



7TH ANNUAL STEM ED CONFERENCE

Toward Transformative Practices:

Uprooting Foundations of STEM and Planting Rhizomes
of Equity and Justice

SCIENCE
TECHNOLOGY
ENGINEERING
MATHEMATICS

7th Annual STEM Education Conference

February 26-27, 2024

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Bhaskar Upadhyay.....	University of Minnesota
Christopher Wright.....	Drexel University

Schedule at-a-glance

Day	Time	Item
Feb 26	7:30 AM – 6:00 PM	On-site registration and check-in
	9:00 AM – 10:15 AM	Opening Session
	10:15 AM – 11:15 AM	Concurrent Sessions
	11:15 AM – 12:15 PM	Concurrent Sessions
	12:15 PM – 1:30 PM	Lunch (on your own)
	1:30 PM – 2:30 PM	Concurrent Sessions
	2:45 PM – 3:45 PM	Concurrent Sessions
	4:00 PM – 5:00 PM	Concurrent Sessions
	5:30 PM – 8:00 PM	Conference Social Hour
Feb 27	7:30 AM – 3:00 PM	On-site registration and check-in
	9:30 AM – 10:30 AM	Concurrent Sessions
	10:30 AM – 10:45 AM	Break
	10:45 AM – 11:45 AM	Concurrent Sessions
	11:45 AM – 1:15 PM	Lunch (on your own)
	1:15 PM – 2:15 PM	Concurrent Sessions
	2:15 PM – 3:15 PM	Concurrent Sessions
	3:15 PM – 3:30 PM	Break
	3:30 PM – 4:30 PM	Closing Plenary Session
	4:30 PM – 5:30 PM	Closing Remarks

Welcome!

¡Bienvenidos! 欢迎光临! स्वागत छ! خوش آمدید!

Dear STEM Education Conference Attendee:

The Office of Engaged Scholarship & Learning and the College of Education and P-16 Integration at the University of Texas Rio Grande Valley welcome you to the 2024 International STEM Education Conference, *Toward Transformative Practices: Uprooting Foundations of STEM and Planting Rhizomes of Equity and Justice*. We are thrilled to have you join us for this exceptional event, which promises to be a thought-provoking and inspiring experience.

Over the years, our conference has served as a platform for educators, researchers, and students from various STEM disciplines to come together and exchange groundbreaking ideas. This year, we are focusing on the critical theme of equity and justice in STEM education. In our pursuit of educational progress, we focus on uprooting the existing foundations of STEM and foster a transformative environment that embraces diversity, inclusivity, and fairness.

Throughout this conference, you can expect a diverse range of speakers, panel discussions, workshops, and interactive sessions led by esteemed colleagues, and students in the field. Our goal is to provide you with valuable insights, innovative and practical strategies, and tried and proven approaches that will serve as an inspiration to you to create transformative practices in your education setting.

We sincerely thank you for your dedication to advancing STEM education. By attending this conference, you are contributing to a movement that seeks to break barriers and create a bright future for all our learners. Together we can plant the seed of transformative change and nurture a more inclusive and equitable STEM community.

Once again, ¡Bienvenidos! 欢迎光临! स्वागत छ! خوش آمدید! To the 7th Annual STEM Educational Conference. We look forward to your active participation and the invaluable contributions you will bring to this transformative event.

Warm regards,

The STEM Education Advisory Board

A Welcome Letter from the STEM Education Conference Founder

Dear Attendees:

We are thrilled to welcome you to the 7th Annual STEM Education Conference, *Toward Transformative Practices: Uprooting Foundations of STEM and Planting Rhizomes of Equity and Justice*. As the organizer and founder of this event, it is my honor to extend a warm and heartfelt welcome to you all.

This year, we have developed a conference program that aims to push the boundaries of STEM education further toward transformation. Our theme is a symbol of our commitment to creating an inclusive and equitable space for all participants and attendees alike.

This conference is not just a gathering of scholars and researchers, but of great minds. Let's use this opportunity as a platform for inspiration, collaboration, and most importantly action. We encourage you to actively engage with your fellow attendees, share your experiences and participate in interactive sessions. Together, we are being empowered to sow the seeds of change and cultivate a bright future where an equitable learning environment and justice are the cornerstone of STEM education.

I would like to extend my sincere gratitude to our presenters and dedicated organizing committee for their unwavering and invaluable contributions in making this 7th Annual STEM education conference a reality and a success. Their expertise and passion for this field will undoubtedly fire up meaningful conversations and spark a flame of transformative ideas that will be put into action in STEM education.

Finally, I would like to extend a heartfelt thank you to all our attendees. Your presence and participation together are what make this conference so special. We are honored to host you and have you with us in this journey toward the exploration of transformative practices and ingenuity in STEM education.

Sincerely,

Angela Chapman

Conference Founder and Organizer

About our invited speakers and guests

Dr. James L. Moore III



As a member of the executive leadership team at the National Science Foundation (NSF), Dr. James L. Moore III is the Assistant Director for the Directorate for STEM Education (EDU). With an annual budget of over \$1 Billion and personnel oversight for nearly 200 employees, he serves as the senior leader for EDU, which supports science, technology, engineering, and mathematics (STEM) projects focusing on K-12 education, undergraduate and graduate education, workforce, and human resource development, and learning in formal and informal settings. Prior to his NSF appointment, Dr. Moore served, for over five years, as the university's vice provost for diversity and inclusion, chief diversity officer, and leader of the Office of Diversity and Inclusion (one of the nation's oldest, largest, and most comprehensive office of its kind) at The Ohio State University. From 2015 to 2017, he served as a program director for Broadening Participation in Engineering in the Directorate for Engineering at NSF, and, during that time, he

was one of the program directors who helped launch the highly acclaimed, cross-directorate, NSF INCLUDES, a \$100 million plus national broadening participation in STEM initiative. From 2011 to 2015, he was an associate provost for diversity and inclusion at The Ohio State University, where he managed numerous nationally acclaimed programs and units.

Dr. Moore is nationally recognized for his work on African American males, and he has served on The Ohio State University's faculty, since 2002. He is the first executive director for the Todd Anthony Bell National Resource Center on the African American Male and is the inaugural EHE Distinguished Professor of Urban Education at The Ohio State University. His research agenda focuses on *school counseling, gifted education, urban education, higher education, multicultural education/counseling, and STEM education*, and Dr. Moore is often quoted, featured, and mentioned in popular publications, such as the *New York Magazine, New York Times, St. Louis Post-Dispatch, Columbus Dispatch, Spartanburg Herald, Cincinnati Enquirer, Journal of Blacks in Higher Education, Chronicle of Higher Education*, and *Diverse: Issues in Higher Education*. Since 2018, he has been cited annually by *Education Week* as one of the 200 most influential scholars and researchers in the United States.

Dr. Moore has co-edited and co-authored seven books: (a) *African American Students in Urban Schools: Critical Issues and Solutions for Achievement*; (b) *African American Male Students in PreK-12 Schools: Informing Research, Policy, and Practice*; (c) *Black Males and Intercollegiate Athletics: An exploration of Problems and Solutions*; (d) *Advancing Educational Outcomes in Science, Technology, Engineering, and Mathematics at Historically Black Colleges and Universities*; (e) *Gifted Children of Color Around the World: Diverse Needs, Exemplary Practices and Directions for the Future*; (f) *Black Boys are Lit: Engaging PreK-3 Gifted and Talented Black Boys Using Multicultural Literature and Ford's Bloom-Banks Matrix*; and (g) *African American Young Girls and Women in PreK12 Schools and Beyond: Informing Research, Policy, and Practice*. Further, he has published over 160 publications; obtained over \$40 million in grants, contracts, and gifts; and given over 200 scholarly presentations and lectures throughout the United States and other parts of the world (e.g., Dominican Republic, Brazil, Bermuda, Bahamas, Jamaica, Canada, England, Spain, China, India, Indonesia, Ireland, and France).

Carlos Iván Moreno Arellano



Carlos Iván es egresado de la Licenciatura en Finanzas de la Universidad de Guadalajara (UdeG), y cuenta con un Doctorado (Ph.D.) en Políticas Públicas por la Universidad de Illinois-Chicago. Ha sido investigador visitante en la Universidad de Chicago y cursado programas en innovación y gobernanza en Harvard y el MIT. Sus investigaciones se centran en temas como la gobernanza en universidades, políticas públicas comparadas y cambio organizacional. En la UdeG se ha desempeñado como Coordinador General de Internacionalización, como Coordinador General Académico y de Innovación y como Vicerrector Ejecutivo. Ha trabajado en el ámbito gubernamental e internacional, destacando su trabajo como Jefe de Asesores en la Cámara de Diputados federal y asesor del Subsecretario de Educación Superior de la SEP.

Actualmente se desempeña como Rector del Sistema de Universidad Virtual en la Universidad de Guadalajara.

Carlos Iván graduated with a Bachelor's degree in Finance from the University of Guadalajara (UdeG), and holds a Ph.D. in Public Policy from the University of Illinois-Chicago. He has been a research fellow at the University of Chicago and completed programs in innovation and governance at Harvard University and MIT. His research focuses on topics such as governance in universities, comparative public policy, and organizational change. At UdeG he has served as Chief International Officer, as Chief Academic Officer and as Executive Vice President. Also, he has worked in the governmental and international fields, notably as Chief of Staff at the Federal Congress and as advisor to the Undersecretary of Higher Education at the SEP. He currently works as Dean of the Online University System at the University of Guadalajara.

Gonzalo Peñaloza Jiménez



Profesor titular del Centro de Investigación y Estudios Avanzados del IPN, adscrito a la Unidad Monterrey y Coordinador de la Maestría en Educación en Biología para la Formación Ciudadana. Gonzalo obtuvo su doctorados bivalentre en la Universidad Distrital Francisco José de Caldas, Bogotá, Colombia y en la Universidad Federal de Bahía, Salvador, Brasil. El trabaja las líneas de investigación: Enseñanza de la evolución, interacciones entre ciencia y religión en la historia de la educación en ciencias, abordaje con perspectiva de género en la enseñanza de la biología. Tiene el reconocimiento de investigador a nivel nacional por el Consejo de Ciencia, humanidades y Tecnología de México.

