

UTeach Conference 2019

13th Annual

May 21–23, 2019

THE UNIVERSITY OF TEXAS AT AUSTIN

Program

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

The UTeach Institute partners with the National Math and Science Initiative to expand the UTeach program to universities across the country.

UTeach Institute

WE PREPARE TEACHERS. THEY CHANGE THE WORLD.



NATIONAL
MATH + SCIENCE
INITIATIVE

Opening Plenary



SPENCER WELLS

Spencer Wells is a geneticist, anthropologist, author, and entrepreneur. For more than a decade, he was an Explorer-in-Residence at the National Geographic Society and Director of the Genographic Project, which collected and analyzed DNA samples from hundreds of thousands of people around the world in order to decipher how our ancestors

populated the planet, in the process launching the consumer genomics industry.

Wells graduated Phi Beta Kappa from the University of Texas at Austin, received his Ph.D. from Harvard University, and conducted postdoctoral work at Stanford and Oxford. He has appeared in numerous documentary films and is the author of three books, *The Journey of Man*, *Deep Ancestry*, and *Pandora's Seed*. His work has taken him to more than 100 countries, where he has collaborated with everyone from heads of government and Fortune 500 corporations to tribal chieftains eking out a precarious living in places as remote as Chad, Tajikistan, and Papua New Guinea. He lives in Austin, Texas, where he is founder and CEO of consumer genomics startup Insitome, an adjunct professor at the University of Texas and owner of the iconic blues club Antone's.

2019 USEA Award Winners

USEA PRESIDENT'S AWARD: LARRY ABRAHAM



Lawrence D. Abraham, Ed.D. is a Professor in the Department of Kinesiology and Health Education and has been on the faculty of The University of Texas at Austin since 1975, with research leaves in 1980–81 at the National Institutes of Health and 1987–88 at the University of Massachusetts at Amherst.

His research focuses on the coordination of movement, with particular interests in skill acquisition and in interactions between mechanical and neural (reflex and voluntary) components of movement. He teaches undergraduate and graduate courses in motor learning, motor control, and biomechanics. Dr. Abraham currently serves as a graduate faculty member in programs in Rehabilitation and Movement Science (in Kinesiology), Biomedical Engineering, Neuroscience, and STEM Education. From 1998 to 2002 he served as Associate Dean for Teacher Education and Student Affairs in the College of Education, and from 2000 to 2008 he served as Chair of the Department of Curriculum and Instruction.

In 1993–94 he held the William David Blunk Memorial Professorship in recognition of outstanding teaching and service to students. In 2012 he received the Ruth B. Glassow Biomechanics Honor Award from the Biomechanics Academy of the National Association for Sport and Physical Education. In 2013 he received the Civitatis Award from the president of The University of Texas at Austin for distinguished service to the university.

Dr. Abraham served as Co-Director for the College of Education of the UTeach Natural Sciences Program for preparing secondary STEM teachers from 2003 to 2019. Since 2009 he has served as Associate Dean for the School of Undergraduate Studies, where his work focuses on enriching the undergraduate curriculum across the university.

OUTSTANDING MASTER TEACHER AWARD: SHELLY RODRIGUEZ

UTeach Austin, Associate Professor of Practice
and Master Teacher



Shelly Rodriguez is an associate professor of practice and Master Teacher with the UTeach Austin program. She has been with UTeach since 2008 and holds a PhD in Science Education from The University of Texas at Austin. Prior to joining UTeach, Shelly was a science teacher at Crockett High School in Austin ISD and received several teaching awards. She has been certified by The National Board for Professional Teaching Standards and was awarded the Outstanding Paper Award from the National Association for Research in Science Teaching in 2012. Shelly's areas of expertise include facilitating professional learning communities, mentoring, maker education, cross-cutting practices of the Next Generation Science Standards, and inquiry-based learning. Shelly helped to secure the most recent Robert Noyce Grant awarded to UTeach Austin, which established an innovative micro-credentialing program, UTeach Maker. Shelly is currently organizing the UTeach Make For All Initiative and helping to spread making and maker-centered instruction across the UTeach network.

OUTSTANDING STAFF AWARD: ERIN GONZALES

UTeach Arlington, Coordinator of Student Services



Erin Gonzales has been advising teacher candidates at The University of Texas at Arlington for 14 years. Her former field of research (and current hobby) is linguistics. While completing an MA in Linguistics with the goal of becoming a professor, she began working in the advising office to cover her educational expenses. In that role Erin discovered a passion for working with college students in a non-teaching capacity, which led to a shift in educational and career goals. She completed a PhD in Higher Education at the University of North Texas in 2016. Her dissertation research profiled persistence patterns of highly motivated mathematics and science freshmen.

In 2010, while working as Coordinator of Advising in the College of Education, Erin was invited to apply for a position in an exciting new program called UTeach. Being involved with UTeach Arlington since its inception has been the most rewarding experience of her career. She recruited the first cohort of freshmen and watched with great pride as they walked the stage four years later. In addition to providing academic advising services, Erin guides recruitment and retention efforts, coordinates internships and scholarships, directs candidates through the certification process, advises the student organization, supervises student employees, and manages the supply room.

Erin has been recognized for her work at the national level, receiving the National Academic Advising Association's Outstanding Advisor Award in 2014. She earned UT Arlington's Outstanding Academic Advisor award twice, in 2009 and 2014. She has sat on several university committees addressing academic advising and student success, and has twice served as an officer in the university's advising association. She has presented at conferences and co-authored papers on both broad and STEM-specific advising issues. She recently took a break from academic pursuits to start a family, but plans to resume her research on STEM major retention, as well as pursue new areas applying her background in linguistics.

OUTSTANDING ALUMNUS AWARD: AMIEÉ HIMLER

UTeach Dallas Graduate, Secondary Math Specialist,
Richardson Independent School District



Amieé Himler graduated from the University of Texas at Dallas in 2010 with a B.S. in Mathematics and completed her teacher certification program through UTeach Dallas in spring 2011. She will graduate with her M.A.T. in Mathematics Education in May 2019. Amieé is the Secondary Math Specialist for Richardson ISD, where she has spent her entire career thus far. Prior to this role, she was a high school math teacher, department chair, curriculum writer and professional learning presenter. Her commitment and passion for supporting students and teachers is infectious, and it extends into the UTeach Dallas Program. Amieé continues to give back by serving as a mentor teacher to current UTeach Dallas students, as well as leading workshops for teachers in their first three years of teaching. She exemplifies what it means to be an outstanding student, teacher, and leader to her peers.

SPECIAL AWARD FOR OUTSTANDING CONTRIBUTIONS TO STEM EDUCATION: ARIEL TAYLOR

UTeach Austin, Master Teacher



Dr. Taylor joined the UTeach Austin team in Spring 2019 as a Master Teacher. She teaches Step 1 and works with Mendez Middle School to support teachers with remediation, enrichment and intervention for their students. Additionally, Ariel serves as the Program Coordinator for the UTeach Accelerate pathway.

Ariel is a UTeach Austin alumna. She received both her B.S. and M.A. in Mathematics from the University of Texas at Austin. She also earned a doctorate in Professional Leadership and Policy Studies from the University of Houston. Dr. Taylor holds her secondary math master teacher, principal, and superintendent certifications. She served as a high school math teacher, math specialist, and junior college math instructor prior to beginning her work here at UTeach Austin.

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. Ariel has presented at schools and conferences around the world to assist educators in providing quality learning opportunities. She believes in the importance of authentic engagement and student accountability. Her book, *Party of Four Please!: A Standards-Based Approach to Differentiation through Blended Learning*, was released in September 2018.

10:00 a.m.–1:00 p.m. Registration

REGISTRATION | LEVEL 2

11:00 a.m.–12:30 p.m.

STUDENT ORIENTATION | 301

For UTeach students only! Join us for a student orientation from 11:00 a.m. to 11:45 a.m. We will have lunch afterward.

1:00–2:30 p.m. Opening Plenary

THE HUMAN JOURNEY: A GENETIC ODYSSEY | BALLROOM

Spencer Wells

2:45–3:45 p.m.

A COMPARISON OF PRE-SERVICE TEACHER EXPERIENCES IN URBAN AND RURAL HIGH SCHOOL MATHEMATICS CLASSROOMS | 101

Instructional Program and Courses | Interactive Presentation

Carrie La Voy, Lecturer, University of Kansas

Sarah Dolence, Student, University of Kansas

This session will explore mathematics lessons taught in both urban and rural high school classrooms. Lessons were developed to explore meaningful mathematics through group collaboration and active learning. Participants will have the opportunity to take part in lesson activities. Participants will learn about what was successful when the lessons were taught and have a chance to ask questions and discuss options for teaching these or similar lessons in their own classrooms.

BUILD A PROFESSIONAL SKILL SET, HAVE FUN, AND CONNECT WITH YOUR COMMUNITY BY WORKING IN INFORMAL EDUCATION | 103

Instructional Program and Courses | Interactive Presentation

Lauren Siegel, Director, MathHappens

Paola Garcia, UTeach Student / MathHappens Alum, University of Texas at Austin

Halle Herzog, UT Student / MathHappens Alum, University of Texas at Austin

Samantha Trevino, UT Student / MathHappens Intern, University of Texas at Austin

Michelle Tat, UT Graduate / MathHappens Intern, University of Texas at Austin

As change agents, UTeach graduates impact education by being campus leaders, but they can also be leaders by working through programming in museums and cultural centers. Find out ways UTeach students and graduates have built their professional skill set as educators and candidates for jobs by working with and for museums and cultural centers to positively impact

the Austin informal education community. MathHappens interns and staff will share experiences and interactions with the public, museum educators, and administrators in settings ranging from working at a single event to a semester-long commitment, and even the installation of a permanent exhibit.

