

29TH ANNUAL CONFERENCE



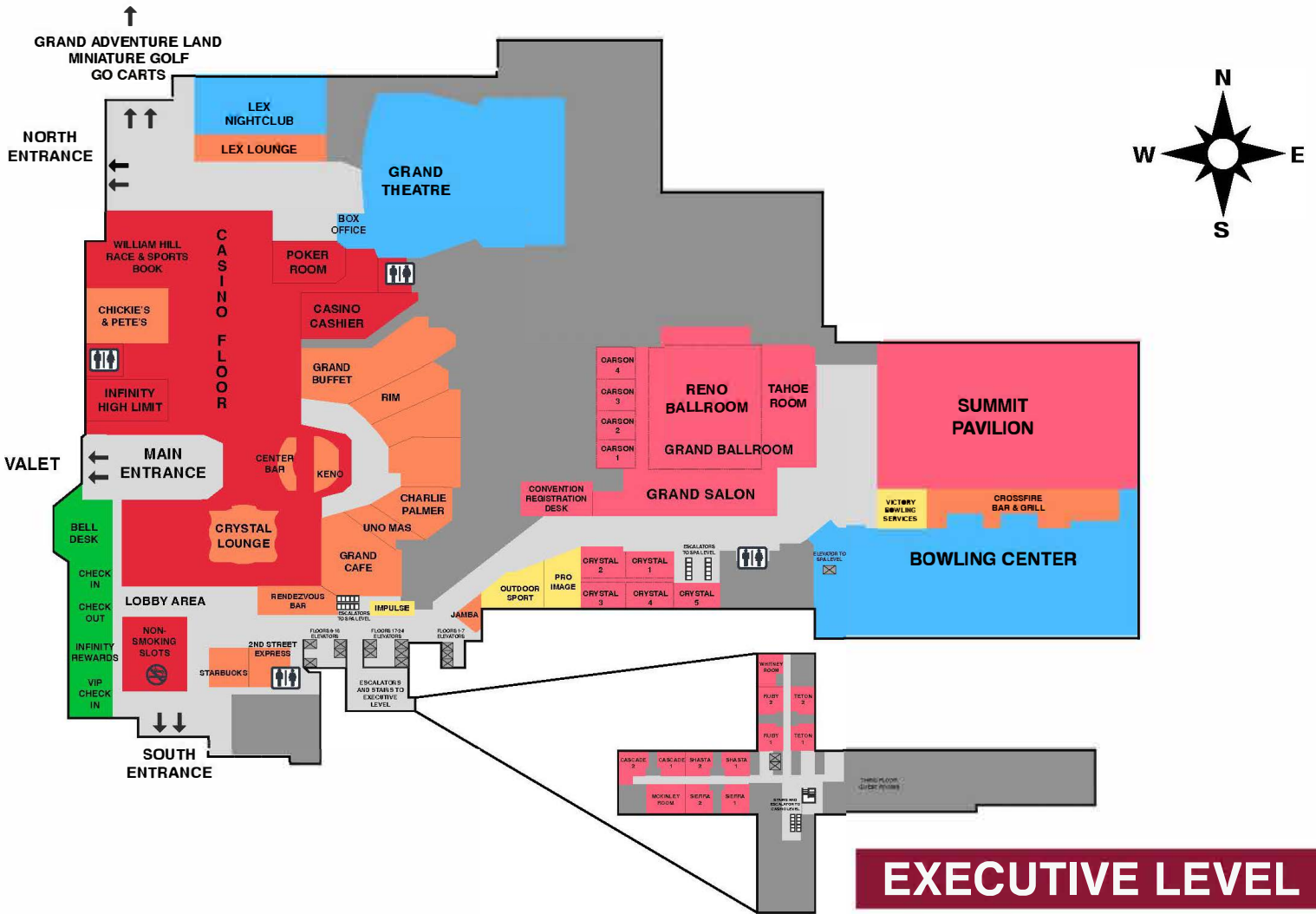
FEBRUARY 6-8, 2025

Reno







ASSOCIATION OF MATHEMATICS TEACHER EDUCATORS
GRAND SIERRA RESORT

CASINO LEVEL

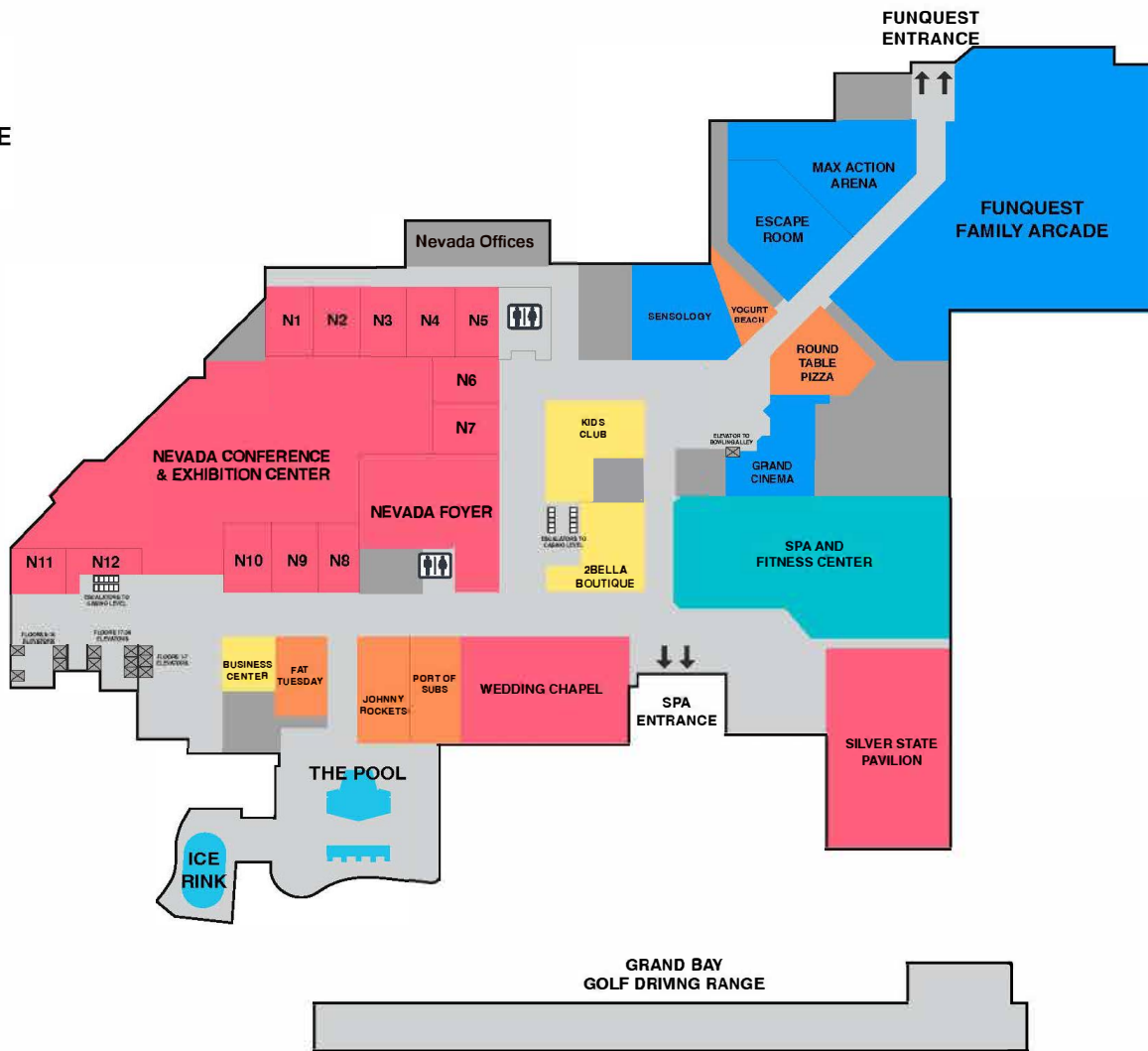
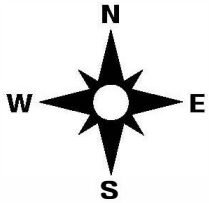


EXECUTIVE LEVEL

MAP LEGEND

 CASINO FLOOR	 RESTROOMS
 RESTAURANTS & LOUNGES	 ELEVATOR
 ENTERTAINMENT	 ENTRANCE/EXIT
 MEETING/BALLROOMS	 ESCALATOR
 HOTEL REGISTRATION	
 RETAIL	