Professor at the Center for Research and Advanced Studies of the IPN, attached to the Monterrey Unit and Coordinator of the master's degree in biology education for Citizenship Training. Gonzalo obtained his bivalent doctorate at the Universidad Distrital Francisco José de Caldas, Bogotá, Colombia and at the Universidad Federal de Bahía, Salvador, Brazil. He works on the following lines of research: Teaching evolution, interactions between science and religion in the history of science education, approach with

gender perspective in biology teaching. He has the recognition of researcher at national level by the Council of Science, Humanities and Technology of Mexico.

Amanda Morales



is an Associate Professor of Critical Multicultural & Multilingual Education in the Department of Teaching, Learning, and Teacher Education at the University of Nebraska-Lincoln. Amanda earned her Ph.D. in Curriculum and Instruction from Kansas State University and her Master's degree in Education Foundations from Texas Christian University with an emphasis on informal science education and museum studies. During her time in Texas, she worked as the Assistant Director of Visitor Programs at the Fort Worth Museum of Science & History where she designed and facilitated public, community, and school-based programming across the highly diverse Dallas-Fort Worth Metroplex. Furthermore, as a member of the *Texas Center for Inquiry* leadership team, she facilitated professional development for educators across the state. Now as a tenured professor and teacher educator, Dr. Morales' research addresses issues of equity and access for minoritized students across the PK-16 education continuum. Her current work focuses on teacher preparation for working with minoritized, (im)migrant, and

multilingual students, as well as the experiences of pre-service and in-service teachers of color in predominately white institutions. Amanda teaches both graduate and undergraduate courses on critical multicultural education, intercultural communication, curriculum theory, and decolonizing/ anticolonial theories in education.

Lisa Martin



is a Professor of Science Education at California State University Long Beach and the Executive Director of the National Association of Research in Science Teaching (NARST). Dr. Martin's research focuses on ways that pedagogy impacts students learning in both formal and informal science education environments.

Jomo Mutegi



is the recipient of the 2024 Outstanding Contributions to STEM Education Disruptor Award. **Jomo W. Mutegi** is an Associate Professor of science education at Old Dominion University (ODU), and President-Elect of the National Association of Research in Science Teaching (NARST), which is the most prominent international association of science education researchers in the world. Dr. Mutegi’s research aims to (a) better understand and disrupt systemic racism in the STEM education of people of African descent; and (b) advance practical curriculum for STEM learners. His work appears in several respected journals including the Journal of Research in Science Teaching, Science Education, Teachers College Record, and The Science Teacher. As Principal Investigator of the Mutegi STEM Learning Lab, Dr. Mutegi has received over \$3.6 million in external grant funding.

Guided by the counsel of Dr. Amos Wilson who reminds us that, “The function of education is to secure the survival of a people,” Dr. Mutegi works through the Mutegi STEM Learning Lab to conduct research and create educational materials that contribute to the survival of African people.

Brenda Hunter Murphy



is the Program Developer and co-teacher for the Ashita Thewathe K–12 nature-based education program at Umonhon Nation Public School. She completed her Doctorate in Education from the University of Nebraska-Lincoln. She has a teaching experience of 25 years total between Winnebago, Walthill, and Macy bridging many levels from Head Start to college. She started working as a teacher and education coordinator at Winnebago Tribal Head Start where she was a bilingual co-teacher for a Title VII literacy grant. Then, she transitioned into college teaching as an adjunct faculty where she taught Introduction to Early Childhood Education and Introduction to Art at Little Priest Tribal College. Subsequently, she served as a language apprentice and worked in curriculum and materials development for the HoChunk Renaissance. Later, she worked as a K-12 art teacher at Walthill Public School.

She also taught at St. Augustine Indian Mission, Winnebago. Four years ago, she was given an opportunity to bring her experience as a teacher and lifelong naturalist together and begin developing a nature-based education program in collaboration with Umonhon Nation Public School (UNPS) in Macy, Nebraska. She is currently teaching 2nd, 4th, and 5th grade science and leading the Ashita Thewathe outdoor science classroom program at UNPS. She and her co-teachers have turned education inside out and are teaching science through the cultural lens. It is Dr. Hunter Murphy’s goal to help bring this K-12 approach to all public schools.

Michele Blackbird



is an enrolled member of the Umonhon Nation and a direct descendant of Chief Blackbird. She currently serves as the Director of Native American Education (Title VI) for the Umóⁿhoⁿ Nation Public School, where she once worked as a paraprofessional while in graduate school. Michele has since spent her entire seventeen-year teaching career working with secondary and elementary students. She has taught Alternative Education, Middle School Science, Credit Recovery, Secondary Life Skills, Inclusion, and Umóⁿhoⁿ Language. Serving in these diverse areas allowed her to gain experience in teaching all subjects including cross-curricular instruction. Michele also spent 5 years teaching Algebra at Little Priest Tribal College as an adjunct professor in the evenings and summer. Michele holds a Bachelor of Arts Degree in English/Creative Writing from Creighton University in Omaha, Nebraska. She also has a Master of Education in Mild/Moderate - SpEd from the University of Nebraska - Lincoln. Michele has teaching certifications in teaching Elementary Education, ESL certification for K-12, Special Education certification 7-12, HOUSSE Endorsement for Secondary Language Arts (7-12), and HOUSSE Endorsement for Secondary Natural Sciences (7-12). She also holds an administrator's certification in PK-12. Other degrees held by Michele are a Master of

Science in PK-12 Administration and a Master of Science in Education majoring in both Cross-Curricular Instruction and Curriculum and Instruction Leadership.

Monday, February 26, 2024

Day 1 Concurrent Sessions

Location/Format	Session Information
<p>Location: Ruby Red</p> <p>9:00 AM – 10:15 AM</p>	<p><i>Opening Session</i></p> <p>Welcome message and introduction of distinguished speakers</p> <p>James Moore, Assistant Director for the Directorate for STEM Education</p> <p><i>Creating Opportunities Everywhere: National Investments in STEM Education</i></p> <p>Gonzalo Peñaloza Jiménez, Professor at the Center for Research and Advanced Studies of IPN, Campus Monterrey</p> <p><i>The challenge of digital transformation in the University of Guadalajara</i></p> <p>Carlos Iván Moreno Arellano, Dean of the Online University System at the University of Guadalajara</p> <p><i>Educación en Biología desde la mirada interdisciplinar desde la experiencia del Cinvestav Monterrey, México</i></p> <p><i>Biology education from an interdisciplinary perspective from the experience at Cinvestav Monterrey, Mexico</i></p>
Concurrent Sessions: 10:15 AM – 11:15 AM	
<p>Location: Key Lime</p> <p>Format: Paper Presentation</p> <p>Theme: Technology Application in the Classroom and Society</p>	<p><i>Key Factors for Effective STEM Technology Integration: A Meta-Synthesis of the Literature</i></p> <p>Integrating classroom technology is a priority for educators aiming to enhance student learning. This qualitative research is reporting the results of metasynthesizing nine research articles sharing teacher-perspective regarding integration of technology to extract contributing factors. ongoing teacher training, alignment with curricular standards, and accessibility were some of the extracted factors.</p> <p>Presenters: Thalia Juarez, Lydia Ratel Valenzuela, Dulce Martinez</p>
<p>Location: Key Lime</p> <p>Format: Paper Presentation</p> <p>Theme: Student-Centered Equitable Learning Environments</p>	<p><i>Promoting Preservice Teachers' Understanding of the Nature of Science Using Phenomenon-Based Learning</i></p> <p>The Next Generation Science Standards (NGSS) outline specific expectations regarding students' understanding of core disciplinary ideas, science practices, crosscutting concepts, and the nature of science (NOS). However, research shows that teachers often struggle to effectively teach NOS in their classrooms due to insufficient training and a lack of exemplary curricular materials. This paper discusses an innovative approach for</p>

	<p>addressing these challenges through the integration of explicit NOS instruction within a phenomenon-based learning (PhBL) framework implemented in a secondary science methods course.</p> <p>Presenters: Noushin Nouri, Maryam Saberi, Robab Kavandi</p>
<p>Location: Mandarin</p> <p>Format: Paper Presentation</p> <p>Theme: Sustaining Culture and Language in STEM Teaching and Learning</p>	<p><i>Exploring the Intersection of Biology, Culture, and Health Through a Cultural BioHealth Synergy Science Curriculum</i></p> <p>Exploring the transformative potential of a science curriculum that integrates critical pedagogies with real-world health challenges, this study seeks to bridge the gap between traditional teaching and pressing health concerns like type 2 diabetes, especially in marginalized communities. The focus is on reshaping preservice teachers' perceptions and pedagogical approaches.</p> <p>Presenter: Miriam Ortiz</p>
	<p><i>Sowing Seeds of Diversity: Teaching with Picture book Biographies Featuring Latinx People in STEM Careers</i></p> <p>Children of all backgrounds need to see Latinx people participating in STEM activities, including in the books and curriculum used in schools. In this session, you will learn about picture book biographies of Latinx people in STEM, including teaching ideas.</p> <p>Presenter: Janine M. Schall</p>
<p>Location: Tangerine</p> <p>Format: Deeper Dive</p> <p>Theme: Mathematics/STEM Learning in Theory and Practice</p>	<p><i>Construcción del razonamiento proporcional a través de secuencias didácticas en secundaria: Un estudio de caso</i></p> <p>Esta investigación tuvo como propósito el comprender el proceso de construcción del razonamiento proporcional en estudiantes de una secundaria en la ciudad de Guadalajara Jalisco, México, al trabajar con secuencias didácticas y problemas contextualizados que muestran el proceso de obtención de resultados, para categorizar el nivel de razonamiento proporcional alcanzado.</p> <p>Presenter: Luis Alberto Zarate Siordia</p>
<p>Location: Pomelo</p> <p>Format: Paper Presentation</p> <p>Theme: Exploring the Context in Computer Science and Engineering</p>	<p><i>Computational Justice Programs: Developing Agentic Computing Identities Among Latinas</i></p> <p>This paper examines how a computational justice program model can support Latinas (ages 13-16) interested in pursuing computing degrees and careers. We provide a definition of computational justice and a description of our efforts to incorporate the concept into an informal technology program offered in Rio Grande Valley public libraries.</p> <p>Presenters: Patricia Garcia, Melissa Perez, Beck Mallwitz, Oliver Shapton</p>
	<p><i>The Detrimental Effects of a Competitive Classroom Environment</i></p> <p>I will be analyzing the appearance of the electrical engineering classroom environment by utilizing the unique perspective I have as a student of Engineering and Philosophy. I will be drawing on philosophical approaches to pedagogy that I have studied and developed as both a student and tutor of philosophy.</p>

	Presenter: Angelina Gonzalez
Location: Lemon	<p><i>Special Forum</i></p> <p><i>Cultural Studies of Science Education</i> is a peer reviewed journal that provides an interactive platform for researchers working in the multidisciplinary fields of cultural studies and science education.</p> <p>Presenters: Catherine Milne, co-Editor-in-Chief of CSSE</p>
Location: Ruby Red Format: Poster Presentation	<p><i>JSTEM Scholar Poster Presentations</i></p> <p>Click here for poster titles and descriptions</p>



About Us

Vanguard Academy Public Charter School is located in the heart of the dynamic and diverse Rio Grande Valley. Comprised of six elementary schools and 10 high schools, Vanguard Academy serves the cities of Alamo, Edinburg, and Pharr. Vanguard Academy is the second largest charter school district in South Texas and prides itself on its innovative, forward-looking approach towards education and the success of both its students and teachers.