THE GO TEACH PROJECT WITH COLLEGE FOOTBALL PLAYOFF FOUNDATION | 104

Student Recruitment, Retention, and Support | Interactive Presentation

Britton Banowsky, Executive Director, CFP Foundation

Carly Campbell, Partnerships/Operations, CFP Foundation

Natalie Jenkins, Marketing Manager, GO Teach Project

Larry Abraham, Associate Dean, School of Undergraduate Education, University of Texas at Austin

Richard Hogeda, Assistant Dean for Student Affairs, College of Education, University of Texas at Austin

Kaleb Smith, Student Athlete and Student Teacher, University of Texas at Austin

The College Football Playoff Foundation, which is the charitable arm of the College Football Playoff (CFP), uses the popular platform of college football and the national championship game to support education. The CFP Foundation's primary cause, Extra Yard for Teachers, supports education by elevating the teaching profession. This year, the College Football Playoff Foundation has embarked on a unique teacher recruitment initiative, the Go Teach Project. Learn more about the teacher shortages our country is facing, the opportunity to recruit students and student-athletes with specific skills, and how the colleges and universities can utilize the Go Teach Project platform to help place great students into the teaching profession. The Go Teach Project gives us the chance to make an immediate impact in our classrooms.

HIGH SCHOOL RESEARCH INITIATIVE: TURNING CURIOSITY INTO ENGAGEMENT WITH UNIVERSITY COLLABORATION | 105

Instructional Program and Courses | Hands-On Workshop

Deanna Buckley, Associate Professor of Practice, University of Texas at Austin

Gwen Stovall, Assistant Professor of Practice, University of Texas at Austin

Jill Rhoden, HRI Outreach Coordinator, University of Texas at Austin

This growing partnership is designed to give high school students an authentic open inquiry experience in order to attract more students into STEM research fields. High school students do science, not just read about it. HRI increases student investment in their own learning with unique interests and collaboration, and developing skills using tools such as error analysis, statistics, and scaffolded scientific communication. We will be sharing successful strategies based on our field results.

UTEACH COURSE OVERVIEW: PERSPECTIVES ON SCIENCE AND MATHEMATICS | 106

*Instructional Program and Courses |
Interactive Presentation*

Gregory Gilson, Associate Professor, University of Texas Rio Grande Valley

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.

APPRENTICE TEACHING, TEACHER IDENTITY, AND INTENTION TO TEACH: CONTEXTUAL FACTORS | 107

*Instructional Program and Courses |
Roundtable Discussion*

Joanne Goodell, Professor, Cleveland State University

Research findings will be presented on the links between teacher identity, entry into teaching, and student satisfaction with Apprentice Teaching. Contextual factors that impact the structure, timing, location, and quality of supervision of the clinical experiences will be discussed. Participants will discuss and share activities used in Apprentice Teaching to develop and strengthen teacher identity. A summary of the discussion will be sent to participants.

FIGHTING CLIMATE CHANGE WITH PROJECT-BASED INSTRUCTION | 108

*Instructional Program and Courses |
Interactive Presentation*

Mark Spencer, Faculty, University of California, Berkeley

Participants will have the opportunity to review numerous examples of student-authored PBI curriculum materials focused on school site sustainability and will be actively challenged to evaluate the connection between these materials and the practices, cross-cutting concepts, and disciplinary core ideas of the NGSS framework.

WHAT IS UTEACH? | 115

*About UTeach and UTeach Replication |
Interactive Presentation*

Jill Marshall, Associate Professor of STEM Education, Department of Curriculum and Instruction; Co-Associate Director, UTeach Austin, University of Texas at Austin

Gina Tempel, Associate Dean, College of Science, Associate Professor, Geological Sciences & Engineering; Co-Director, NevadaTeach, University of Nevada, Reno

This session is for anyone interested in learning more about the UTeach secondary STEM 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 will also review the program's results at UT Austin, including program enrollment and retention, student profiles, and teacher production and retention.

HOW COOPERATIVE LEARNING SUPPORTS POSITIVE SOCIAL AND EMOTIONAL LEARNING IN THE CLASSROOM | 301

UTeach Student Topics | Hands-On Workshop

Pam Kirkland, Master Teacher, University of Texas at Dallas
Emily Hennessy, Senior Lecturer, University of Texas at Dallas
Jim McConnell, Master Teacher, University of Texas at Dallas

The session utilizes a Breakout Box activity to demonstrate how an educator can effectively incorporate Cooperative Learning (CL) strategies while addressing the importance of Social & Emotional Learning (SEL), based on research, in classes with diverse student populations. In addition, the importance of these strategies for educators in relation to Texas Teacher Evaluation and Support System (TTESS) will be presented. Maximum attendance of 30 participants due to limited number of materials.

4:00–5:00 p.m.

DIFFERENTIATING FOR GRADUATE STUDENTS: IMPACTS OF UTEACH ON A GRADUATE PROGRAM | 101

*UTeach Program Sustainability |
Interactive Presentation*

Mary Urquhart, Associate Professor and Department Head, University of Texas at Dallas

Stephanie Taylor, Senior Lecturer, University of Texas at Dallas
Emily Hennessy, Senior Lecturer, University of Texas at Dallas
Georgia Stuart, Teaching Associate, University of Texas at Dallas
Jim McConnell, Master Teacher, University of Texas at Dallas

Core coursework in the twin Master of Arts in Teaching programs at the University of Texas at Dallas has substantial UTeach heritage as a result of the replication process. We will share our story and some of our activities. We will also invite the stories of others on applying the strengths of UTeach courses with in-service teacher populations, revisiting topics in UTeach courses with UTeach graduates, and serving post-baccs who are seeking certification alongside in-service teachers.

THE PATH TO RECRUITING 1,000 STUDENTS IN FIVE YEARS | 103

*Student Recruitment, Retention, and Support |
Interactive Presentation*

Ingelise Giles, Master Teacher, Florida International University
Nicholas Oehm, Master Teacher, Florida International University
Leslie Nisbet-Gonzalez, Master Teacher, Florida International University

Jon Anderson, Master Teacher, Florida International University

This session will give a brief overview of the FIUteach recruiting strategy that has enabled them to recruit over 1,000 students into Step 1 and Combo within five years. Participants will work in breakout groups with FIUteach Master Teachers to identify new strategies to add to their existing recruiting plans.

ENGAGING COMMUNITY COLLEGES IN RECRUITMENT OF SECONDARY STEM TEACHERS THROUGH STEP 1 | 104

UTeach Program Sustainability | Roundtable Discussion

Anisha Campbell, Associate Director, University of Maryland, College Park

Sarah Henson-Darko, Master Teacher, University of Maryland

Anita Sanyal, Master Teacher, University of Maryland

Steve Karig, Master Teacher, University of Maryland

Kayla White, Master Teacher, University of Maryland

Participants will discuss prompts that simulate discussions of the Master Teacher / community college instructor professional learning community. Conversations will focus on video club examples that purposefully create an environment for co-creating common language and understandings of teacher preparation and analyzing classroom videos to build a shared understanding of Step 1's goals and objectives.

NAVIGATING THE ACCOUNTABILITY LANDSCAPE: TEACHER PREPARATION PAST AND FUTURE | 105

STEM Ed Research and Policy | Roundtable Discussion

Edna Schack, Professor, Morehead State University

Ellen Granger, Professor, Florida State University

Tim Simpson, Professor, Morehead State University

Anthony Petrosino, Associate Professor, University of Texas at Austin

Jill Marshall, Associate Professor, University of Texas at Austin

We will enumerate the multiple masters, goals, and outcomes (intentional or not) of current accountability measures and discuss the impact of accountability on professionalism, innovation, or finances. Audience participation will support the discussion, aiming to learn from our collective experiences and look toward leveraging UTeach's strengths to influence accountability that reclaims teacher professionalism, allows for innovation, and promotes democracy and equity.

UTEACH COURSE OVERVIEW: APPRENTICE TEACHING | 106

Instructional Program and Courses | Interactive Presentation

Kelli Allen, Clinical Assistant Professor / Master Teacher, UTeach Austin, University of Texas at Austin

Pamela Powell, Clinical Associate Professor / Master Teacher, UTeach Austin, University of Texas at Austin

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

FREE MEETING SPACE | 107

Anyone can use this space for informal conversations.

WHAT A TRIP! INTEGRATING FIELD TRIPS FOR TEACHER CANDIDATES INTO YOUR UTEACH PROGRAM | 108

Instructional Program and Courses | Roundtable Discussion

Steve Ottmer, Instructor, Classroom Interactions, University of Colorado, Colorado Springs

Pat McGuire, Co-Director / Associate Professor, University of Colorado, Colorado Springs

Meg Ortiz, UCCSTeach Post-Bacc Science Teacher Candidate, University of Colorado, Colorado Springs

Field trips aren't just for kids! Join us for an interactive session that describes a field trip to a local high school designed for teacher candidates in Classroom Interactions. Attendees will receive a 30,000-foot overview of our UCCSTeach field trip experience (e.g., walking tour of the school, classroom setup, attendance secrets, technology, emergency drills, etc.). Attendees will have time to think, collaborate, and brainstorm ways to integrate field trips into their UTeach program.

UTEACH INSTRUCTIONAL PROGRAM OVERVIEW | 115

Instructional Program and Courses | Interactive Presentation

Steve Case, Director of the Center for STEM Learning; Assistant Director of the Center for Science Education; Co-Director, UKanTeach, University of Kansas

Shelly Rodriguez, Associate Professor of Practice, University of Texas at Austin

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.

THE NEXT DECADE OF EFFECTIVE INCLUSION | 301

UTeach Student Topics | Roundtable Discussion

Naomi Petersen, Professor, Central Washington University

Both STEM teacher candidates and their future students have increasingly diverse characteristics (levels of ability, cultural backgrounds, etc.) requiring thoughtful pedagogy as well as curriculum content. Let's talk about ways our lesson plans respect students' experiences that are often vulnerable to bias, exclusion, and abuse. The roundtable will provide time to troubleshoot proactive classroom management and assessment techniques after a brief interactive presentation on bias in current news, pop, and classic culture.

SPEED NETWORKING | SALONS A & B

Jackie Burniske, Director of K-12 Initiatives, UTeach Austin

Get to know your UTeach colleagues! Join us before the reception for one-on-one conversations. You've heard of speed dating; this is speed networking. Take turns during a one-on-one, five-minute discussion to share your successes and challenges and learn what others are doing. Get more connections to the UTeach Nation!

5:15–7:15 p.m. Welcome Reception and Poster Session

BALLROOM

Course Exposition—Students

A1. INCORPORATING THE TEAM MODEL INTO THE SECONDARY EDUCATIONAL CLINICAL RESIDENCY FOR UNDERGRADUATE CHEMISTRY MAJORS

Nathan Turner, *Student, Louisiana Tech University*

The TEAM model allows for teaching residents to complete a full year of instruction in classrooms in which they are receiving their certification. This project demonstrates the implementation of the chemistry curriculum by a teacher completing the full requirements for an undergraduate chemistry degree.