SPA LEVEL



MAP LEGEND

	SPA/FITNESS CENTER		RESTROOMS
	RESTAURANTS & LOUNGES		ELEVATOR
	ENTERTAINMENT		ENTRANCE/EXIT
	MEETING/BALLROOMS		ESCALATOR
	POOL/ICE RINK		
	RETAIL		

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- Thursday Afternoon Sessions
 - 1:15 pm - 2:00 pm (included extended sessions)
 - 2:15 pm - 3:00 pm
 - 3:00 pm - 4:15 pm Poster Sessions
 - 4:30 pm – 5:30 pm Judith Jacobs Lecture (White)
- Friday Morning Sessions
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 - 9:30 am - 10:30 am
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- Friday Afternoon Sessions
 - 1:30 pm - 2:30 pm (includes extended sessions)
 - 2:45 pm - 3:45 pm
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Speaker Index & Proposal Reviewers

AMTE Information (links outside this document)

- [AMTE 2025 Leadership](#)
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WELCOME

Dear AMTE Friends,

Welcome to the Twenty-ninth Annual Conference of the Association of Mathematics Teacher Educators (AMTE) in Reno, NV, at the Grand Sierra Resort. The AMTE conference is a cornerstone for fostering collaboration, growth, and the exchange of ideas among mathematics teacher educators and educational partners. Our goal is to create an inclusive and enriching environment that maximizes opportunities for sharing, learning, and connecting while prioritizing the safety and well-being of our community. This year, we've added a virtual option to make the conference accessible to those unable to attend in person, ensuring broader participation in the valuable sessions and discussions. The AMTE conference is more than just an event—it's a dynamic space where educators come together to exchange ideas, collaborate on solutions, and inspire one another to advance mathematics education. Below are some highlights and things you can expect in the coming days:

INVITED SPEAKERS

Our opening keynote address *Moving Beyond Transactional Relationships in Educational Spaces* takes place in the Thursday General Session at 8:15 am in the Tahoe/Reno room. Panel Members include:

- **Beth Herbel-Eisenmann**, *Michigan State University*
- **Nicol Howard**, *University of Redlands*
- **Lateefah Id-Deen**, *Kennesaw State University*
- **Carlos Lopez Leiva**, *University of New Mexico*
- **Farshid Safi**, *University of Central Florida (Moderator)*

Our advocacy lunch address *Disability Justice in Mathematics Education: Perspectives, Frameworks, and Implications for Practice* takes place Thursday at 11:45 am in the Summit Pavilion. Panel Members include:

- **Rachel Lambert**, *University of California Santa Barbara*
- **Katherine Lewis**, *University of Washington*
- **Daniel Reinholz**, *San Diego State University*
- **Lisette Torres-Gerald**, *TERC*
- **Honora Wall**, *The Dyscalculia Training and Research Institute*
- **Cathery Yeh**, *University of Texas at Austin*

Dorothy Y. White will give the **Judith E. Jacobs Lecture** with a talk titled *Navigating Oz: My Journey with Three Essential Companions* on Thursday afternoon at 4:30 pm in the Tahoe/Reno room.

Robert Berry will give the **Judith E. Jacobs Lecture** with a talk titled *Drawing Lessons From History as We Navigate the Present: Learning from Mathematics Educators Who Navigated the U.S. Civil Rights Movement* on Friday afternoon at 4:30 pm in Tahoe/Reno room.

Julia Aguirre, recipient of the **Karen D. King Excellence in Advocacy Award**, will present a talk titled *No More Long Game: Replacing Academic Apartheid with Math Joy and Justice Now!* on Thursday at 10:00 am in the Tahoe/Reno room.

PROGRAM INFORMATION

There are 95 Individual Sessions, 31 Discussion Sessions, 60 Reports, 6 Extended Sessions, 9 Symposium Sessions, and 27 Poster Presentations on the program. Included in this are 39 hybrid sessions. There are 482 speakers on this year's program. There were 398 proposals submitted for review. The program committee accepted 64% of the proposals for the program including presentations, discussions and extended sessions, reports, and posters. The program also includes 3 invited presentations, 5 award-winner sessions, 7 AMTE committee sessions, and 3 sessions presented by AMTE Sponsors, and one information session presented by NSF program directors.

OPENING MINDS TO ADVANCE EQUITY

Equity and inclusion remain at the heart of AMTE's mission. Through sessions like the Opening Keynote, Advocacy Lunch, and many others, our program offers meaningful opportunities to explore critical issues of equity and social justice. The conference serves as a powerful space to connect, build community, and foster collaboration. Let's make the most of our time together in Reno by showing up, standing out, and exemplifying inclusivity—empowering everyone to thrive.