VANGUARD
ACADEMY

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Concurrent Sessions: 11:15 AM – 12:15 PM

Location/Format	Session Information
Location: Key Lime Format: Deeper Dive Theme: Sustaining Culture and	<p><i>Exploring the Embedded Patterns in Latina's STEM Identity: Clustered Characteristics Approach</i></p> <p>We recruited 11 participants studying STEM at UTRGV and interviewed them about their K-12 STEM experiences, their college</p>

<p>Language in STEM Teaching and Learning</p>	<p>education journey, and their post-graduation goals. An analysis of constructed student narratives will be disseminated in an exploratory, choose-your-adventure approach to demonstrate the injustice of describing STEM identity as a one-size-fits-all model.</p> <p>Presenters: Kristen Hallas, Miriam Ortiz, Maria Rodriguez, Angela Chapman</p>
<p>Location: Mandarin Format: Paper presentation</p> <p>Theme: Student-Centered, Equitable STEM Learning Environments</p>	<p><i>Escúchame, Mi Ciencia Cuenta: Leveraging Cultural Ways of Knowing in Science Education</i></p> <p>The standardized hegemonic science curriculum excludes Chicana cultural representation within the standardized curriculum. This study examines how testimonios of Chicana pre-service teachers can be leveraged to articulate culturally sustainable practices relevant to Chicana preservice science elementary teachers in the Rio Grande Valley.</p> <p>Presenter: Patricia Ramirez-Biondollo</p>
<p>Location: Mandarin Format: Paper presentation</p> <p>Theme: Mathematics/STEM Learning in Theory and Practice</p>	<p><i>Disambiguating and Relating STEM</i></p> <p>I disambiguate and relate the components of science, technology, engineering, and mathematics by considering some aspects of their logical and semantic structures, history, and the fundamental role that mathematical explanation plays in the natural sciences. I will illustrate how these issues might be fruitfully investigated by future STEM educators.</p> <p>Presenter: Gregory Gilson</p>
<p>Location: Tangerine Format: Paper Presentation</p> <p>Theme: Sustaining Culture and Language in STEM Teaching and Learning</p>	<p><i>Exploring the Intersection of Biology, Culture, and Health Through a Cultural BioHealth Synergy Science Curriculum</i></p> <p>Exploring the transformative potential of a science curriculum that integrates critical pedagogies with real-world health challenges, this study seeks to bridge the gap between traditional teaching and pressing health concerns like type 2 diabetes, especially in marginalized communities. The focus is on reshaping preservice teachers' perceptions and pedagogical approaches.</p> <p>Presenter: Miriam Ortiz</p> <hr/> <p><i>Un modelo multireferencial para el abordaje complejo del consumo de alcohol</i></p> <p>Presentamos el enfoque teórico y metodológico sobre el abordaje complejo y multireferencial –aspectos biológicos y psicosociales– del consumo de alcohol para estudiantes de primero de secundaria en México. Mostramos 1) las ideas teóricas del modelo, 2) la transposición didáctica para la enseñanza, y 3) elementos para diseñar la secuencia didáctica.</p> <p>Presenters: Luissa Marlen Galvis Solano, Alma Adrianna Gómez Galindo</p>

<p>Location: Pomelo</p> <p>Format: Deeper Dive</p> <p>Theme: Student-Centered, Equitable STEM Learning Environments</p>	<p><i>Removing the Abstract and Uprooting Contextual Factors that Improve Students' Lives through STEM Activities and Student Organizations</i></p> <p>This practical presentation enables teachers to uproot foundations and explore new ideas and learn how to integrate STEM Context and Learning in a Post-pandemic period. This proposal will address contextual factors that inhibit teaching and learning in STEM classrooms.</p> <p>Presenters: Belinda Guzman, Oscar Flores, Jr., Gerardo Flores, Afife Pestana</p>
<p>Location: Lemon</p> <p>Format: Interactive Workshop</p> <p>Theme: Student-Centered, Equitable STEM Learning Environments</p>	<p><i>Decoding the Puzzle: Exploring the Tower of Hanoi</i></p> <p>Unlock the secrets of equitable STEM education through our captivating presentation, 'Equity in STEM Classrooms: Exploring Tower of Hanoi for Enhanced Engagement'. Join us as we journey through the fascinating world of the Tower of Hanoi Don't miss this opportunity to explore the equity, engagement, and the Tower of Hanoi</p> <p>Presenter: Anna Gonzalez</p>
<p>Lunch: 12:15 PM -1:30 PM</p>	

<p>Concurrent Sessions: 1:30 PM – 2:30 PM</p>	
<p>Location/Format</p>	<p>Session Information</p>
<p>Location: Key Lime</p> <p>Format: Interactive Workshop</p> <p>Theme: Mathematics/STEM Learning in Theory and Practice</p>	<p><i>Back to the old school: Classroom games that get students off their glowing rectangles!</i></p> <p>Get your students off their glowing rectangles! Join us in this session to learn about some "Old School" games you can use to engage students while assessing and reinforcing your content.</p> <p>Presenter: Pamela Groves</p>
<p>Location: Mandarin</p> <p>Format: Paper presentation</p> <p>Theme: Sustaining Culture and Language in STEM Teaching and Learning</p>	<p><i>Supporting Latine Students' Development of Creativity and Spatial Thinking in STEM</i></p> <p>At a Primarily Hispanic-serving institution, a team is working with an introductory course to provide more culturally relevant STEM content steeped in pedagogies connecting with our Latine students. This presentation describes how the course connects sciences and mathematics to the everyday lives of our students, grows spatial thinking, and seeks to foster creative thought.</p> <p>Presenter: Lisa Martin</p>

<p>Location: Mandarin Format: Paper Presentation</p> <p>Theme: Models of Successful STEM Learning</p>	<p><i>JSTEM: A Model of Informal Learning that Promotes Authentic STEM Inquiry and Metacognitive Transfer to Formal Settings</i></p> <p>This study explores the experiences of high school students in a JSTEM summer program that provided them with the opportunity to develop their research skills through authentic and inquiry-based learning. We aim to understand how the JSTEM model impacts student learning in, attitudes toward, and career interest in STEM.</p> <p>Presenters: Mario Almanza, Uma Ganesan, Lluvia Garcia, Isabel Amaro, Yailen Gomez, Angela Chapman</p>
<p>Location: Tangerine Format: Paper Presentation</p> <p>Theme: Student-Centered, Equitable Learning Environments</p>	<p><i>Implementation and Assessment of a Course Based Undergraduate Research Experience (CUREs) in General Microbiology</i></p> <p>The over-arching goal of this project was to increase the opportunities for undergraduate students to participate in undergraduate research experiences at Tuskegee University thereby increase both the number and percentage of TU-undergraduate students who have science knowledge/technical skills, who persist to graduation, and who eventually obtain advanced degrees in STEM-disciplines.</p> <p>Presenters: Sheritta Fagbodun, Michael Cross</p>
<p>Location: Tangerine Format: Paper Presentation</p> <p>Theme: Models of Successful STEM Learning</p>	<p><i>Attracting Rural Latina/Latino/Hispanic STEM Preservice Teachers through the Noyce en la Frontera Program</i></p> <p>The Noyce en la Frontera program is exceeding recruiting and retention goal, increasing the number of highly qualified teachers by 10% in southwest Texas. Activities include a strong mentoring program equipping scholars with the knowledge, skills, and dispositions to support learner success in high-need schools along the Texas Mexico border.</p> <p>Presenters: Jennifer Miller</p>
<p>Location: Pomelo Format: Sponsored Session</p>	<p><i>Empowering Women in STEM: Cultivating Potential, Confronting Obstacles at St. Catherine University</i></p> <p>Many women shy away from pursuing STEM programs during the pivotal middle and high school years. Join us as we explore effective strategies to attract and retain women in STEM fields by nurturing their potential and tackling obstacles head-on. We will delve into the importance of initiatives like showcasing diverse role models, expanding career narratives, and promoting early career exploration. At St. Catherine University, we are dedicated to overcoming these challenges and creating a more inclusive and supportive environment for women in STEM.</p> <p>Presenters: Bindhu Alappat, Bethlehem Gronneberg</p>
<p>Location: Lemon Format: Interactive Workshop</p> <p>Theme: Student-Centered, Equitable Learning Environments</p>	<p><i>It's never too early for STEM: Developing, Implementing and Communicating STEM learning in early childhood education</i></p> <p>Creating STEM relatable instruction for EC-2 students is scary for teachers and parents. Expensive off the shelf STEM materials are designed for one time use. This session is designed to assist teachers and parents in the creation and use of STEM instruction that they and their EC-2 students will enjoy.</p> <p>Presenter: Mary Payton</p>

Location: Ruby Red	<p><i>Poster Presentations- Regular Session</i></p> <p>Click here for poster titles and descriptions</p>
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Concurrent Sessions: 2:45 PM – 3:45 PM	
Location/Format	Session Information
<p>Location: Key Lime</p> <p>Format: Paper Presentation</p> <p>Theme: Technology Application in the Classroom and Society</p>	<p><i>Teaching at the postsecondary level French Language and Culture with AI generators</i></p> <p>There are good reasons to applaud the past century's astonishing technical progress and intellectual brilliance that led to significant revolutions in education. The outcome of AI text-to-image generators and Chat Gpt seems to pass as normal, but it is neither normal nor natural for the way our brain works.</p> <p>Presenter: Irina Armianu</p> <p><i>Sensor for Infrastructure Health Monitoring: Experimental Development</i></p>