A2. MATH REALITY

Samantha Drown, *Student, Middle Tennessee State University*

Students often wonder how they will actually use the mathematics they learn in class outside of the classroom. My poster shows a lesson I created in Classroom Interactions showing one way to use linear equations in the “real world.”

A3. STUDENTS CREATE A MORE REALISTIC CAR CRASH SIMULATOR

Miles Knight, *Student, Northern Arizona University*

This lesson combines the essential ideas of Research Methods and Project-Based Instruction. Students will explore a car crash simulation, analyze their data, compare their data to an online research-based dataset, create a more realistic simulation (via tin foil bumpers), and analyze their new data.

A4. QUANTUM MECHANICS IN SCHOOL: ARE WE TOO AMBITIOUS?

Nahuel Acosta, *Staff/Alumnus, University of Massachusetts, Boston*

Auriana Anderson, *Student, University of Massachusetts, Boston*

Our lesson is to give a concrete experience of quantum mechanics to students. We would like to find out if we can take high-level college physics courses (like quantum mechanics) into public schools. We worked with a physics professor, mentor teacher, other students, and a master teacher to design and teach it.

A5. ENGINEERING FOR THE NEXT GENERATION

Maya VanZanten, *Student, University of Nevada, Reno*

Engineering serves as a bridge in STEM, actively engaging learners in developing creative solutions for complex real-world problems. Various artifacts demonstrate how a Step 2 team incorporated engineering into inquiry-based lessons, featuring a landfill design activity for middle school learners.

A6. THE IMPORTANCE OF HISTORY IN MATH: COMPLEX NUMBERS

Lizeth Reyes, *Student, University of Texas at Austin*

The poster presents a lesson plan from Perspectives on Science and Mathematics on complex numbers. This is an example of using historical perspectives to clarify a math topic. The lesson plan focuses on the idea that including examples from history in classrooms enriches student learning by illuminating aspects of how math works.

A7. USING GLOBAL PLATFORMS TO CREATE AN AUTHENTIC AUDIENCE IN PBL

Katie Donaldson, *Faculty (for student submission), University of Texas at Dallas*

Using the global collaboration platform iEARN-USA's sustainable development goals and projects as an inspiration (us.earn.org), UTeach Dallas PBI classes developed PBL STEM units with global audiences for their future classrooms. Students will present a poster that won a competition judged by UTeach Dallas faculty and staff.

A8. IMPLEMENTATION OF PROJECT-BASED LEARNING: THE PHYSICS BEHIND ROCKETS AND PLANETARY MOTION

Andrea Elizabeth Hinojosa Lee, *Student, University of Texas, Rio Grande Valley*

This poster will show the results obtained by the implementation of PBL in a physics classroom to teach and review the concepts of Newton's Law of Universal Gravitation and Kinematic Equations while relating this to the construction and operation of SpaceX.

A9. CHANGING WEST VIRGINIA K–12 COMPUTER SCIENCE LEGISLATION OPENS THE DOOR TO STEP 1 5E CS LESSON DESIGN

Abigail Osborne, *Student, West Virginia University*

Early exposure to CS teaching in Step 1 could support Step 2 students' development of technology lessons. Step 1 students are teaching CS 5E lessons in grades 2-5. This poster explores the benefits and challenges of inquiry-based CS lessons and the perceptions of WVUteach students toward technology.

A10. DEVELOPING TEACHING STRATEGIES THROUGH ITERATIVE DESIGN CHALLENGES

Sydney Michalski, *Student, West Virginia University*

Classroom Interactions at WVU, a course preparing students to enact ambitious teaching practices, utilizes group-based engineering design projects to reinforce the importance of an iterative process in the teaching and learning of math and science.

A11. BE THE VOICE. BE THE CHANGE. IN CLIMATE CHANGE

Nicole White, *Student, Western Kentucky University*

Emily McAfee, *Student, Western Kentucky University*

This problem-based unit was piloted in two rural high school biology classrooms in Barrow, Alaska, and Bowling Green, Kentucky. Pre-service STEM teachers developed a week-long unit using the Legacy Cycle model of instruction to teach about climate change with a multi-disciplinary approach.

A12. FROM STEM TO STEAM: THE ROOT OF INNOVATION

Mao Leonard, *Student, University of Texas at Austin*

As an apprentice teacher, I encouraged my students to incorporate their life experiences into a product that showcased their knowledge of quadratic functions. I will explore how getting rid of the disconnect between STEM and creativity affected my teaching practices and students' outlooks on math.

Program Exposition—Students

B1. FURTHERING THE ADVANCEMENT OF COMMUNITY ENGAGEMENT AT CENTRAL WASHINGTON UNIVERSITY: CREATING ETHNICALLY DIVERSE OPPORTUNITIES

Ana Garcia, *Student, Central Washington University*

The Math Department at Central Washington University created the Kittitas Valley Math Circles but, with support from TeachSTEM interns, has developed a mentoring opportunity in Spanish Math Circles to serve bilingual middle school students and help bridge the gap between language and classroom material.

B2. ROBOTICS IN CENTRAL WASHINGTON: CULTIVATING YOUNG STEM MINDS

Matthew Changar, *Student, Central Washington University*

Sarah Dunsmore, *Student, Central Washington University*

Robotics internships with TeachSTEM provide opportunities and resources to cultivate local STEM learning environments. Interns have the unique responsibility to encourage engineering-based problem solving and collaboration among elementary students to foster curiosity about STEM at a young age.

B3. PERSPECTIVES: CLIMATE CHANGE IN APPALACHIA

Megan Pauley, *Student, Morehead State University*

Maddie Morgan, *Student, Morehead State University*

Teaching climate change in Appalachia provides an opportunity for cross-curricular lesson planning while educating one of the top coal-producing areas of the United States. Exponential functions, properties of greenhouse gasses, and timeline of policies provide a larger view for problem-based learning.

B4. BRINGING INQUIRY-BASED INSTRUCTION TO RURAL APPALACHIA

Stephen Burke, *Student, Morehead State University*

MSU Teach is located in rural Appalachia, where inquiry teaching is not common. Implementing NGSS-based lessons comes with a set of advantages and disadvantages. This poster explores how Appalachian cultural and natural resources fully support inquiry and scientific/engineering practices.

B5. SOUTHWEST ALLIANCE FOR GIRLS ENRICHMENT STEAM CAMP

Sydney Hutchison, *Student, Oklahoma State University*

This poster describes how SAGE STEAM Camp creates opportunities for underprivileged middle school girls to explore and develop confidence in STEM disciplines while incorporating the arts. It includes teachable moments from camp and reflections on how teachers have a unique way of thinking.

B6. IMPLEMENTING THE ENGINEERING DESIGN PROCESS IN THE STEM CLASSROOM

Wendy Argueta, *Student, University of Houston*

Amy Guerra, *Student, University of Houston*

Implementing the Engineering Design Process (EDP) into the STEM classroom is essential to fostering critical thinking in our students. In this presentation we will focus on the vessel that EDP represents for culturally responsive pedagogy and how it can be integrated with SE lessons.

B7. GARDEN-BASED LEARNING: STUDENT-LED POSITIVE ACADEMIC OUTCOMES IN URBAN ROOTS INTERNSHIP PROGRAM

Alisa Townsell, *Student, University of Nevada, Reno*

This poster will describe the positive data and great experiences collected over the spring semester in Urban Roots nonprofit partnered schools in the Washoe County School District. Student-led classrooms are taught healthy living, career readiness skills, and grade-appropriate science.

B8. AGRICULTURAL SCIENCE: THE UNIQUE BINDING OF A UTEACH PROGRAM

Noah Walls, *Student, University of Nevada, Reno*

The University of Nevada, Reno is the only UTeach Program that offers prospective students the option to receive a degree in agricultural science. NevadaTeach has incorporated Agriculture in the Classroom lessons into classroom practicum experience and lessons taught by Master Teachers in Step classes.

B9. THE HIGH SCHOOL RESEARCH INITIATIVE

Christina Werckle, *Student, University of Texas at Austin*

Christina Hull, *Student, University of Texas at Austin*

The High School Research initiative is a dual-enrollment course that provides authentic research opportunities to high school students. Check out this open-inquiry course and learn about what goes on behind the scenes in transforming STEM education through this UTeach internship.

B10. CHARLES BUTT SCHOLARSHIP FOR ASPIRING TEACHERS

Sarah Jean Feeser, *Student, University of Texas at Austin*

A part of the Raising Texas Teachers initiative, the Charles Butt Scholarship for Aspiring Teachers supports students pursuing a career in education. Recipients receive annual funding, mentorship with educational leaders, professional development, and join a network of fellow scholars across Texas.

B11. UTEACH STUDENT ORGANIZATION: A WAY TO CONNECT, DEVELOP, INSPIRE, AND SERVE

Daniela Martinez, *Student, University of Texas, Rio Grande Valley*
Thamara Hernandez, *Student, University of Texas, Rio Grande Valley*

The UTeach Student Organization is a fundamental element of the UTeach Program in South Texas; it allows students to collaborate, provide service to the university and the community, and form long-lasting professional relationships. Perspectives from executive and student members will be presented.

B12. INQUIRY-BASED TEACHING: CLINICAL EXPERIENCES IN SCHOOLS THAT FOCUS ON STEM AND PROJECT-BASED INSTRUCTION

Whitley Hammett, *Student, University of Texas, Tyler*
Douglas Johnson, *Student, University of Texas, Tyler*

The UTeach Tyler program provides UTeach preservice teachers the opportunity to complete clinical observations and teaching experiences at the University Academy. The University Academy is a Laboratory School designed to support UTeach students. The poster will provide information and reflections.

Research—Students

C1. WEATHER STATION FASCINATION

Ansel Maynard, *Student, Columbus State University*

This poster demonstrates lessons created using real-world data from a weather station. Students developed 5E lesson plans for their subject area using the data.

