFESSIONAL ASSOCIATION FOR UTEACH | 105

Interactive Presentation

Kimberly Hughes, DIRECTOR, UTEACH INSTITUTE

Ellen Granger, CO-DIRECTOR, FSU-TEACH, FLORIDA STATE UNIVERSITY

Martha Day, CO-DIRECTOR, SKYTEACH, WESTERN KENTUCKY UNIVERSITY

This session will provide an overview of USEA, the professional association established for UTeach programs and alumni. Additionally, this session will include an Annual Business Meeting for current USEA members.

THE ART OF JUGGLING TO PREPARE AND SERVE TEACHERS: CHALLENGES AND ADVANTAGES OF PROGRAM CROSS-POLLINATION AND LEVERAGING IN UTEACH REPLICATION AND SUSTAINABILITY | 106

Roundtable Discussion

Mary Urquhart, ASSISTANT PROFESSOR AND DEPARTMENT HEAD, UNIVERSITY OF TEXAS, DALLAS

Stephanie Taylor, DEAN'S FELLOW, UNIVERSITY OF TEXAS, DALLAS

UTeach replication has had major impacts on the small Department of Science and Mathematics Education (SME) at UT Dallas. From dramatic shifts in programs and faculty makeup to resources and data collection, the impact of UTeach replication on SME has been overwhelmingly positive—but not without its challenges. See how our individual initiatives have overlapped and cross-pollinated, share your own experiences, and discuss how strategically saying "yes" to new initiatives can strengthen existing programs.

MASTER TEACHER SPECIAL INTEREST GROUP | 107

Roundtable Discussion

Daniel FitzPatrick, CLINICAL ASSISTANT PROFESSOR / MASTER TEACHER, UTEACH AUSTIN, UNIVERSITY OF TEXAS AT AUSTIN

Peggy Bertrand, MASTER TEACHER, VOLSTEACH, UNIVERSITY OF TENNESSEE, KNOXVILLE

Julie Andrew, MASTER TEACHER, CUTEACH, UNIVERSITY OF COLORADO, BOULDER

Sumudu Lewis, MASTER TEACHER, UTEACH UMASS LOWELL, UNIVERSITY OF MASSACHUSETTS, LOWELL

Carol Williamson, MASTER TEACHER, UKANTEACH, UNIVERSITY OF KANSAS

Benedikt Harrer, LECTURER, UNIVERSITY OF CALIFORNIA, BERKELEY

This session is for master teachers to share ideas and learn from one another. This year's session will focus specifically on mobile technology experiences.

UTEACH COURSE OVERVIEW: FUNCTIONS AND MODELING | 108

Interactive Presentation

Mark Daniels, ASSOCIATE DIRECTOR, CLINICAL PROFESSOR OF MATHEMATICS, UNIVERSITY OF TEXAS AT AUSTIN

This session will provide an introduction to Functions and Modeling, one of nine UTeach courses. In this course, students engage in explorations and lab activities designed to strengthen and expand their knowledge of the topics found in secondary mathematics.

UTEACH COURSE OVERVIEW: PROJECT-BASED INSTRUCTION | 301

Interactive Presentation

Flavio Azevedo, ASSISTANT PROFESSOR, STEM EDUCATION, UNIVERSITY OF TEXAS AT AUSTIN

Victor Sampson, ASSOCIATE PROFESSOR, DEPARTMENT OF CURRICULUM AND INSTRUCTION, COLLEGE OF EDUCATION, UNIVERSITY OF TEXAS AT AUSTIN

This session will provide an overview of Project-Based Instruction, one of nine UTeach courses. This course focuses on developing problem- and project-based units of instruction.

11:45 a.m. – 1:00 p.m.

LUNCH | TEJAS DINING ROOM

1:00 p.m.

ADJOURN

UTEACH PARTNERS AND SUPPORTERS

Educational Advancement Foundation (EAF)

The Educational Advancement Foundation is a 501(c)(3) philanthropic organization that strives to strengthen mathematics education through fostering critical thinking and problem solving by ensuring all students have an inquiry-based learning experience in mathematics.

ExxonMobil

The ExxonMobil Foundation focuses on math and science education because they are—and will increasingly be—the universal languages of the global workplace and are critical tools for success in today's high-tech world. Through ExxonMobil's Math and Science Initiative, more than $818 million has been provided for education programs, with $140 million directed specifically toward teacher training programs in the United States. Through the work of our partners, more than 72,000 teachers have been trained over the past decade.

MIT Press

The MIT Press publishes a number of books designed for UTeach Conference attendees. Please drop by our display table to see the books in our exciting Interconnections Collection: Tekinbas et al., *Gaming the System*; Peppler et al., *Script Changers*; Peppler et al., *Short Circuits*; and Peppler et al., *Soft Circuits*.

National Instruments

National Instruments equips engineers and scientists with world-class tools that accelerate productivity, innovation, and discovery. NI's integrated software and hardware platforms have revolutionized system development and help companies create smarter, more advanced technologies to address the world's most pressing challenges. Knowing that many of the world's most significant engineering challenges will be met decades in the future, NI is committed to preparing and inspiring students to become the next generation of innovators.

National Math + Science Initiative

The National Math + Science Initiative is transforming education across the nation by building college readiness through exceptional teaching. We are a nonprofit organization focused on delivering educational programs to states and schools by providing training and resources.

Nepris

Nepris makes industry engagement part of the everyday classroom by empowering teachers to engage students in STEAM. We connect teachers and students with the right industry experts and provide an effective way for companies to extend education outreach and create equity of access.

SparkFun Electronics, Inc.

SparkFun is an open-source electronics company operating in Boulder, Colorado, since 2003. We sell thousands of products online to enable prototyping, research, and exploration. Our education department works with educational and commercial entities to help adopt the power that comes from embedded electronics and open-source software and hardware and offers classes and online tutorials designed to help educate individuals in the wonderful world of embedded electronics.

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After each session, please take a very brief survey.

Go to the link provided or use the QR code
to access the survey and choose your session.

http://goo.gl/OnxDXP

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