	<p>Synthesis and experimental works of a laser sensor for detecting cracks and other structural anomalies can significantly impact the integrity of infrastructure. The innovation and validation of this sensor will directly help monitor railroad health through the intended use of UAVs.</p> <p>Presenter: Alejandro Barrera</p>
<p>Location: Mandarin Format: Paper Presentation</p> <p>Theme: Socioemotional Learning Environments</p>	<p><i>The Effects of Fostering Body Awareness in Teachers: Possibilities for Teacher Education</i></p> <p>This qualitative study examined the impact of increased body awareness on the practice of five teachers. A workshop was designed and conducted to foster the teachers' presence experience through heightened body awareness. Findings illustrated a greater awareness of mind-body relationship; improved interactions with students; and a better presence while teaching.</p> <p>Presenter: Sara Ahmadi</p> <hr/> <p><i>Social-Emotional Learning Policy & STEM Education: Examining Equity & Investigating Implementation</i></p> <p>Policy plays an essential role in implementing STEM education that drives equitable outcomes. However, the policies created to ameliorate inequitable learning conditions often perpetuate prejudiced perceptions. The present investigation examines state social-emotional learning (SEL) education policy, how it impacts equity, and the presence of equity-based SEL in STEM curriculum.</p> <p>Presenters: Edward Muhammed, Ashley Gilchrist, Sheena Odom</p>
<p>Location: Tangerine Format: Paper Presentation</p> <p>Theme: Sustaining Culture and Language in STEM Teaching and Learning</p>	<p><i>STEAM Approach as the Means of Transformative Learning of School System in Nepal</i></p> <p>This paper argues that transformative STEAM teaching in Nepali schools has to be framed and delivered in ways that supports cultural and experiential knowledge of the communities. Even though the national curriculum advocates for STEM education for better learning, it comes short on why culture is central in learning.</p> <p>Presenter: Kamal Prasad Koirala</p> <hr/> <p><i>"Gaijatra": Remembering the deceased and making a space for social and political commentary in a STEAM teacher workshop</i></p> <p>In this ethnographic paper, I present the value of cultural heritage in providing spaces for teachers to explore the value of cultural history and heritage activities in generating social, political, and cultural discourses in a STEAM classroom. I share teachers' and communities' reflections and usefulness of "Gaijatra" to STEAM teaching.</p> <p>Presenter: Bhaskar Upadhyay</p>
<p>Location: Pomelo Format: Deeper Dive</p>	<p><i>Sense of Belonging, Ownership, and Pride Among Families in Education: A Grassroot Family-Centered Model for Deeper Community Engagement</i></p> <p>Participants will engage in critical conversations with AVE Frontera family leaders who have been at the center of the learning process where the Family-Centered Theory of Change has transformed teaching practices.</p>

<p>Theme: Models of Successful STEM Learning</p>	<p>Through a Deeper Dive Session, family leaders will share their experiences in the transformational process.</p> <p>Presenters: Juan Salinas, Jose Gutierrez, Yocelin Chavez, Virginia Santana</p>
<p>Location: Lemon Format: Interactive Workshop</p> <p>Theme: Technology Application in the Classroom and Society</p>	<p><i>Technology Tools to Help Fight Misinformation and Disinformation in the STEM Classroom</i></p> <p>Truth, evidence, and facts compete for attention alongside rumors, viral hoaxes, conspiracy theories, and disinformation in our classrooms. This relentless stream of misinformation confuses and divides our students and makes them feel powerless. News literacy and Checkology’s free lessons help students navigate our information landscape as healthy skeptics, not cynics.</p> <p>Presenters: Juan G. Alvarado</p>



<p>Concurrent Sessions: 4:00 PM – 5:00 PM</p>	
<p>Location/Format</p>	<p>Session Information</p>
<p>Location: Key Lime Format: Interactive Workshop</p>	<p><i>Collaborative Panel Discussions on Culturally and Linguistically Sustaining Indigenous Science Teaching Happening in Nebraska</i></p>

<p>Theme: Sustaining Culture and Language in STEM Teaching and Learning</p>	<p>The overarching objective of the proposed panel discussions is to improve the sociocultural foundation knowledge and intercultural communicative competence of UTRGV preservice teachers through their active participation in critical and reflexive panel discussions about nature-based, environmentally conscious, and culturally and linguistically sustaining science teaching happening in Nebraska's schools and universities.</p> <p>Presenters: Uma Ganesan, Brenda Hunter Murphy, Michele Blackbird</p>
<p>Location: Mandarin Format: Paper Presentation</p> <p>Theme: Models of Successful STEM Learning</p>	<p><i>STEMpowerment: Boosting Content Knowledge and Self-Efficacy in Preservice Teachers through Authentic Problem-Based Learning</i></p> <p>The study addresses the low self-efficacy and test scores in math and science competencies among elementary PSTs. The intervention involves implementing an APB curriculum in two courses to improve PSTs' math and science content knowledge and self-efficacy, focusing on the competencies with the lowest pass rates, utilizing AB/BA crossover design.</p> <p>Presenters: Johanna Esparza, Miriam Ortiz</p>
<p>Location: Mandarin Format: Paper Presentation</p> <p>Theme: Sustaining Culture and Language in STEM Teaching and Learning</p>	<p><i>Uprooting-Cultural and Linguistic Immersion Experience to Enhance Culturally Responsive Pedagogies: An Ethnographic Study in Mexico</i></p> <p>This paper presents highlights from initial data analysis and preliminary findings of an ethnographic study during a linguistic/cultural immersion experience in Mexico--insights into an adult language learner's capacity to engage in transformative, culturally responsive/sustaining pedagogies and "an opportunity to sow seeds of diverse ways to construct and value knowledge."</p> <p>Presenter: Karin Ann Lewis</p>
<p>Location: Tangerine Format: Interactive Workshop</p> <p>Theme: Sustaining Culture and Language in STEM Teaching and Learning</p>	<p><i>The Impact of Translanguaging on Educational Experiences of Secondary Bilingual Students in Science Classrooms</i></p> <p>This presentation analyzes how secondary bilingual students interact at school and the difference in their interaction and expression in their classrooms, specifically in the language in which they communicate. Secondary bilingual students try to navigate through their translingual identities and may encounter personal struggles, the question is how can we help?</p> <p>Presenter: Luis Carlos Bocanegra</p>
<p>Location: Pomelo Format: Interactive Workshop</p> <p>Theme: Models of Successful STEM Learning</p>	<p><i>La Frontera Mobile Makerspace Program: Serving Isolated Southwest Populations in the Middle Rio Grande Valley</i></p> <p>Discover how informal learning approaches through a mobile makerspace program centered on the upcoming solar eclipse can assist in helping preservice teachers, mentor educators, and the general public engage in increased interest in future ready STEM careers.</p> <p>Presenter: Jennifer Miller</p>
<p>Location: Lemon Format: Interactive Workshop</p>	<p><i>Cybersecurity Basics for grades K-8</i></p> <p>Cybersecurity Basics is a free introductory course for students in grades K-8. This course introduces cybersecurity topics that affect our everyday life in</p>

Theme: Technology Application in the Classroom and Society	plain, simple language ensuring accessibility to all. Any teacher can teach the course, and there are separate activities for grades K-2, 3-5 and 6-8. Presenter: Sheryl Roehl
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Day 2 Tuesday, February 27, 2024	
Day 2 Concurrent Sessions	
Concurrent Sessions: 9:30 AM – 10:30 AM	
Location/Format	Session Information
Location: Key Lime	<i>Exploring the role of culture/nature for a more joyful STEM education</i>

<p>Format: Paper Presentation</p> <p>Theme: Sustaining Culture and Language in STEM Teaching and Learning</p>	<p>I have been working with the ideas of culturally sustaining pedagogy and I wonder if people would be willing to join me in an exploration of culture/nature for a sustaining pedagogy?</p> <p>Presenter: Catherine Milne</p>
<p>Location: Mandarin</p> <p>Format: Deeper Dive</p>	<p><i>Conversations with Dr. James Moore</i></p> <p>James Moore will meet with middle and high school students in the Rio Grande Valley.</p>
	<p><i>Conversations with Dr. James Moore</i></p> <p>James Moore will meet with undergraduate and graduate students in the CREST MECIS program.</p>
<p>Location: Tangerine</p> <p>Format: Paper Presentation</p> <p>Theme: Sustaining Culture and Language in STEM Teaching and Learning</p>	<p><i>Pensar el enfoque STEM desde los lugares habitados por los estudiantes**</i></p> <p>Abordamos el tema de los árboles, que surge del diálogo con padres de estudiantes de un poblado indígena al sur de México. Este tema es potente para pensar en la implementación del enfoque STEM desde una perspectiva situada y relevante, considerando los vínculos de las personas por los lugares habitados.</p> <p>Presenters: Yeison Andres Arboleda Piedrahita, Alma Adrianna Gómez Galindo, Alejandra García Franco</p>
<p>Location: Tangerine</p> <p>Format: Paper Presentation</p> <p>Theme: Mathematics/STEM Learning in Theory and Practice</p>	<p><i>Pensamiento Algebraico En Futuros Profesores Niveles de Algebrización</i></p> <p>La presente investigación describe los niveles de pensamiento algebraico de futuros profesores de primaria a partir del análisis de los procedimientos y las acciones que utilizan al resolver de forma escrita una secuencia de patrones geométricos. La investigación se llevó a cabo desde un enfoque cualitativo con 53 estudiantes.</p> <p>Presenters: Silvia Eduviges Hinojosa Rizo, Silvia Lizette Ramos de Robles</p>
<p>Location: Pomelo</p> <p>Format: Paper Presentation</p> <p>Theme: Beyond the Traditional STEM Disciplines</p>	<p><i>Action Research for Digital Financial Innovations</i></p> <p>Utilizing the Participatory Action Research methodology to develop an app. The app will address financial inclusion issues represented in the underbanked RGV region.</p> <p>Presenters: Esi Elliot, Russell Adams, Clarissa Downey</p>
	<p><i>Breaking Barriers, Building Bridges: Sustainability's Impact on Inclusive Transdisciplinary Skills in STEM</i></p> <p>There's an urgent demand for inclusive transdisciplinary skills to break down collaboration barriers. Our research investigates sustainability's impact on skill development. Findings provide actionable insights for educators and industry leaders, fostering an inclusive learning environment. Unlock the potential of sustainability to bridge the gap, cultivating diverse and skilled STEM professionals.</p> <p>Presenters: Sylvia A. Robles, Noe Vargas Hernandez, Joanne Rampersad-Ammons</p>

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WHO WE ARE

Our Mission

The MECIS mission comprises three main objectives:

1. Drive CIS research through collaborative projects with partner universities such as UCR, UIC, and UIUC, generating industry-relevant solutions and facilitating technology transfer.
2. Integrate CIS research into STEM education, emphasizing the recruitment and training of underrepresented minority students and enhancing faculty research capabilities across UTRGV departments.
3. Expand UTRGV's research infrastructure and ensure long-term competitiveness beyond the CREST support period.