C2. PRE-SERVICE TEACHER LEADERSHIP: FROM PEER MENTORS TO APPRENTICE TEACHERS

Shayna Singh, *Student, Drexel University*
Jadzia Watsey, *Student, Drexel University*

Does having a leadership role as a DragonsTeach Peer Mentor prior to Apprentice Teaching provide benefits and/or challenges to the full-time teaching experience? This unique experience prepares DragonTeachers to teach before and after certification. Focus group data and analysis will be presented.

C3. HOW MIDDLE SCHOOL BOYS FROM UNDERREPRESENTED COMMUNITIES PERCEIVE COMPUTER SCIENCE AND COMPUTER SCIENCE CAREERS

Karina Bhutta, *Student, Florida International University*
Cristal Kelly, *Student, Florida International University*

We sought to understand factors influencing minority boys to pursue computer science careers. We found that interest was tied to personal identification with the field and perceived investment. Material concerns held primary importance while stereotypes had positive and negative effects on intent.

C4. PAVING THE PATH FROM PASTURE TO PLATE THROUGH AGRICULTURE EDUCATION

Lindsey Parsley, *Student, Middle Tennessee State University*
Rhiannon Overcast, *Student, Middle Tennessee State University*

As the world's population increases, support of the agriculture industry remains vital for us to sustain urbanization. Our focal point of this research project is to convey why agriculture education is important in conjunction with the growing population trend.

C5. MIDDLE TENNESSEE EDUCATIONAL EQUITY AND ALTERNATIVE SCHOOLING

Katy Salazar, *Student, Middle Tennessee State University*
Malia Mosby, *Student, Middle Tennessee State University*

This poster examines the effect of traditional disciplinary practices in schools. Are disciplinary systems in Middle Tennessee schools effective? Should alternative schools be an option based on disciplinary action or do they undermine efforts toward educational equity?

C6. E IS FOR ENGINEERING: THE USE OF SIX SIGMA IN STEM EDUCATION AS A METHOD FOR DEVELOPING MORE COMPETENT, CREATIVE, AND CONFIDENT ENGINEERING INSTRUCTORS AND STUDENTS

LaTasha Taylor Starr, *Student, University of Texas, Arlington*

While math and science classes are abundant in secondary education, there are only a handful of engineering classes offered. This research explores the apprehensions toward engineering education and uses Six Sigma as a method for enhancing STEM instruction for both teacher and student.

C7. BENEFITS OF REPTILES IN THE CLASSROOM

Yvonne Nguyen, *Student, University of Texas, Arlington*

Reptiles require specialized care but are otherwise hardy and are able to live for years under the right conditions. Implementing the animals' husbandry and dietary requirements into classrooms improves behavior and social interactions and fosters respect for animals and nature.

C8. SEARCH METHODS FOR OPTICAL TRANSIENTS IN GALAXIES

Alejandro Francisco Hinojosa Lee, *Student, University of Texas, Rio Grande Valley*

A kilonova is the optical counterpart of a gravitational wave. These events are very short-lived. Observing galaxies is the best way to improve the chances of finding such events. In this project, we will obtain data from different galaxies and conduct image processing and photometric measurements.

C9. LEONARDO DA VINCI: A REVOLUTIONARY MIND AT THE INTERSECTION OF MATHEMATICS AND ART

Melissa Abrams, *Student, George Washington University*

Leonardo da Vinci was an Italian Renaissance polymath interested in architecture, art, engineering, astronomy, and mathematics. A research paper for Perspectives in Mathematics and Science investigates Leonardo da Vinci's pivotal use of mathematics in his artwork and art in his math projects.

C10. COAL MINE LOCATIONS AND THEIR EFFECT ON MERCURY CONTENT IN DRAGONFLY LARVAE

Morgan Gray, *Student, University of Kansas*

This poster analyzes the effect of coal mines on the concentration of mercury in dragonfly larvae. Dragonfly larvae are useful indicators of mercury concentrations in the ecosystem, and the coal mining industry has an effect on those levels. This research was conducted in a Research Methods class.

Non-Competitive

D1. SUPPORTING UTEACH SCIENCE TEACHERS: THE NSTA LEARNING CENTER

Michael Odell, *Professor STEM Education, University of Texas, Tyler*

Flavio Mendez, *NSTA Learning Center Senior Director, National Science Teachers Association*

This poster will highlight the NSTA Learning Center and how it can be used to support UTeach students during their program and during induction.

D2. HOW USEFUL IS HISTORY? A "TOOLKIT" MODEL FOR INTEGRATING HISTORY INTO SCIENCE AND MATHEMATICS TEACHING

Sarah Jenevein, *Graduate Student, University of Texas at Austin*

This poster outlines a model I developed for the UTeach Perspectives on Science and Mathematics course, which introduced students to six common methods of integrating history into STEM teaching, such as historical roleplaying and recreating important experiments. By framing these methods as "tools" for teaching, I hoped to overcome student resistance to learning history and to convey how history can support active learning and equity in STEM teaching.

D3. IMPROVING RETENTION AND RECRUITMENT: LESSONS LEARNED THROUGH DISCUSSION WITH STUDENTS

Amanda Reinsburrow, *PhD Student, Drexel University*

Jason Silverman, *Professor, Drexel University*

Sarah Falkowski, *Program Manager, DragonsTeach, Drexel University*

This poster will focus on the challenges of recruitment and retention from the perspective of Drexel DragonsTeach students. Student focus group findings around perceptions of their major as well as experiences and perceptions of the DragonsTeach program will be displayed and aligned to the uniquely Drexel components of co-op and quarter structure.

D4. A CASE STUDY OF HISPANIC STEM TEACHER PREPARATION

Pamela Groves, *Assistant Professor in Practice, University of Texas, Rio Grande Valley*

This poster will present research from my dissertation in progress on the experiences of Hispanic STEM majors who are pursuing teacher education in the UTeach program at a major Hispanic-Serving Institute. Preliminary findings will be shared.

D5. CONSIDERATIONS, CONCERNS, AND HELPFUL TIPS FOR PRESERVICE TEACHERS WORKING WITH NOVICE ESL LEARNERS IN STEM EDUCATION

Huameng (Melody) Chen, *Program Support Staff, University of Florida*

Gayle Evans, *Lecturer, University of Florida*

In an immigrant country like the U.S., it is inevitable for teachers to encounter students with low proficiency in English. This poster describes a lesson demonstrating how novice ESL learners feel in an American classroom, including suggestions to help them relieve frustration and increase engagement.

D6. INFUSING ELEMENTS OF CULTURALLY SUSTAINING PEDAGOGIES INTO A UTEACH PROJECT-BASED INSTRUCTION COURSE

Allyson Rogan-Klyve, *Assistant Professor Science Education, Central Washington University*

Emilie Hancock, *Assistant Professor of Mathematics, Science Education, Central Washington University*

In this poster, we share how CWU's TEACH STEM program continues its focus on equity by incorporating culturally sustaining pedagogies, such as place-based education, into the PBI course. We present this poster as a means of both sharing our experiences and continuing this important conversation.

D7. STEP 1 / STEP 2 COMBINATION COURSE: MTEACH COMMUNITY PARTNERSHIP EXPERIENCE

Robin Bollman, *Master Teacher, Middle Tennessee State University*

This poster highlights student experiences in the summer Step 1 / Step 2 combination course. Students enrolled in this course have the unique opportunity to intern at a local children's museum that focuses on hands-on learning experiences while fast-tracking program requirements.

D8. SURVEYING FOR SUCCESS: ACADEMIC ATTITUDES OF UNDERGRADUATE STEM MAJORS

Mary Urquhart, *Associate Professor and Dept. Head, University of Texas at Dallas*

Amiee Himler, *T&L Secondary Math Specialist, Richardson ISD*

Stephanie Taylor, *Senior Lecturer, University of Texas at Dallas*

Georgia Stuart, *Teaching Associate, University of Texas at Dallas*

Jim McConnell, *Master Teacher, University of Texas at Dallas*

We have deployed a survey including mindset and demographics questions to freshmen throughout the School of Natural Sciences and Mathematics. One of the first graduates from UTeach Dallas has been analyzing the data for her MAT research. We will present information on the survey and its analysis.

D9. GRADUATES' PERCEPTIONS OF UTILIZING PROJECT-BASED INSTRUCTION IN APPRENTICE TEACHING

Joanne Goodell, *Professor, Cleveland State University*

Kate O'Hara, *Master Teacher, Cleveland State University*

We will present an analysis of survey and interview data gathered from our program graduates concerning how we could improve the implementation of project-based instruction during Apprentice Teaching.

D10. FROM TA TO TEACHER

Meg Ortiz, *Student, University of Colorado, Colorado Springs*

Grant Chapman, *Teaching Assistant, University of Colorado, Colorado Springs*

Experience is the most important aspect of learning the art of teaching. Throughout our UTeach experience we are given the opportunity to become TAs. This valuable foray into the teaching field provides exposure, real-world classroom interactions, and opportunities to apply course knowledge.

D11. DEVELOPING PROFILES OF MIDDLE-LEVEL MATHEMATICS TEACHER CANDIDATES' RESPONSIVENESS WITH AVATARS: AN APPROXIMATION OF PRACTICE

Amman Haque, *Student, University of Maryland, College Park*

The purpose of this research is to examine how pre-service middle school science teachers respond to student thinking. Pre-service teachers practice responding to students' thinking using virtual "avatar" students. We consider how these interactions can inform teacher education.

7:15 p.m. Student Social Activity

STUDENT SOCIAL ACTIVITY | MEET IN LOBBY BY REGISTRATION DESK

For UTeach students only! We will meet at 7:15 p.m. and take a mini-tour of campus on our way to the Texas Union Underground for an evening of food and games!

Wednesday, May 22

8:00–8:45 a.m. Breakfast

BREAKFAST | BALLROOM

Poster awards will be announced at breakfast. Poster presenters please be there!

9:00–10:00 a.m.

RESOURCES FOR NEW PHYSICS TEACHERS | 101

Student Recruitment, Retention, and Support | Interactive Presentation

Jill Marshall, *Associate Professor, University of Texas at Austin*

Karen Matsler, *Master Teacher, University of Texas, Arlington*

First-time physics teachers may be recent graduates or experienced teachers required to teach physics as an added assignment. This interactive session will 1) collectively identify needs of teaching physics for the first time, 2) introduce the Physics Teacher Resource Agents (PTRA), a supportive network that includes resources, suggestions, and strategies for being successful in the classroom based on Physics Education Research, and 3) engage participants in effective strategies for specific topics, such as energy in the new AP Physics or how to integrate current developments in quantum physics with the standard curriculum. Welcome to the wonderful world of physics!