WHAT WE STRIVE FOR

Our Vision

One of the nation's leaders in Cyber-physical Infrastructure Systems (CIS) research and education for underrepresented students and a catalyst for transformation in the Rio Grande Valley and beyond.

GUIDING PRINCIPLES

Our Values

INTEGRITY

Essential for trust, ethics, and accountability, fostering moral principles.

TEAMWORK

Maximizing collective potential, leveraging diverse skills and perspectives to achieve shared goals efficiently and effectively.

INTEGRITY

Always driving continual improvement and surpassing standards, ensuring outstanding performance and achievements.



<p>Location: Lemon</p> <p>Format: Deeper Dive Session</p> <p>Theme: Models of Successful STEM Learning</p>	<p><i>Building Sustainable STEM partnerships with supportive communication</i></p> <p>How does communication play a role in all levels of STEM development and partnerships? In this session, participants will be exposed to various methods of creating STEM programming and how communications at all levels is important to creating unique, engaging experiences.</p> <p>Presenter: Jeff Wheatcraft</p>
<p>Break: 10:30 AM – 10:45 PM</p>	

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Concurrent Sessions: 10:45 AM – 11:45 AM

Location/Format	Session Information
<p>Location: Key Lime Format: Interactive Workshop Theme: Models of Successful STEM Learning</p>	<p><i>STEMMING VS STEM for THEM, STEM with THEM, THEM in STEM - A Grant Project</i></p> <p>This grant project will bring people together interested in developing and implementing meaningful STEM lessons at the 5th and 6th grade level. This grant will bring together practicing STEM teachers with pre-service teachers and STEM majors at JMU. These stakeholders will contribute to developing STEM lessons.</p> <p>Presenter: Parama Chaudhuri</p>
<p>Location: Mandarin Format: Paper Presentation Theme: Sustaining Culture and Language in STEM Teaching and Learning</p>	<p><i>Narratives of Hope: Exploring solutions to the climate crisis**</i></p> <p>During a two-week period, 11th grade students saw three documentaries meant to raise awareness about climate change in Mexico. Specifically, students learned about the water, air pollution, and energy crises we face and through narratives of hope were motivated to propose their own community-based projects to tackle these problems.</p> <p>Presenters: Ada Cecilia Bersosa Hernández, Karla Andrea González Rodríguez</p> <hr/> <p><i>Perspectivas de docentes de secundaria frente a una enseñanza con enfoque STEM en escuelas rurales.</i></p> <p>Se analizan las perspectivas de docentes de una escuela ubicada en una zona rural de México sobre el enfoque STEM para la enseñanza de los saberes escolares en secundaria. Se reflexiona sobre lo que entienden los docentes sobre las disciplinas STEM y la viabilidad del enfoque en contextos escolares rurales.</p> <p>Presenters: Yesenia Castaño Torres, Maria Teresa Guerra Ramos</p>

<p>Location: Tangerine</p> <p>Format: Paper Presentation</p> <p>Theme: Sustaining Culture and Language in STEM Teaching and Learning</p>	<p><i>La regulación cognitiva de los docentes para incorporar de forma reflexiva el enfoque de STEM**</i></p> <p>Se propone generar espacios de trabajo colegiado, para que los docentes de las disciplinas STEM potencialicen sus saberes y compartan sus estrategias para la enseñanza, a partir de la autorregulación cognitiva que promueve la reflexión sobre la práctica y el desarrollo de pensamiento crítico en los profesores.</p> <p>Presenters: Milagros Cázares Balderas, Alma Adrianna Gómez Galindo</p> <hr/> <p><i>Explorando las sinergias entre el saber tradicional y el conocimiento científico en torno al atole agrio para promover la educación científica intercultural **</i></p> <p>Este trabajo busca establecer conexiones que involucren los saberes tradicionales y el conocimiento científico escolar en torno al atole agrio; incluyendo temas relevantes para la salud como: valor nutricional, microbiota y fermentación, para establecer diálogos que acerquen a los estudiantes a valorar la riqueza biológica y cultural que poseen.</p> <p>Presenters: Verenice Guzmán Lezama, Alejandra García Franco, Blanca Estela Galindo Barraza</p>
<p>Location: Pomelo</p> <p>Format: Interactive Workshop</p> <p>Theme: Sustaining Culture and Language in STEM Teaching and Learning</p>	<p><i>Collaborative Discussions on Culture, Student Identity, and Student Funds of Knowledge in STEM Fields</i></p> <p>The overarching objective of the proposed panel discussions is to improve the sociocultural foundation knowledge and intercultural communicative competence of UTRGV preservice teachers through their active participation in critical and reflexive panel discussions about nature-based, environmentally conscious, and culturally and linguistically sustaining science teaching happening in Nebraska's schools and universities.</p> <p>Presenters: Uma Ganesan, Amanda Morales, Angela Chapman</p>
<p>Location: Lemon</p> <p>Format: Interactive Workshop</p> <p>Theme: Successful Models of STEM Learning</p>	<p><i>The Effects of a Family-Centered Theory of Change on the Transformation of Teaching and Research Practices in Chemistry Courses</i></p> <p>Participants will learn about the pedagogical experiences of Chemistry faculty who implemented Family-Centered Pedagogy in several undergraduate, gateway courses. Through a panel discussion, faculty will describe their approach to teaching, learning, and lessons learned in their respective courses. Participants will have the chance to ask the panel questions.</p> <p>Presenters: Jose J. Gutierrez, Sylvia Diaz, Vanessa Garcia, Helia Morales</p>
<p>Location: Ruby Red</p> <p>Format: Poster Presentation</p>	<p><i>CREST MECIS Poster Presentation</i></p> <p>Click here to view the CREST MECIS Posters</p>
<p>Lunch: 11:45 AM – 1:15 PM</p>	

Concurrent Sessions: 1:15 PM – 2:15 PM	
Location/Format	Session Information
Location: Key Lime Format: Paper Presentation Theme: Technology Application in the Classroom and Society	<i>Key Factors for Effective STEM Technology Integration: A Meta-Synthesis of the Literature</i> Integrating classroom technology is a priority for educators aiming to enhance student learning. This qualitative research is reporting the results of metasynthesizing nine research articles sharing teacher-perspective regarding integration of technology to extract contributing factors. ongoing teacher training, alignment with curricular standards, and accessibility were some of the extracted factors. Presenters: Lydia Ratel Valenzuela, Dulce Martinez, Thalia Juarez
Location: Key Lime Format: Paper Presentation Theme: Mathematics/STEM Learning in Theory and Practice	<i>Development and Validation of a Mathematical Thinking in Science Learning Progression</i> This presentation reports on our work of developing and validating Mathematical Thinking in Science Learning Progression. Presenter: Limin Wang, Hui Jin



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<p>Location: Mandarin Format: Paper Presentation</p> <p>Theme: Sustaining Culture and Language in STEM Teaching and Learning</p>	<p><i>Manejo y conocimiento del cafetal como espacio para el fortalecimiento educativo en escuelas de zonas indígenas y rurales</i></p> <p>El café es uno de los cultivos más importantes, en México este sistema agroforestal, considerado de bajo impacto para los ecosistemas, es manejado por familias campesinas e indígenas, esto abre la posibilidad de valorar y reconocer al cafetal como un laboratorio viviente para la enseñanza de las disciplinas STEM. Presenters: Atzin Elihu Calvillo-Arriola, Alma Adrianna Gómez Galindo</p> <hr/> <p><i>Red de Milpas Escolares de Nuevo León, una comunidad de aprendizaje entre docentes y su impacto en el aprendizaje de los estudiantes</i></p> <p>Red de Milpas escolares de Nuevo León, es una comunidad de aprendizaje entre docentes interesados en sembrar milpas. Esto conlleva retos en áreas agroecológicas y escolares. El aprendizaje en comunidad representa una forma de enfrentarlos abonando al conocimiento de los estudiantes y a la formación del profesorado. Presenters: Reina Janeth Morales González, Alma Adrianna Gómez Galindo</p>
<p>Location: Tangerine Format: Paper Presentation</p> <p>Theme: Student-Centered, Equitable STEM Learning Environments</p>	<p><i>Modelización Científica en el Estudio del Sistema Respiratorio en Preescolar**</i></p> <p>La investigación analiza procesos de modelización científica desarrollados por preescolares al estudiar el modelo del sistema respiratorio. Se plantea a la modelización científica escolar como dinámica constante de creación de modelos teóricos, que implica la reconstrucción de un hecho del mundo en un hecho científico. Metodológicamente su perspectiva es interpretativa. Presenter: Dulce María González Ramirez</p> <hr/> <p><i>Supporting Latinx Preservice Teachers for Implementing Phenomenon-Based Science to Promote their Understanding of the Three Dimensions of Science Learning Emphasizing on the Nature of Science</i></p> <p>This study examined how teaching science using the instructional approach of Phenomenon Based Learning influenced the understanding of the three dimensions of the Next Generation Science Standards and the nature of science of Latinx preservice teachers. Furthermore, the participants were trained in how to develop PhBL lesson plans for science instruction. Presenter: Leslie Y. Garrido</p>

<p>Location: Pomelo Format: Paper Presentation</p> <p>Theme: STEM Beyond the Traditional Disciplines</p>	<p><i>Robotic Control Theory and Optimization Methods</i></p> <p>This research utilizes Particle Swarm Optimization (PSO) for stochastically identifying best performance parameters for a PID-designed flight controller used in Webots. The framework for PSO is based on the biological phenomenon of flocks of birds and how they work together to find the best group formation for foraging behaviors.</p> <p>Presenter: Eric Rodriguez</p> <hr/> <p><i>Hispanic Nursing Student's use of advance technology during the COVID-19 Pandemic in South Texas</i></p> <p>COVID-19 has had a major impact on the lives of nursing students. A study was conducted to assess how faculty could be of assistance to students during COVID-19. An on-line study was conducted via a cross-sectional survey. The results provided knowledge on how to assist students during the curricular transition.</p> <p>Presenters: Maria Diaz, Eleftherios Gkioulekas, Nancy Nadeau</p>
<p>Location: Lemon Format: Deeper Dive</p> <p>Theme: Models of Successful STEM Learning</p>	<p>Interdisciplinary UG Experience – Joint Research Experience for Undergraduates (REU) and Physics Projects and Arts and Science Award Project (ASAP)</p> <p>High impact practices to promote interdisciplinary, collaborative research to stimulate students' interest in STE(A)M education.</p> <p>Presenters: Ivan Davila, Volker Quetschke, Gina Gwen Palacios, Romeo Di Loreto</p>

Concurrent Sessions: 2:15 PM – 3:15 PM	
Location/Format	Session Information
<p>Location: Key Lime Format: Paper Presentation</p> <p>Theme: Mathematics/STEM Learning in Theory and Practice</p>	<p><i>Beyond Traditional Grading: Examining the Impact of Specifications Grading on Calculus Students' Mathematics Identity</i></p> <p>In this study, we explore the influence of specifications grading, characterized by transparent learning outcomes and assessment criteria, on the development of students' mathematical identity. Through this research, we aspire to provide valuable insights into the dynamic relationship between grading methods and their impact on students' mathematical identity.</p> <p>Presenters: Luis M. Fernández, Cristina Villalobos, Mayra Ortiz Galarza</p>

<p>Location: Key Lime Format: Paper Presentation Theme: Sustaining Culture and Language in STEM Teaching and Learning</p>	<p><i>In Search of Teacher Identity: Latino/a Preservice Teachers Engaging in Best-Practices at a Hispanic Serving Institution</i></p> <p>This paper explores Latino/a preservice teacher's experiences at a Hispanic Serving Institution emphasizing a transformative best-practice student-centered approach. It delves into cross-curricular pedagogy, fostering community, challenging traditional models, and creating an inclusive STEM education environment anchored in social constructivism and culturally relevant pedagogy. Presenter: Zulema Williams, Miriam Ortiz</p>
<p>Location: Mandarin Format: Paper Presentation Theme: Sustaining Culture and Language in STEM Teaching and Learning</p>	<p><i>El aborto como tema socio científico: construcción de significados de estudiantes de sexto semestre de bachillerato**</i></p> <p>La investigación tuvo como objetivo principal, evidenciar la construcción de significados del aborto de jóvenes estudiantes de bachillerato, desde un enfoque socio científico, tomando como referente los factores epistémico, no epistémico y mixto, con sus respectivos componentes. Presenters: Rosa Margarita Salcedo Magaña, Silvia Lizette Ramos De Robles</p> <hr/> <p><i>Presencia de neonicotinoides y sus metabolitos en orina de niños entre 3 y 11 años: estudio de casos en Ciudad Guzmán, Jalisco, México**</i></p> <p>Lo que se busca en esta investigación es comprobar si la exposición a neonicotinoides presenta un riesgo a la salud infantil. Los resultados nos habla de riesgo poblacional por exposición a estos químicos y se busca educar a la población y tratar de reducir la exposición y el riesgo. Presenters: Ana Bárbara Alatorre Rodríguez, Silvia Lizette Ramos de Robles</p>
<p>Location: Tangerine Format: Paper Presentation Theme: Successful Models of STEM Learning</p>	<p><i>STEM como respuesta a la interdisciplinariedad en el currículum mexicano</i></p> <p>La reforma educativa actual en México propone la implementación de un currículum integrado y formar ciudadanos críticos que cuestionen relaciones de poder y desigualdad. El enfoque propuesto para la educación en ciencias es STEAM, el cual, si bien tiene una visión interdisciplinaria, podría enriquecerse dialogando con las ciencias sociales. Presenter: María del Rocío Hernández</p>
<p>Location: Tangerine Format: Paper Presentation Theme: Sustaining Culture and Language in STEM Teaching and Learning</p>	<p><i>Percepciones del Riesgos a la Salud por Uso de Plaguicidas en el Sector Agavero del Estado de Jalisco, México**</i></p> <p>Con la finalidad de diseñar una estrategia de educación para la salud que reduzca el riesgo de exposición por plaguicidas a los trabajadores del sector agavero en Jalisco, México desarrollamos un estudio diagnóstico sobre sus percepciones y conocimientos sobre los plaguicidas, su aplicación y sus efectos dañinos a la salud. Presenters: Vianey Candelaria Samaniego Zubiata, Silvia Lizette Ramos de Robles, Gilberto Iñiguez Covarrubias</p>

<p>Location: Pomelo Format: Paper Presentation</p> <p>Theme: Student-Centered, Equitable STEM Learning Environments</p>	<p><i>Promoting Active Learning via Exploring STEM Educators' Teaching Philosophy and Course Syllabi in an HSI</i></p> <p>The purpose of the study aims to explore active learning components and RBISs from STEM educators' teaching philosophy and course syllabi from an NSF-funded professional development training program aiming to promote active learning in STEM. Data was collected in 2020-2023. Exploratory data analysis was conducted. Results and implications are discussed.</p> <p>Presenters: Pierre Lu, Jing Jie Tea</p>
<p>Location: Lemon Format: Deeper Dive</p> <p>Theme: Models of Successful STEM Learning</p>	<p><i>UTRGV Center for Equity in Engineering: Engage, Educate, Enrich (CEE-E3)</i></p> <p>UTRGV established a Center for Equity in Engineering to enhance the participation of Hispanics through addressing various inequities along the engineering career continuum from K-12 to college education and employment. Our vision: to be a national model for inclusion, professional preparation, and success of Hispanic and underrepresented students in engineering.</p> <p>Presenters: Laura Benitez, Ala Qubbaj</p>
<p>Break: 3:15 PM – 3:30 PM</p>	

Notes

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Center for Equity in Engineering (CEE) Grant Overview

Introduction:

The University of Texas Rio Grande Valley's Center for Equity in Engineering (CEE), funded by the NSF's Broadening Participation in Engineering Program (**Award #2217780**), aims to increase Hispanic (especially Latina) enrollment, retention, and advancement rates in engineering education and careers.

Strategies:

The project targets inequities across the engineering career continuum, focusing on social/family systems, education systems, and professionalization systems.

Education:

Educational initiatives for faculty include curriculum redesign, equity training workshops, and discussions on inclusive teaching.



Conclusion:

These efforts seek to create a more diverse and capable engineering workforce by addressing barriers and providing support throughout the educational and professional journey.



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Phone: (956)665-3510
utrgv.edu/cecs

Concurrent Sessions: 3:30PM – 4:30PM	
Location/Format	Session Information
Location: Ruby Red	<p><i>Closing Plenary Session</i></p> <p><i>Centering the Experiences & Identities of Students in STEM Classrooms: What Does the Research Tell Us?</i></p> <p>Amanda Morales</p>

Concurrent Sessions: 4:30PM – 5PM	
Location/Format	Session Information
Location: Ruby Red	<p>Closing Remarks</p> <p>Angela Chapman</p>

JSTEM Scholar Session	
Monday, February 26, 2024	
<p><i>Creating an alternative to everyday plastics using potato starch biofilm</i></p> <p>Presenters: Iveth Guerrero, Anais Martinez, Andres Burciaga</p>	
<p><i>Effects of BPA on Human Brain Cells</i></p> <p>Presenters: Sophia Briseño, Samantha Aguirre, Lauren Chapa, Adisynne Villarreal</p>	
<p><i>How Brain Cells React to PET Microplastics</i></p> <p>Presenters: Juliana Leandro, Elisa Martinez, Sophia Gonzalez</p>	
<p><i>Investigating the Effects of Potato and Avocado Starch on Muscle Cells</i></p> <p>Presenters: Sophia Morrison, Cathryn Guerrero, Hennessy Rodriguez, Mia Alor, Jezalee Delgadillo</p>	
<p><i>The Effect of Microplastics on Yeast Cells</i></p> <p>Presenters: Norma Ortiz, Emily Chagoya, Amy Dominguez</p>	
<p><i>The Effects of Plastic on Plant Cells</i></p> <p>Presenters: Bryan Trevino, Samuel Bennett, Sam Medellin, Adan Nunez, Adrian Palacios</p>	



Poster Session - Regular

Monday, February 26, 2024

Advanced composite coatings developed for multidisciplinary applications

Jarrood Keith Perez, Nicholas Perez, Javier A. Ortega

An investigation into Laser Surface Texturing (LST) for improved tribological performance of prosthetic implants

Nicholas Perez, Jarrod Perez, Javier Ortega

Analysis and Detection of Autism Spectrum Disorder Using Machine Learning Techniques

Priscilla Kissi-Appiah

Biomedical sciences and engineering

Evelyn Saldana

Environment-friendly and renewable PLA composites developed for diverse multidisciplinary applications

Juan Reyna, Samantha Ocaña, Israel Delgado, Jeremias Salaya, Javier Ortega

Graduate Research: A Collaborative Project to Study 6-10th Grade Student's Mathematical Proficiency in Problem-Solving.

Jair J. Aguilar, Larmel Madrilejos, Karla Lopez, Victor Gutierrez

High school students' learning of reliability and validity of biological research using the concepts of evidence

Magaly Romero Villarreal

Resignificación de los insectos a través de entomología cultural

Berenice Garrido Arteaga, Gonzalo Peñaloza Jiménez, José Rafael Guzmán Sepúlveda

STEM and Sustainability

Angela Garcia

STEMMING VA STEM for THEM, STEM with THEM, THEM in STEM - A Grant Project

Parama Chaudhuri

TENGs in Transportation Industry

Shadman Sakib, Octavio Jupp

The Role of Oral Microbiota in Periodontitis and Alzheimer's Disease

Taha Al Hassan, Noah Al Hassan, Seratna Guadarrama-Beltran, Juan Lopez Alavrez, María A. Quiñones-Peña, Model Zerfu

What do you Mean? A Systematic Review of the Relationship Between Understanding Statistical Vocabulary and Statistical Literacy.