MASTER TEACHER LESSON PLANS MINI EXPO | 103

Instructional Program and Courses | Hands-On Workshop

Glenn Waddell, *Mathematics Master Teacher, NevadaTeach, University of Nevada, Reno*

Mariam Manual, *Master Teacher, University of Houston, teachHouston*

Master teachers will discuss and share some of the highly recommended lesson plans that were highlighted during the Master Teacher Retreat.

ELEVATING STEM EDUCATION | 104

UTeach Program Sustainability | Hands-On Workshop

Jonathan Durfield, *Vice President, Growth and Development, National Math and Science Initiative*

Steve Case, *Director of the Center for STEM Learning; Assistant Director of the Center for Science Education; Co-Director, UTeach, University of Kansas*

Juan Elizondo, *Senior Director, Marketing and Communications, National Math and Science Initiative*

Ronda Brandon, *Senior Director, STEM Teacher Pathways, National Math and Science Initiative*

This workshop-style session will let UTeach leaders and STEM education advocates brainstorm big ideas to increase support for the production of STEM teachers and to elevate STEM education as a STEM career. Marketing, development, and advocacy experts will facilitate small groups and participants will walk away with a better understanding about the work necessary to launch a successful national campaign with clear next steps.

ALL HANDS ON DECK: RECRUITMENT BRAINSTORMING SESSION | 105

Student Recruitment, Retention, and Support | Interactive Presentation

Pamela Groves, *Assistant Professor in Practice, University of Texas, Rio Grande Valley*

Liliana Trevino, *Assistant Professor in Practice, University of Texas, Rio Grande Valley*

This session will begin with a discussion of the recruitment and retention efforts currently being utilized by UTeachRGV. The Nearpod interactive learning platform will be used to seek the input of participants and get an idea of different recruitment and retention methods being implemented at the various UTeach replication sites. Participants will brainstorm about future recruitment/retention strategies. Discussion findings will be shared using Nearpod.

IMPLEMENTING UTEACH | 106

About UTeach and UTeach Replication | Interactive Presentation

Pamela Romero, *Associate Director, UTeach Institute*

Ashley Welch, *Manager of Site Support, UTeach Institute*

Amy Chavez, *Financial Analyst, UTeach Institute*

The UTeach Institute has developed a comprehensive approach to supporting the implementation of UTeach at partnering university sites. This session provides an overview of the Institute's products and services, communication of the UTeach model, operational and instructional support, evaluation services, and networking and community building opportunities.

INCORPORATING ENGINEERING IN STEP 1 AND 2 | 107

Instructional Program and Courses | Hands-On Workshop

Noah Salzman, Assistant Professor, Boise State University
Malinda Schaefer Zarske, Instructor, University of Colorado, Boulder

Matthew Wigglesworth, Master Teacher, Boise State University
Lindsey Yundt, Master Teacher, Boise State University

Participants will begin by engaging in an engineering design challenge appropriate for both the Step 1 and 2 classroom and upper elementary and middle school students. Next, participants will reflect on the engineering design experience with a focus on learning how they can facilitate the same or a similar lesson in their own Step 1 and 2 classes. Finally, we will facilitate a discussion on the benefits of incorporating engineering design activities in mathematics and science classrooms.

FREE MEETING SPACE | 108

Anyone can use this space for informal conversations.

BUILDING A POSITIVE CLASSROOM COMMUNITY (PART 1 OF 2): HOW TO CREATE COOPERATIVE KIDS | 301

UTeach Student Topics | Interactive Presentation

Scott Fray, Master Teacher, Northern Arizona University
Lynn Kirby, Clinical Assistant Professor / Master Teacher, UTeach Austin, University of Texas at Austin

Participants begin with a TPS, experience a practice assignment, unpack their experience, discuss real-world challenges they have observed and experienced, and role play using the strategies to solve common classroom management situations.

DESIGN PRINCIPLES FOR PROFESSIONAL DEVELOPMENT ON PRODUCTIVE TALK IN THE CLASSROOM: LESSONS LEARNED | SALON A

STEM Ed Research and Policy | Interactive Presentation

Ellen Granger, Director, Office of Science Teaching Activities and Co-Director, FSU-Teach, Florida State University

Jennifer Schellinger, Post-Doctoral Associate, Florida State University

Todd Bevis, Director, Professional Development, Office of Science Teaching Activities, Florida State University

Samantha Skrob, Graduate Student, Florida State University

Danielle Vande Zande, Graduate Student, Florida State University

Sherry A. Southerland, Chair, School of Teacher Education and Co-Director, FSU-Teach, Florida State University

This session is structured as an interactive discussion. This work will be situated in recent literature about general PD design and a discussion will ensue about the more specific design principles emerging from our research. These principles are important not only for teacher PD, but also for preservice teacher development in fostering productive talk in the classroom.

10:15–11:15 a.m.

RURAL UTEACH REPLICATION: INITIAL RESULTS OF AN NSF NOYCE GRANT | 101

UTeach Program Sustainability | Interactive Presentation

David Long, Assistant Professor of STEM Education, Morehead State University

Through an engage activity that encourages understanding of the challenges of rural STEM education, this session examines the initial results of a NSF Noyce Scholars program designed to recruit and retain STEM educators in a remote rural region that struggles to retain teachers. Discussion of project findings opens a conversation about the competing purposes of education in rural and urban settings. This session looks to enhance our conversation about both toward continued equity.

DEVELOPING VIDEO-BASED LEARNING MODULES FOR LEARNING ABOUT STUDENTS' MATHEMATICAL THINKING | 103

Instructional Program and Courses | Hands-On Workshop

Laurie Cavey, Professor of Mathematics Education, Boise State University

Tatia Totorica, Clinical Assistant Professor, Boise State University
Patrick Lowenthal, Associate Professor, Educational Technology, Boise State University

Jason Libberton, Regional Mathematics Specialist, Idaho State University

Participants will work through one of four online modules we have recently redesigned (given a large enough number of participants, some may work through different modules). Each module uses video to showcase different ways that students can productively work on mathematical problems. After working through a module, participants will discuss ideas for improvement in small groups and then report out to the larger group. Participants will be asked to record their feedback via a Google form.

UTEACH COURSE OVERVIEW: CLASSROOM INTERACTIONS | 104

Instructional Program and Courses | Interactive Presentation

Jill Marshall, Associate Professor of STEM Education, Department of Curriculum and Instruction; Co-Associate Director, 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.

TO BE OR NOT TO BE: DEMYSTIFYING YOUR USEA BENEFITS | 105

UTeach Program Sustainability | Interactive Presentation

Paige Evans, Clinical Professor, teachHouston; 2018-2019 USEA President, University of Houston

Steve Case, *Director of the Center for STEM Learning; Assistant Director of the Center for Science Education; Co-Director, UKan-Teach; 2018-2019 USEA Vice President, University of Kansas*
Mariam Manuel, *Master Teacher, teachHouston; USEA Board Member, University of Houston*

The UTeach STEM Educators Association (USEA) was founded in 2014 and includes all UTeach partner programs, the National UTeach Alumni Network, and affiliate members. Presenters will speak about the vision for the future of the association and the benefits of being a USEA member. Come hear how you can be actively involved in the association and help achieve its mission of STEM literacy for all.

FREE MEETING SPACE | 106

Anyone can use this space for informal conversations.

HELP US “GET THE FACTS OUT” TO RECRUIT MORE TEACHERS | 107

Student Recruitment, Retention, and Support | Interactive Presentation

Gay Stewart, *Eberly Professor of STEM Education, Professor of Physics, West Virginia University*

Participants will engage with and review a toolkit for recruiting STEM majors into teaching. While all are welcome, I am particularly interested in Master Teacher feedback, since they are vital to recruiting and have experience at the high school teaching level; alumni, who can give us their experiences; and those interested in becoming change agents on their own campuses. Participants will have full access to the modules and to online mentoring to support them in using the materials.

STEMSATIONAL! DEVELOPING PROBLEM-BASED UNITS OF INSTRUCTION THAT CREATE LEGACIES OF LEARNING | 108

Instructional Program and Courses | Interactive Presentation

Martha Day, *Co Director, Western Kentucky University*
Baleigh Lawson, *SKyTeach PreService Teacher, Western Kentucky University*
Rachel Cunningham, *SKyTeach PreService Teacher, Western Kentucky University*
Kayla Ditto, *SKyTeach PreService Teacher, Western Kentucky University*

Catherine Poteet, *Master Teacher, Western Kentucky University*
Participants will be engaged by viewing anchor videos introducing a geometry lesson through a “Lucy in the Sky with Diamonds” themed unit and a science lesson through a “National Geographic Wild” themed unit. Session attendees will learn how the PBI units evolved in development and how technology is interwoven throughout the lessons. The audience will participate in aspects of each lesson through instructional modeling. Everyone attending will receive electronic access to both PBI units.

BUILDING A POSITIVE CLASSROOM COMMUNITY (PART 2 OF 2): A DAY AT THE IMPROV | 301

UTeach Student Topics | Hands-On Workshop

Scott Fray, *Master Teacher, Northern Arizona University*
Lynn Kirby, *Clinical Assistant Professor / Master Teacher, UTeach Austin, University of Texas at Austin*

Back by popular demand, these sessions are a repeat performance on principles for effective classroom management. This is part 2 of 2 sessions on classroom management and creating a cooperative classroom environment for learning. Attendance for the first session is helpful to get the most out of the role-playing scenarios.

FINDINGS FROM TECHNOLOGY-USE SURVEYS OF UTEACH STUDENTS IN THE GROUP-BASED CLOUD COMPUTING (GBCC) FOR STEM PROJECT | SALON A

STEM Ed Research and Policy | Interactive Presentation

Anthony Petrosino, *Associate Professor, Department of Curriculum and Instruction, University of Texas at Austin*
Sarah Jenevein, *Graduate Student, University of Texas at Austin*
Walter Stroup, *Associate Professor / Chairperson, STEM Education & Teacher Development, University of Massachusetts Dartmouth*

We will address the importance of pre-service teachers' exposure to online technologies for teaching STEM subjects, with a focus on the affordances of group-based cloud computing (GbCC) environments. We'll share preliminary findings from a technology-use survey administered as part of an NSF grant on group-based cloud computing, and suggest future directions for online technologies in STEM.