Nipah Onkananuwonk, Jamaal Young

"Why Are Some Reactions Slower at Higher Temperatures?" Students Studying Steglich Esterification Stumble Across Such a Reaction

Noemi Montel

Implementation and Assessment of a Course Based Undergraduate Research Experience (CUREs) in General Microbiology

Michael Cross, Sheritta Fagbodun

CREST Sponsored Poster Session

Tuesday, February 27, 2024

Advancements in Aerial Research Platforms: Design and Application of Sensor-Embedded 3D Printed Drones

Alan Urteaga, Constantine Tarawneh

Affective Autonomous Mobility through Human Computer Interaction: Facial Emotion Recognition and Autonomous Mobility Environment in CARLA Simulator

Leonel Ramirez, Teresa Garza, Fatemeh Nazari

Autonomous Train Maintenance: Developing Vibration-Based Algorithm for Railroad Bearing Service Life

Diego Cantu, Mohamadhossein Noruzoliaee, Fatemeh Nazari, Constantine Tarawneh

Experimental and computational probes on Er-doped LiTaO₃ as Near-Infrared Detectors

Andrea Pelayo Carvajal, Nicholas Dimakis, Mkhitar Hobosyan, Constantine Tarawneh

Exploring Reinforcement Learning with Proximal Policy Optimization for Enhanced Autonomous Vehicles

Jesus Hernandez, Jesus Ramos, Mohamadhossein Noruzoliaee

Formation Control of Multiple UAVs with Uncertainty

Elian Cantu, Wenjie Dong

Interactive Autonomous Vehicles

Timothy Lyons, Oziel Saucedo, Mohamadhossein Noruzoliaee

Natural Language Processing for Model-based Systems

Joshua Ontiveros, Satya Aditya Akundi, Constantine Tarawneh

Personalized Driving Using Inverse Reinforcement Learning

Rodrigo Gonzalez, Constantine Tarawneh, Qi Lu, Tohid Sardarmehni

Willingness-to-Pay for Flying Taxi in the City of Chicago

Fatemeh Nazari, Mohamadhossein Noruzoliaee, Teresa Garza, Leonel Ramirez

Next Generation Wireless Sensor Technologies for Railroad Rolling Stock

Dario Hinojosa, Constantine Tarawneh, Heinrich Foltz

Human-Centric Smart Cities: A Digital Twin-Oriented Design of Interactive Autonomous Vehicles

Oscar De Leon Vazquez, Leonel Ramirez, Fatemeh Nazari, Mohamadhossein Noruzoliaee

Sensor Development for Infrastructure Health Monitoring

Alejandro Barrera, Constantine Tarawneh, Farid Ahmed

Ridesharing Spatiotemporal Demand Prediction: A Dynamic Graph-based Deep Learning Approach

Mark Hernandez, Mohamadhossein Noruzoliaee, Fatemeh Nazari

Nover Equimolar Medium Entropy Alloy (Ti-Mo-W) Via Selective Laser Melting for High Temperature Applications

Lindsey Salazar, Jeongwoo Lee, Constantine Tarawneh, Jianzhi Li

Control Strategies for Cooperative Multi-Robot Tasks Using Multi-Agent Reinforcement Learning

Daniel Masamba, Erik Enriquez, Dongchul Kim, Qi Lu

Detection and Mitigation of Misleading Pheromone Trails in Foraging Robot Swarms

Ryan Luna, Qi Lu

Reinforcement Learning for Drone Navigation

Javier Becerril, Qi Lu

Conference Room Location



List of Presenters

Adams, Jennifer D.
Adams, Russell
Aditya Akundi, Satya
Adrianna Gómez Galindo, Alma
Aguilar, Jair
Ahmadi, Sara
Al Hassan, Noah
Al Hassan, Taha
Alberto Zarate Siordia, Luis
Almanza, Mario
Alvarado, Juan G.
Amaro, Isabel
Andrea González Rodríguez, Karla
Andres Arboleda Pidrahita, Yeison
Armianu, Irina
Asare, Martha
Bárbara Alatorre Rodríguez, Ana
Barrera, Alejandro
Becerril, Javier
Benitez, Laura
Blackbird, Michele
Brown, Angela
Candelaria Samaniego Zubiata, Vianey
Cantu, Diego
Cantu, Elian
Carlos Bocanegra, Luis
Castaño Torres, Yesenia
Cázares Balderas, Milagros
Cecilia Bersosa Hernández, Ada
Chapman, Angela
Chaudhuri, Parama
Chavez, Yocelin
Cross, Michael
Davila, Ivan
del Rocio Hernández Hernández, María
DeLeon, Oscar
Delgado, Israel
Di Loreto, Romeo
Di Loreto, Romeo
Diaz, Sylvia
Dong, Wenjie
Eduviges Hinojosa Rizo, Silvia
Elihu Calvillo-Arriola, Atzin
Elliot, Esi
Esparza, Johanna Lynn
Espinosa-Dulanto, Miryam
Estela Galindo Barraza, Blanca
Fagbodun, Sheritta
Fernández, Luis, M.
Flores Jr., Oscar
Flores, Gerardo
Flores, Judith
Ganesan, Uma
García Franco, Alejandra
Garcia, Angela
Garcia, Lluvia
Garcia, Patricia
Garcia, Vanessa
Garrido Arteaga, Berenice
Garrido, Leslie Y
Gilchrist, Ashley
Gilson, Gregory
Gkioulekas, Eleftherios
Goli, Farzad
Gomez, Yailen
Gonzalez, Angelina
Gonzalez, Anna
Gonzalez, Rodrigo
Groves, Pamela
Guadarrama-Beltran, Seratna
Guerra Ramos, María Teresa
Gutierrez, Jose
Gutierrez, Victor
Guzmán Lezama, Verenice
Guzman, Belinda
Hallas, Kristen
Helen Abioye, Omobolade
Hernandez, Jesus
Hunter Murphy, Brenda
Janeth Morales González, Reina
Jin, Hui
Jupp, Octavio
Kavandi, Robab
Keith Perez, Jarrod
Keniry, Megan
Kissi-Appiah, Priscilla
Koirala, Kamal Prasad
Lewis, Karin Ann
Lizette Ramos de Robles, Silvia
Lopez-Alvarenga, Juan
Lopez, Karla
Lu, Ming-Tsan
Lu, Qi
Luna, Ryan

Lyons, Timothy
Macossay-Torres, Javier
Madrilejos, Larmel
Mallwitz, Beck
Manzana, Kristopher
Mar, Arnulfo
Margarita Salcedo Magaña, Rosa
María González Ramírez, Dulce
Marlen Galvis Solano, Luissa
Martinez, Dulce
Masamba, Daniel
Miller, Jennifer
Milne, Catherine
Montiel, Noemi
Morales, Helia
Muhammad, E. Anthony
Nadeau, Nancy
Nazari, Fatemeh
Noruzoliaee, Mohamadhossein
Nouri, Noushin
Ocaña, Samantha
Odom, Sheena
Onkananuwonk, Nipah
Ortega, Javier
Palacios, Gina
Palacios, Gina Gwen
Payton, Mary
Pelayo Carvajal, Andrea
Peñaloza Jiménez, Gonzalo
Perez, Melissa
Perez, Nicholas
Pestana, Afife
Qubbaj, Ala

Quetschke, Volker
Quiñones-Peña, María A.
Rafael Guzmán Sepúlveda, José
Ramirez-Biondolillo, Patricia
Ramirez, Leonel
Rampersad-Ammons, Joanne
Ratel Valenzuela, Lydia
Reyna, Juan
Robles, Sylvia A.
Rodriguez, Eric X.
Rodriguez, Maria
Roehl, Sheryl
Romero Villarreal, Magaly
Saber, Maryam
Sakib, Shadman
Salaya, Jeremias
Salinas, Griselda
Salinas, Juan
Santana, Virginia
Sauceda, Oziel
Schall, Janine, M.
Shapton, Oliver
Solis, Silvia
Tarawneh, Constantine
Tea, Jing Jie
Upadhyay, Bhaskar
Urteaga, Alan
Vargas Hernandez, Noe
Wang, Limin
Wheatcraft, Jeff
Williams, Zulema
Young, Jamaal
Zerfu, Model

Schedule-at-a-Glance by Session Title Day 1

7th Annual STEM Education Conference Day 1							
See below for conference session dates, times, and locations (subject to change).							
2/26/2024							
Date	Time/Room	Key Lime	Mandarin	Tangerine	Pomelo	Lemon	Ruby Red
	9:00 - 10:15			Opening Session			
	10:15 - 10:45	Key Factors for Effective STEM Technology Integration: A Meta-Synthesis of the Literature		Construcción del razonamiento proporcional a través de secuencias didácticas en secundaria: Un estudio de caso	Computational Justice Programs: Developing Agentic Computing Identities Among Latinas	CSSE Special Forum	JSTEM Scholars Poster Presentations
	10:45 - 11:15	Promoting Preservice Teachers' Understanding of the Nature of Science Using Phenomenon-Based Learning	Sowing Seeds of Diversity: Teaching with Picturebook Biographies Featuring Latinx People in STEM Careers		The Detrimental Effects of a Competitive Classroom Environment		
	11:15 - 11:45	Exploring the Embedded Patterns in Latinx's STEM Identity: Clustered Characteristics Approach	Escucha, Mi Ciencia Cuenta: Leveraging Cultural Ways of Knowing in Science Education	Exploring the Intersection of Biology, Culture, and Health through a Cultural BioHealth Synergy Curriculum	Removing the Abstract and Uprooting Contextual Factors that Improve Students' Lives through STEM Activities and Student Organizations	Decoding the Puzzle: Exploring the Tower of Hanoi ^{II}	
	11:45 - 12:15		Disambiguating and Relating STEM	Un modelo multiferencial para el abordaje complejo del consumo de alcohol			
	12:15 - 1:30			Lunch			
	1:30 - 2:00	Back to the old school: Classroom games that get students off their glowing rectangles!	Supporting Latine Students' Development of Creativity and Spatial Thinking in STEM	Implementation and Assessment of a Course Based Undergraduate Research Experience (CURES) in General Microbiology	Empowering Women in STEM: Cultivating Potential, Confronting Obstacles at St. Catherine University	It's never too early for STEM: Developing, Implementing and Communicating STEM learning in early childhood education Special Session	Poster Presentations - Regular Session
	2:00 - 2:30		JSTEM: A Model of Informal Learning that Promotes Authentic STEM Inquiry and Metacognitive Transfer to Formal Settings	Attracting Rural Latinx/Latino/Hispanic STEM Preservice Teachers through the Noyce en la Frontera Program			
	2:45 - 3:15	Teaching at the postsecondary level French Language and Culture with AI generators	The Effects of Fostering Body Awareness in Teachers: Possibilities for Teacher Education	STEAM Approach as the Means of Transformative Learning of School System in Nepal	Sense of Belonging, Ownership, and Pride Among Families in Education: A Grassroot Family-Centered Model for Deeper Community Engagement	Technology Tools to Help Fight Misinformation and Disinformation in the STEM Classroom	
	3:15 - 3:45	Sensor for Infrastructure Health Monitoring: Experimental Development	Social-Emotional Learning Policy & STEM Education: Examining Equity & Investigating Implementation	"Gajatra": Remembering the deceased and making a space for social and political commentary in a STEAM teacher workshop			
	4:00 - 4:30	Collaborative Panel Discussions on Culturally and Linguistically Sustaining Indigenous Science Teaching Happening in Nebraska	STEMpowerment: Boosting Content Knowledge and Self-Efficacy in Pre-Service Teachers through Authentic PBL	The Impact of Translanguaging on Educational Experiences of Secondary Bilingual Students in Science Classrooms	La Frontera Mobile Makerspace Program: Serving Isolated Southwest Populations in the Middle Rio Grande Valley	Cybersecurity Basics for grades K-8	
	4:30 - 5:00		Uprooting-Cultural and Linguistic Immersion Experience to Enhance Culturally Responsive Pedagogies: An Ethnographic Study in Mexico				
	5:30 - 8:00			Social			