11:30 a.m.–12:30 p.m.

UTEACH COURSE OVERVIEW: STEP 1 AND STEP 2 | 101

Instructional Program and Courses | Interactive Presentation

Lynn Kirby, *Clinical Assistant Professor / Master Teacher, UTeach Austin, University of Texas at Austin*
Scott Fray, *Master Teacher, Northern Arizona University*

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.”

DEVELOPING SOLUTIONS FOR RECRUITING AND RETAINING AFRICAN AMERICAN MATH AND SCIENCE STUDENTS IN UTEACH PROGRAMS: A PANEL DISCUSSION AND WORKING GROUP | 103

Student Recruitment, Retention, and Support | Interactive Presentation

David Sparks, *Assistant Professor, UTeach Arlington, USEA Board Member, University of Texas at Arlington, University of Texas, Arlington*
Leah McAlister-Shields, *Master Teacher, teachHOUSTON, University of Houston, University of Houston*
Paige Evans, *teachHOUSTON, USEA Board President, University of Houston*
Jacqueline Ekeoba, *Master Teacher and Doctoral Student, University of Houston*
Montrel LaCour, *Science Teacher & Pearadox Robotics FRC Assistant Coach, Pearland ISD*

The panelists will lead focus groups on topics related to the recruitment and retention of African American college students into UTeach programs nationwide, with considerable

emphasis given to programs that prepare teachers who will work with diverse populations. The panelists will then share each group's brainstorming and make recommendations for future research, ongoing discussions, and the formation of a working group devoted to recruiting and retaining African American students in UTeach.

ARRIVING ON THE SCENE: COLLECT AND ANALYZE EVIDENCE LIKE THE PROS, PART 1. LATENT FINGERPRINT DEVELOPMENT | 104

UTeach Student Topics | Hands-On Workshop

Dhani Biscocho, Product Manager, Carolina Biological

Thinking about incorporating forensic science into your classroom? Expose your students to the fascinating world of forensics by using real-world techniques practiced by law enforcement agencies. Develop latent prints, compare and classify them in engaging, hands-on activities designed by Carolina and experts in the forensics field. To learn more about Carolina's forensics products (or any of our other 14,000 products for K-16), visit us at www.carolina.com.

USING AN OPEN PORTFOLIO FOR MICRO-CREDENTIALING: THE UTEACH MAKER MODEL | 105

Student Recruitment, Retention, and Support | Interactive Presentation

Shelly Rodriguez, Associate Professor of Practice, University of Texas at Austin

Sharon Cardenas, Associate Clinical Professor, Northern Arizona University

Hannah Brooks, Masters Student, University of Texas at Austin

Jason Harron, Doctoral Student, University of Texas at Austin

Participants will be introduced to the UTeach Maker program and its process for micro-credentialing. Participants will have the opportunity to explore current Maker Showcases as well as the rubrics provided for Showcase reviewers. The session will include a Q & A with current Makers and give participants the chance to consider how an open portfolio, like the Maker Showcase, might be useful in their own program context.

IS UTEACH A GOOD INVESTMENT? | 106

UTeach Program Sustainability | Interactive Presentation

Amy Chavez, Financial Analyst, UTeach Institute

Michael Marder, Professor of Physics; Co-Director, UTeach Austin, University of Texas at Austin

This session will discuss why UTeach is not just a good investment, but a great investment. We present the "real" cost of UTeach and an ROI analysis on dollars invested in producing high-quality STEM teachers.

UTEACH COURSE OVERVIEW: PROJECT-BASED INSTRUCTION | 107

Instructional Program and Courses | Interactive Presentation

Anthony Petrosino, Associate Professor, Department of Curriculum and Instruction, 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.

TEACHING DESIGN: A METHODS COURSE FOR TEACHING THE ENGINEERING PRACTICES OF THE NGSS FRAMEWORK | 108

Instructional Program and Courses | Hands-On Workshop

Malinda Zarske, Instructor, University of Colorado, Boulder

Beyond exploring the key concepts of engineering education in CU Teach's Teaching Design course, workshop participants will actively engage in a hands-on engineering activity to personally experience the format and delivery of engineering in the K-12 classroom. This will also help them better understand how engineering design is a relevant approach to the integrated learning of science and math with the built world, connecting real-life engineering with subjects and concepts taught in K-12 classes.

FREE MEETING SPACE | 301

Anyone can use this space for informal conversations.

BEYOND CONSEQUENCES! EMBEDDING A MYRIAD OF EFFECTIVE AND EQUITABLE PRACTICES FOR CLASSROOM MANAGEMENT IN THE UTEACH CURRICULUM | SALON A

Instructional Program and Courses | Hands-On Workshop

Marcia Jacobs, Master Teacher, University of North Texas

La Keisha Leonard, Master Teacher, University of North Texas

Our mission is to provide participants with effective and equitable practices for developing classroom management skills. These practices are easy to embed into any UTeach course-level curriculum and classroom. Through hands-on and interactive activities, participants will experience how Teach North Texas helps its preservice teachers look beyond consequences to become more effective teachers. Though intended for Master Teachers, effective classroom management is a skill every teacher must continuously develop. All are welcomed.

12:30–1:30 p.m.

LUNCH | TEJAS DINING ROOM

1:45–3:45 p.m.

UTEACH RESEARCH LAB | 301

STEM Ed Research and Policy | Hands-On Workshop

Patrick McGuire Co-Director / Associate Professor, University of Colorado, Colorado Springs

Gay Stewart, Co-Director / Professor, West Virginia University

Have a great research idea or project related to your UTeach program that you would like to discuss in an interactive setting? Want to connect with other UTeach colleagues and explore the possibility of a collaborative grant proposal or research project across multiple UTeach sites? Then join us for a two-hour UTeach Research Lab! UTeach Research Lab attendees will

be strategically grouped based on current and future research initiatives and provided the opportunity to engage in collaborative work. Please bring your ideas and research questions, no matter how big or small, so we can crowdsource the topics for this session. Attendees are welcome to come and go during this session, so they can attend other sessions as well.

1:45–2:45 p.m.

CREATE A BLENDED LEARNING CLASSROOM | 101

*Instructional Program and Courses |
Interactive Presentation*

Ariel Taylor *Assistant Professor of Practice, University of Texas at Austin*

Kelli Allen, *Clinical Assistant Professor / Master Teacher, UTeach Austin, University of Texas at Austin*

This learning session will allow participants the opportunity to experience a 5E-driven blended learning simulation to explore active learning and assessment strategies. Throughout the simulation, participants will create a station rotation module to implement in their own classrooms. Participants will leave the session with an action plan for implementing blended instruction in their own classrooms.

FREE MEETING SPACE | 103

Anyone can use this space for informal conversations.

ARRIVING ON THE SCENE: COLLECT AND ANALYZE EVIDENCE LIKE THE PROS. PART 2. BULLET TRAJECTORY | 104

UTeach Student Topics | Hands-On Workshop

Dhani Biscocho, *Product Manager, Carolina Biological*

Recreate a crime scene by reconstructing a shooting scenario using our Bullet Trajectory Investigation Kit. We use trigonometric relationships to calculate bullet angles using trajectory rods. Data collected will help us differentiate between converging from non-converging trajectory angles and help verify (or discredit) witness testimony. Solving a mystery has never been this fun and engaging! To learn more about Carolina's forensics products (or any of our other 14,000 products for K-16), visit us at www.carolina.com

SUSTAINING LONG-TERM STRATEGIC PARTNERSHIPS TO MEET THE EVOLVING NEEDS OF INDIVIDUAL SCHOOL DISTRICTS | 105

*UTeach Program Sustainability |
Interactive Presentation*

Sara Harmon, *Program Manager, University of California, Berkeley*

Clarissa Mark, *Student Services Coordinator, University of California, Berkeley*

We will discuss our multi-pronged approach to establishing a meaningful relationship that is of value to all campus partnerships with one particular large and unique school district. The approach includes innovative planning, rigorous analysis of annual program data, and encouraging staff to engage directly with mentoring K-12 students alongside program participants. The presenters will facilitate a lively brainstorming discussion with the entire audience to address our colleagues' obstacles.

UTEACH COURSE OVERVIEW: KNOWING AND LEARNING IN MATHEMATICS AND SCIENCE | 106

*Instructional Program and Courses |
Interactive Presentation*

Perri Segura, *Clinical Associate Professor / Master Teacher, teachHOUSTON, University of Houston*

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.

A MULTI-PRONGED APPROACH TO STUDENT RECRUITMENT | 107

*Student Recruitment, Retention, and Support |
Interactive Presentation*

Laura Harlow, *Master Teacher, University of Houston*

Join us as teachHOUSTON shares marketing materials and strategies used for the general program and specifically for Computer Science students. Participants will be given marketing materials and sample recruitment key points, as well as an opportunity to work on creating their own materials and key points.

AN INNOVATIVE APPROACH FOR UTEACH PROGRAMS TO PROMOTE STUDENT SUCCESS AND TEACHING EXCELLENCE IN AP CALCULUS CLASSROOMS | 108

*Instructional Program and Courses |
Hands-On Workshop*

Gail Kaplan, *Professor of Mathematics, Towson University*

Imagine preservice teachers prepared to effectively teach AP Calculus upon graduation. Explore a unique opportunity where students enroll in a Seminar in Teaching AP Calculus. Theoretical ideas come alive through engaging opportunities designed to enhance understanding and mastery of the calculus. Participants will have fun with sand-filled snow cones and graphs filled with beans, and discuss the potential of replicating this innovative approach of rigorous coursework and the student internship.

STEP 1 AND 2 COMBO: MEETING THE NEEDS OF THE TRANSFER STUDENT | SALON A

*Instructional Program and Courses |
Interactive Presentation*

Ingelise Giles, *Master Teacher, Florida International University*
Leslie Nisbet-Gonzalez, *Master Teacher, Florida International University*

Nicholas Oehm, *Master Teacher, Florida International University*

Participants will reflect on their own student populations to assess the need for a Combo course. Following a discussion of these aspects, participants will reflect on the critical elements of their Step 1 and Step 2 courses to design a proposed Combo course and then compare their proposed course to the FIUteach Combo course design.

3:00–4:00 p.m.

BUILDING TEACHER LEADERS PANEL | 101

Student Recruitment, Retention, and Support | Panel Discussion

Kelli Allen, *Clinical Assistant Professor / Master Teacher, UTeach Austin, University of Texas at Austin*

Zoe Rothenberger, *2019 Knowles Teaching Fellow, Meridian School*

Katy Howell, *2019 AISD Secondary Teacher of the Year, Travis Early College High School*

Kira Lowery, *UTeach Maker Fellow, NYOS Charter School*

Daniel Brown, *District Accountability Coordinator, Austin Independent School District*

Jonathan Broussard, *High School Research Initiative Instructor, Austin High School*

What unique skillsets do UTeach grads bring to their schools? What types of leadership roles are they taking on early in their teaching careers? How do they positively advocate for the teaching profession? What experiences have they encountered throughout their training to support their advancement in the profession? Panelists will share their insights about each of these questions. This will be a great discussion for master teachers, instructors, and students.

DESIGNING A MAKER-CENTERED 5E LESSON | 103

UTeach Student Topics | Interactive Presentation

Shelly Rodriguez, *Clinical Associate Professor, University of Texas at Austin*

Jason Harron, *Doctoral Student, University of Texas at Austin*

Participants will be introduced to Making through a short, hands-on challenge. They will then investigate Making as an educational framework and review lesson planning tools that connect Making to the 5E learning cycle. Participants will have the chance to view sample Maker-based 5E lessons and the opportunity to work with others to brainstorm ideas for how to bring elements of Making into their own classroom context.

CRAFTING YOUR PERFECT PITCH | 104

UTeach Program Sustainability | Panel Discussion

Panelists:

Matt Winkler, *Founder and CEO, Asuragen*

Gerard Juarez, *Founder and CEO, DroneSense*

Nan McRaven, *Founder, McRaven Consulting*

Mark Baxter, *Program Officer, Data Driven Education, Michael and Susan Dell Foundation*

Panelists from technology companies, educational and technology consulting firms, and foundations will listen to funding pitches by selected UTeach program members and give expert feedback.

UTeach program members who will be delivering pitches are **Greg Hale** (*Co-Director, UTeach Arlington*), **Sara Harmon** (*Program Manager, University of California, Berkeley*), **Edna Schack** and **Mike Dobranski** (*Co-Directors, MSU Teach*), and **Pam Harrell** and **Ruthanne Thompson** (*Co-Directors, University of North Texas*).

BRIDGING UTEACH AND ENGINEERING | 105

Student Recruitment, Retention, and Support | Roundtable Discussion

Adam Fontechio, *Professor, Drexel University*

Noah Salzman, *Assistant Professor, Boise State University*

Jason Silverman, *Professor, Drexel University*

Jennifer Stanford, *Associate Professor, Drexel University*

We will engage session participants through a facilitated conversation on the opportunities and challenges associated with collaborating with colleges of engineering to create licensure pathways for engineering students. We will briefly share our experiences on our own campuses but will primarily focus on participants sharing their own experiences with the group and working with participants to brainstorm solutions to challenges that they bring to the session.

PROVIDING UTEACH STUDENTS WITH HIGH-QUALITY PLACEMENTS | 106

Student Recruitment, Retention, and Support | Interactive Presentation

Michael Odell, *Professor STEM Education, University of Texas, Tyler*

Joe Ferrara, *Director, Institute for Instructional Excellence, University of Texas at Dallas*

Presenters will provide information on high-quality placements from case studies. Participants will be able to discuss their current clinical options. Additional discussion will ensue around crafting opportunities for UTeach students (schools in East Texas, Austin, and Houston will be highlighted).

A TRAJECTORY OF EQUITY AND SOCIAL JUSTICE | 107

Instructional Program and Courses | Interactive Presentation

Sarah Henson-Darko, *Master Teacher, University of Maryland, College Park*

Anita Sanyal, *Master Teacher, University of Maryland*

Steve Karig, *Master Teacher/High School Teacher, University of Maryland*

Kayla White, *Master Teacher/High School Teacher, University of Maryland*

Building on past Courageous Conversation sessions, we will present a coherent trajectory of learning experiences that span our first three fieldwork courses and engage our pre-service teachers in thinking deeply about equity and social justice in school settings. Open discussion will invite collaboration around challenges, lessons learned, and the contexts of individual programs.

UTEACH COURSE OVERVIEW: RESEARCH METHODS | 108

Instructional Program and Courses | Interactive Presentation

Michael Marder, *Professor of Physics; 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.

AGRICULTURE IN THE NEVADATEACH CLASSROOM | SALON A

*Instructional Program and Courses |
Interactive Presentation*

Kristina Carey, Master Teacher, University of Nevada, Reno
Mandi Collins, Master Teacher, University of Nevada, Reno
Noah Walls, NevadaTeach Student, University of Nevada, Reno
Alisa Townsell, NevadaTeach Student, University of Nevada, Reno

Nick Nemsgern, Master Teacher, University of Nevada, Reno
From examining egg anatomy and embryo development, to the dissection of germinating monocot and dicot seeds, to making ice cream with chemistry, we will bring together the three dimensions of NGSS in hands-on learning experiences that can be taken back to any UTeach classroom. The session includes discussion of how NevadaTeach integrates these lessons into our program and how we are including an Agriculture Science degree plan.

4:15–5:15 p.m.

DOES EARLY INTENTION TO TEACH MATTER?: AN EXAMINATION OF EARLY CAREER GOALS IN UTEACH | 101

*Student Recruitment, Retention, and Support |
Interactive Presentation*

Whitney Cade, Researcher, American Institutes for Research
Feng Liu, Researcher, American Institutes for Research
Michael Vaden-Kiernan, Managing Director, American Institutes for Research
Melissa Dodson, Consultant, American Institutes for Research

UTeach is designed to be attractive to STEM majors. In this session, researchers present findings from a study that examines factors related to the recruitment, retention, and graduation of STEM majors in UTeach programs in Texas. Participants will listen to results, ask clarifying questions, and discuss ways that UTeach sites can use the findings in their programs.

INTEGRATING CULTURALLY RESPONSIVE PEDAGOGY INTO STEM TEACHER PREPARATION PROGRAMS | 103

*Instructional Program and Courses |
Interactive Presentation*

Paige Evans, Clinical Professor, University of Houston
Leah McAlister-Shields, Academic Program Manager, University of Houston
Mariam Manuel, Instructional Assistant Professor, University of Houston
Donna Stokes, Associate Professor, University of Houston
Jacqueline Ekeoba, Master Teacher and Doctoral Student, University of Houston

Participants will employ the CRP Lesson Analysis Tool and discuss how this is currently incorporated into our curriculum. We will also discuss how UTeach courses as well as secondary mathematics and science teachers have already incorporated or may incorporate CRP.

HOW DO WE PREPARE OUR STUDENTS TO ASSESS THREE-DIMENSIONAL LEARNING IN SCIENCE? | 104

*Instructional Program and Courses |
Interactive Presentation*

Laurie Cleavinger, Multi-term Lecturer, University of Kansas
Spencer Martin, Curriculum Instructional Coach: Secondary Science, Kansas City Kansas School District

The Science Task Prescreen is intended to be part of a collaborative professional learning process. The Prescreen can help build a common understanding of the assessment / task being analyzed and provide some starting points for improving it. Participants will collaborate to assess several assessment tasks as they build an understanding of how the tool is used. We will then share how it was used in PBI to screen assessment tasks. We will discuss the future use of the prescreen tool.

ATTRACTING MENTOR TEACHERS THROUGH PARTNERSHIP | 105

*Student Recruitment, Retention, and Support |
Interactive Presentation*

Terry Johnson, Instructor, University of Central Arkansas
Todd Abel, Assistant Professor of Mathematics, University of Central Arkansas

In our rural setting, we partner with more than a dozen school districts. Attracting mentors is a challenge without funds. We'll discuss three unique partnerships with multiple moving parts that made candidate placement valuable to the school districts. Perspectives from mentors, candidates, administration, and partnering agencies will be included. We'll also discuss efforts that were less successful and encourage discussion among participants regarding their situations and experiences.

ADVOCATING FOR YOUR UTEACH PROGRAM | 106

*UTeach Program Sustainability |
Interactive Presentation*

Sarah Matz, Director, State Government Affairs — Southern Region TechAmerica, CompTIA

Sarah Matz will discuss the different ways you can advocate for your UTeach program with state legislators.

DIGITAL STORYTELLING: A NEW CS KIT FOR STEP 1 | 107

*Instructional Program and Courses |
Interactive Presentation*

Shelly Rodriguez, Associate Professor of Practice, University of Texas at Austin
Jason Harron, Doctoral Student, University of Texas at Austin
Natalie Freed, Doctoral Student, University of Texas at Austin
Michael DeGraff, Instructional Specialist, UTeach Institute

Participants in this session will engage with a newly designed Step 1 kit that explores aspects of coding and physical computing. Participants will work through the kit as students and have the chance to provide feedback to the lesson authors. Successes and challenges from the pilot of these lessons in the elementary classroom will also be shared. The session will conclude with a discussion of additional opportunities for integrating CS with the UTeach curriculum.

UTEACH COURSE OVERVIEW: FUNCTIONS AND MODELING | 108

*Instructional Program and Courses |
Interactive Presentation*

Steven Obenhaus, Master Teacher, UKanTeach, University of Kansas

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.

ROUNDTABLE WITH UTEACH GRADUATES | 301

UTeach Student Topics | Roundtable Discussion

Kelli Allen, Clinical Assistant Professor / Master Teacher, UTeach Austin, University of Texas at Austin

What are the pressing issues for teachers entering the profession? Graduates will share ideas and insight over educational topics that are relevant to all teachers. Participants will interact with peers to share-out best practices and ideas for meeting the needs of students and overcoming challenges all teachers face. Possible topics for discussion are equity, innovative teaching, classroom management, blended learning, or any other topic attendees wish to discuss.