Schedule-at-a-glance by Presenters Day 1

7th Annual STEM Education Conference Day 1

See below for conference session dates, times, and locations (subject to change).

Date	2/26/2024					
Time/Room	Key Lime	Mandarin	Tangerine	Pomelo	Lemon	Ruby Red
9:00 - 10:15	Opening Session					
10:15 - 10:45	Thalia Juarez, Lydia Rattel Valenzuela, Dulce Martinez		Luis Alberto Zarate Siordia	Patricia Garcia, Melissa Perez, Beck Mallwitz, Oliver Shapton	Catherine Milne	JSTEM Session
10:45 - 11:15	Noushin Nouri, Maryam Saberi, Robab Kavandi	Janine M. Schall		Angelina Gonzalez		
11:15 - 11:45	Kristen Hallas, Miriam Ortiz, Maria Rodriguez, Angela Chapman	Patricia Ramirez-Biondallo	Miriam Ortiz	Belinda Guzman, Oscar Flores, Jr., Gerardo Flores, Alfie Pestana	Anna Gonzalez	
11:45 - 12:15		Gregory Gilson	Luisa Marien Galvis Solano, Alma Adrianna Gómez Galindo			
12:15 - 1:30	Lunch					
1:30 - 2:00	Pamela Groves	Lisa Martin	Sheritta Fagbodun, Michael Cross	Bindhu Alappat, Bethlehem Gronneberg	Mary Payton	Regular Poster Present
2:00 - 2:30		Mario Almanza, Uma Ganesan, Lluvia Garcia, Isabel Amaro, Yailen Gomez, Angela Chapman	Jennifer Miller, Angela Brown			
2:45 - 3:15	Irina Arrianu	Sara Ahmadi	Kamal Prasad Koirala	Juan Salinas, Jose Gutierrez, Yocelin Chavez, Virginia Santana	Juan G. Alvarado	
3:15 - 3:45	Alejandro Barrera	Edward Muhammed, Ashley Gilchrist, Sheena Odom	Bhaskar Upadhyay			
4:00 - 4:30	Uma Ganesan	Johanna Esparza, Miriam Ortiz	Luis Carlos Bocanegra	Jennifer Miller	Sheryl Roehl	
4:30 - 5:00		Karin Ann Lewis				
5:30 - 8:00	Social					

Schedule-at-a-Glance by Session Title Day 2

7th Annual STEM Education Conference Day 2						
See below for conference session dates, times, and locations (subject to change).						
Date	2/27/2024					
Time	Key Lime	Mandarin	Tangerine	Pomelo	Lemon	Ruby Red
9:30 - 10:00	Exploring the role of culture/nature for a more joyful STEM education	Conversations with Dr. James Moore - middle and high school students Conversations with Dr. James Moore - undergraduate and graduate students	Pensar el enfoque STEM desde los lugares habitados por los estudiantes** Pensamiento Aleatorio en Futuros Profesores. Niveles de Aleatorización	Action Research for Digital Financial Innovations Breaking Barriers. Building Bridges. Sustainability's Impact on Inclusive Transdisciplinary Skills in STEM	Building Sustainable STEM partnerships with supportive communication	
10:30 - 10:45	Break					
10:45 - 11:15	STEMMING VS STEM for THEM. STEM with THEM. THEM in STEM - A Grant Project	Narratives of Hope: Exploring solutions to the climate crisis** Perspectivas de docentes de secundaria frente a una enseñanza con enfoque STEM en escuelas rurales.	La regulación cognitiva de los docentes para incorporar de forma reflexiva el enfoque de STEM Explorando los sinergias entre el saber tradicional y el conocimiento científico en torno al atole agrio para promover la educación científica intercultural **	Collaborative Discussions on Culture, Student Identity, and Student Funds of Knowledge in STEM Fields	The Effects of a Family-Centered Theory of Transformation of Teaching and Research Practices in Chemistry Courses	CREST MECIS Poster Presentations
11:15 - 11:45	Lunch					
1:15 - 1:45	Key Factors for Effective STEM Technology Integration: A Meta-Synthesis of the Literature	Manejo y conocimiento del café como espacio para el fortalecimiento educativo en escuelas de zonas indígenas y rurales Red de Milpas Escolares de Nuevo León, una comunidad de aprendizaje entre docentes y su impacto en el aprendizaje de los estudiantes.**	Modelización Científica en el Estudio del Sistema Respiratorio en Preescolar** Supporting Latinx Psts for Implementing Phenomenon-Based Science	Robotic Control Theory and Optimization Methods Hispanic Nursing Student's use of advance technology during the COVID-19 pandemic in South Texas	Interdisciplinary UG Research Experience for Undergraduates (REU) and Physics Projects and Arts and Science Award Project (ASAP)	
1:45 - 2:15	Development and Validation of a Mathematical Thinking in Science Learning Progression	El aborto como tema socio científico: construcción de significados de estudiantes de sexto semestre de bachillerato.** Presencia de neonicotinoides y sus metabolitos en orina de niños entre 3 y 11 años: estudio de casos en Ciudad Guzmán, Jalisco, México.**	STEM como respuesta a la interdisciplinariedad en el currículum mexicano	Promoting Active Learning via Exploring STEM Educators' Teaching Philosophy and Course Syllabi in an HSI	URGV Center for Equity in Engineering: Engage, Educate, Enrich (CEE-E3)	
2:15 - 2:45	Beyond Traditional Grading: Examining the Impact of Specifications Grading on Calculus Students' Mathematics Identity	In Search of Teacher Identity: Latino/a Preservice Teachers Engaging in Best-Practices at an HSI	Percepciones del Riesgo a la Salud por Uso de Plaguicidas en el Sector Agavero del Estado de Jalisco, México. **	Break		
3:15 - 3:30	Break					
3:30 - 4:00	Closing Plenary Session Dr. Amanda Morales					
4:00 - 4:30	Centering the Experiences & Identities of Students in STEM Classrooms: What Does the Research Tell Us?					
4:30 - 5:00	Closing Remarks (Ruby Red)					

Schedule-at-a-glance by Presenters Day 2

7th Annual STEM Education Conference Day 2						
See below for conference session dates, times, and locations (subject to change).						
2/27/2024						
Date	Key Time	Mandarin	Tangerine	Pomelo	Lemon	Ruby Red
9:30 - 10:00 AM	Catherine Milne	James Moore	Yelson Andrés Alboleda Piedrahíta, Alma Adrianna Gómez Galindo, Alejandra García Franco	Russell Adams, Esi Elliot	Jeff Wheatcraft	
10:00 - 10:30 AM		James Moore	Silvia Eduviges Hinojosa Rizo, Silvia Lizette Ramos de Robles	Sylvia A. Robles, Noe Vargas Hernandez, Joanne Rampersad-Ammons		
Break						
10:30 - 10:45 AM						
10:45 - 11:15 AM	Chaudhuri	Ada Cecilia Bersoza Hernández, Karla Andrea González Rodríguez	Milagros Cázares Balderas, Alma Adrianna Gómez Galindo	Uma Ganesan, Amanda Morales, Angela Chapman	Jose J. Gutierrez, Sylvia Diaz, Vanessa Garcia, Helia Morales	CREST MECIS Poster Presentations
11:15 - 11:45 AM		Yesenia Castaño Torres, María Teresa Guerra Ramos	Verenice Guzmán Lezama, Alejandra García Franco, Blanca Estela Gallindo Barraza			
Lunch						
11:45 AM - 1:15 PM						
1:15 - 1:45 PM	Ithalia Juarez, Lydia Rattel Valenzuela, Dulce Martinez	Atzin Elihu Calvillo-Arriola, Alma Adrianna Gómez Galindo	Dulce María González Ramirez	Eric Rodriguez	Ivan Davila, Valker Quetschke, Gina Gwen Palacios, Romeo Di Loreto	
1:45 - 2:15 PM	Hui Jin, Limin Wang	Reina Janeth Morales González, Alma Adrianna Gómez Galindo	Leslie Y. Garrido	María Diaz, Eleftherios Gkoulakas, Nancy Nadeau		
2:15 - 2:45 PM	Luis M. Fernández, Cristina Villalobos, Mayra Ortiz Galarza	Rosa Margarita Salcedo Magaña, Silvia Lizette Ramos De Robles	María del Rocío Hernández	Pierre Lu, Jing Jie Tea	Laura Benitez, Ala Gubbaj	
2:45 - 3:15 PM	Zulema Williams, Miriam Ortiz	Ana Bárbara Alatorre Rodríguez, Silvia Lizette Ramos de Robles	Vianey Candelaria Samaniego Zubiate, Silvia Lizette Ramos de Robles, Gilberto Iniguez Cavarrubias			
Break						
3:15 - 3:30 PM						
3:30 - 4:00 PM						
4:00 - 4:30 PM						
4:30 - 5:00 PM						
Closing Plenary Session Dr. Amanda Morales						
Closing Remarks (Ruby Red)						

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