GIS FOR DATA VISUALIZATION IN PROJECT-BASED LEARNING | SALON A

*Instructional Program and Courses |
Hands-On Workshop*

Steve Case, Director of the Center for STEM Learning; Assistant Director of the Center for Science Education; Co-Director, UKanTeach, University of Kansas

Thomas R. Baker, KU CSTEM Affiliated Researcher and ESRI Education, University of Kansas

Teachers have increasingly been using GIS to extend Project-Based Learning (PBL) in the classroom. In order to successfully support student inquiries, teachers need a diverse pedagogical and technical skill set. In this workshop, participants will review basic and advanced GIS skills and materials while simultaneously adapting the technology to the pedagogical framework of PBL.

6:00–8:30 p.m.

An optional film screening of National Geographic's *Science Fair* at the Alamo Drafthouse Ritz. Food and beverages will be available for purchase. If you chose this option when you registered, please pick up your ticket at the reservation desk.

Thursday, May 23

8:00–8:45 a.m. Breakfast

BREAKFAST | TEJAS DINING ROOM

TEXAS REPLICATION SITES MEETING | TEJAS DINING ROOM

Closed Meeting

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

9:00–11:45 a.m.

VCAST UTEACH INSTRUCTOR WORKSHOP | SALON A

By invitation only.

9:30–11:45 a.m.

SEED PLANNING | 301

By invitation only.

9:30–10:30 a.m.

GIVING MATHEMATICS MAJORS PURPOSE IN RESEARCH METHODS | 101

*Instructional Program and Courses |
Interactive Presentation*

Megan Beckam, Master Teacher, University of Nevada, Reno
Glenn Waddell, Master Teacher, University of Nevada, Reno

Convincing math majors that science research matters to them is hard. Convincing science majors that math research matters to them is equally hard. Having them both in the same class is even harder! We will share an innovative strategy we used this year to create community and give context to both types of majors. Participants will get access to lessons, activities, and materials that may help them in their programs. Finally, we will discuss plans for further adaptation of this course model.

INTERVIEW AND RÉSUMÉ PREP WITH IDEA PUBLIC SCHOOLS | 103

UTeach Student Topics | Hands-On Workshop

Hannah La Porte, Talent Partner, IDEA Public Schools

This session is an opportunity to speak with hiring managers to see what they look for in résumés and in-person interviews. We will be diving into how to make your résumé stand out and best practices during an interview.

EXPANDING THE MODEL TO AGRICULTURE EDUCATION MAJORS | 104

*Instructional Program and Courses |
Interactive Presentation*

Robin Bollman, Master Teacher, Middle Tennessee State University
Andrea Reeder, Master Teacher, Middle Tennessee State University
Heather Corban, Master Teacher, Middle Tennessee State University
Rhiannon Overcast, Student, Middle Tennessee State University
Lindsey Parsley, Student, Middle Tennessee State University

The addition of agriculture education students in the MTeach program situates us to grow and expand our reach to include students in agriculture classrooms in the next decade and beyond. We will discuss steps taken for implementation, share course changes, and discuss Step 2/CI Agriculture lessons created by students and master teachers. Participants will also engage in short agriculture mini demonstrations. An open table discussion will allow participants to share how they have or might expand their program.

HOW DO MASTER TEACHERS SPEND THEIR TIME? A WORKLOAD STUDY | 105

*STEM Ed Research and Policy |
Interactive Presentation*

Peggy Ward, Clinical Assistant Professor, University of Arkansas, Fayetteville
Kim McComas, Clinical Assistant Professor, University of Arkansas, Fayetteville

Master Teachers, how do you spend your time? Is your time distribution valued according to university and college promotion guidelines? We will review a personal workload study and discuss the ramifications of the study findings. What can Master Teachers do to better advocate for themselves?

WALK THE WALK: SHARE YOUR OWN GUEST TEACH TO BUILD A CLASSROOM CULTURE OF REFLECTION | 107

*Instructional Program and Courses |
Interactive Presentation*

Steven Obenhaus, Master Teacher, University of Kansas
Michael Ralph, Master Teacher, University of Kansas

We'll show video clips taken from a master teacher implementing a middle school lesson under the same conditions as Step 2 students. Attendees will critique the teaching video as students do in class. These video segments provide opportunities to pursue Step 2 course objectives related to equity and assessment, in addition to objectives related to providing feedback and engaging in reflection. Our results show how video analysis improves student lessons, promotes candid self-reflection, and appears in positive comments on course evaluations. Time for discussion and sharing of other master teacher experiences will be provided.

CREATING DIGITAL STORIES FOR EQUITY PROJECTS IN CLASSROOM INTERACTIONS | 108

*Instructional Program and Courses |
Interactive Presentation*

Elizabeth MacTavish, Clinical Assistant Professor in STEM Education, University of Tennessee, Knoxville

The goal of the session is to share a digital means for students to present their equity topic in the CI course. I will discuss the key components of digital storytelling and how these components are presented to my students. I will share the CAEP/InTASC aligned rubric our team has developed and allow participants to ask questions. Additionally, I want to share examples of digital stories made by our students and provide instructions for working with iMovie software. Because the session will focus on iMovie software, participants are encouraged to bring their Mac laptops. This is a suggestion, not a requirement, for participation in the session.

10:45–11:45 a.m.

NAVIGATING THE FULL-YEAR CLINICAL RESIDENCY | 101

*Instructional Program and Courses |
Interactive Presentation*

Chris Campbell, Master Teacher, Louisiana Tech University
Glenn Larson, Master Teacher, Louisiana Tech University

Louisiana is moving toward requiring a full-year clinical residency for education majors, and we feel that it gives our students the benefit of not only spreading out the nine credit hours over a year, but also of seeing how classroom management and culture are established. Clinical residents have the benefit of seeing the beginning and not just the last part of the school year. Several of our graduates will be present to discuss their experience of the full-year residency, including challenges and benefits of the program.

SUPPORTING YOUR FIRST FIVE YEARS: KNOWLES TEACHER INITIATIVE FELLOWSHIP | 103

*U Teach Student Topics |
Interactive Presentation*

Jeff Rozelle, Director of Programs, Knowles Teacher Initiative

The Knowles Teaching Fellows Program is an intensive and cohesive five-year program that supports early career high school mathematics and science teachers in their efforts to develop teaching expertise and lead from the classroom. This session will provide an overview of the Knowles Teaching Fellowship, including benefits and the application process.

GROWING TEACHER PRACTICE—IMPROVING PRACTICE TRANSFER | 104

*Instructional Program and Courses |
Roundtable Discussion*

Jo'el Johanson, Assistant Clinical Professor, Northern Arizona University
Sharon Cardenas, Associate Clinical Professor, Northern Arizona University
Theresa Fuller, Assistant Clinical Professor, Northern Arizona University

Through this roundtable discussion, participants will identify current practice implementation strategies, list their thoughts on effectiveness, identify where improvements can be made, and sketch an overview for how they can make changes to improve the transfer of teaching practices.

FREE MEETING SPACE | 105

Anyone can use this space for informal conversations.

CHECK THIS OUT! MATERIALS RESERVATION AND CHECK-OUT SYSTEM | 107

Student Recruitment, Retention, and Support | Interactive Presentation

Michelle Childress, *Master Teacher, University of Arkansas, Fayetteville*

Ryan Rau, *Technology Coordinator, University of Arkansas, Fayetteville*

The presenters will address challenges faced with students reserving materials, checking materials/bins out, and returning materials/bins. The presentation will show how our materials reservation system was created and allow attendees to interactively reserve and check-out materials. Pictures of equipment room/bins, and the checkout system will be presented along with a discussion of how our program has implemented and utilized a more efficient process for the master teachers, student workers, and students.

STEP(PING) INTO COMPUTER SCIENCE ONE BIT AT A TIME | 108

Instructional Program and Courses | Interactive Presentation

Rachelle Haroldson, *Clinical Associate Professor, University of Wisconsin-River Falls*

This session will open with a conversation about how other people are integrating computer science into the Step courses. Following that, there will be hands-on activities with Ozobots and an activity involving CS children's books/graphic novels. Participants will brainstorm ways to use these materials as well as receive specific lessons to use in Step classes. There will be time for Q&A so participants can learn more about how the presenter integrates CS in Step courses and throughout the program.

11:45 a.m.–1:00 p.m.

LUNCH | TEJAS DINING ROOM

1:00 p.m.

ADJOURN

1:00–2:30 p.m.

USEA ANNUAL BUSINESS MEETING | 301

This is the annual business meeting of the USEA Executive Board. All USEA members are welcome to observe the proceedings.

Thank You

Thank you to Patrick McGuire (UCCSTeach), Martha Day (SKyTeach), Katie Donaldson (UTeach Dallas), and Katrina Rothrock (UKanTeach) for serving on a conference advisory committee to discuss and recommend additions to the conference this year.

UTEACH PARTNERS AND SUPPORTERS

National Math and Science Initiative | nms.org

The National Math and Science Initiative is an education nonprofit organization focused on expanding access to high-quality STEM education by supporting students, empowering teachers, and transforming schools. Stop by our table to learn about our programs and try out our photobooth!

Carolina Biological | carolina.com

Carolina Biological has proudly supported educators for 90 years, providing innovative science materials to classrooms around the world. Our mission is to provide educators the finest products and services to aid in science literacy. Let Carolina help make your lesson plans even more impactful with our kits, supplies, and resources to confidently prepare your STEM students.

Mathematics Learning by Inquiry | mathematicslearningbyinquiry.org

Mathematics Learning by Inquiry optimizes learning and success in mathematics classrooms through 1) increased use of active learning techniques, 2) incorporation of relevant applications of mathematics, and 3) development of broader academic success skills.

UTeach STEM Educators Association (USEA) | usea.uteach.utexas.edu

The UTeach STEM Educators Association (USEA) unites all UTeach teacher preparation programs, UTeach alumni, and other organizations interested in promoting STEM literacy for all students. USEA was founded in 2014 by the first 13 universities to implement the UTeach program, which began at the University of Texas at Austin in 1997. UTeach is now in 44 universities in 21 states and the District of Columbia.

UTeach Professional Development | pd.uteach.utexas.edu

UTeach at The University of Texas at Austin offers online and in-person professional development on blended learning, computer science, project-based instruction, and more. The UTeach focus on inquiry-based learning is the foundation for UTeach Professional Development. In our PD sessions, we model inquiry-based learning, integrate inquiry with technology, and promote equity for all learners.

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National Math and Science Initiative

Carolina Biological

Mathematics Learning by Inquiry

UTeach STEM Educators Association (USEA)

UTeach Professional Development