Enrique Galindo, *AMTE President*

Kim Gill, *AMTE Executive Director*

Cynthia Taylor, *AMTE AVP for Conferences*

Nirmala Naresh, *2025 AMTE AVP for Annual Conference Program*

CONFERENCE SCHEDULE

2025 ANNUAL AMTE CONFERENCE FEBRUARY 5-8, 2025

Wednesday, February 5, 2025

- 4:30 pm - 7:30 pm AMTE Registration Desk Open
- 5:30 pm - 7:00 pm **STaR Reception**
- 8:00 pm - 9:00 pm **Reception For BIPOC Scholars** ([Menu](#))

Thursday, February 6, 2025

- 7:00 am - 4:30 pm AMTE Registration Desk Open
- 7:00 am - 8:15 am Breakfast ([Menu](#))
- 8:15 am - 9:45 am **Opening Session**
- 10:00 am - 4:30 pm Exhibits Open
- 10:00 am - 10:45 am Concurrent Sessions
- 11:00 am - 11:45 am Concurrent Sessions
- 11:45 am - 1:15 pm **Advocacy Lunch** ([Menu](#))
- 1:15 pm - 2:00 pm Concurrent Sessions
- 2:15 pm - 3:00 pm Concurrent Sessions
- 3:00 pm - 4:15 pm Poster Session and Snacks ([Menu](#))
- 4:30 pm - 5:30 pm **Judith E. Jacobs Lecture (White)**
- 6:00 pm - 7:30 pm **Reception For Graduate Students & Early Career Faculty** ([Menu](#))

Friday, February 7, 2025

- 7:00 am - 8:15 am **Breakfast and Affiliate Meetings** ([Menu](#))
- 7:00 am - 4:30 pm AMTE Registration Desk Open
- 8:00 am - 4:30 pm Exhibits Open
- 8:15 am - 9:15 am Concurrent Sessions
- 9:30 am - 10:30 am Concurrent Sessions
- 10:45 am - 11:45 am Concurrent Sessions
- 11:45 am - 1:15 pm **Lunch and Business Meeting** ([Menu](#))
- 1:30 pm - 2:30 pm Concurrent Sessions
- 2:45 pm - 3:45 pm Concurrent Sessions
- 3:45 pm - 4:15 pm Afternoon Break & Snacks ([Menu](#))
- 4:30 pm - 5:30 pm **Judith E. Jacobs Lecture (Berry)**
- 6:00 pm - 7:00 pm **Reception For LGBTQIA+ Scholars** ([Menu](#))

Saturday, February 8, 2025

- 7:00 am - 8:15 am Breakfast ([Menu](#))
- 7:00 am - 10:30 am AMTE Registration Desk Open
- 8:15 am - 9:15 am Concurrent Sessions
- 9:30 am - 10:15 am Concurrent Sessions
- 10:30 am - 11:15 am Concurrent Sessions
- 11:30 am - 12:15 pm Concurrent Sessions
- 12:15 pm - 1:30 pm **Networking Lunch** ([Menu](#))

CONFERENCE INFORMATION

FINDING THE CONFERENCE AREA

Conference session rooms are located on the Casino Level, and Spa Level of the Grand Sierra Resort. For your convenience, maps are shared in the conference app, [in this program](#), and are also available on the Grand Sierra webpage at <https://www.grandsierraresort.com/>. For other questions about hotel facilities, please contact the volunteers at the AMTE Registration Desk, the members of the [Conferences Committee](#), or hotel staff.

CONFERENCE REGISTRATION DESK

Please stop by the AMTE Registration Desk (Convention Registration Desk), located on the Casino Level near the Grand Salon and Ballroom (Tahoe) to obtain your conference materials, including your nametag. Pre-printed programs are not available for this conference.

AMTE REGISTRATION DESK HOURS

WEDNESDAY	4:30 PM - 7:30 PM
THURSDAY	7:00 AM – 4:30 PM
FRIDAY	7:00 AM - 4:30 PM
SATURDAY	7:00 AM - 10:30 AM

CONFERENCE WEBSITE/APP INFORMATION

Use the free conference app to:

- View the conference program
- Organize your schedule
- Find more information about speakers and attendees
- Join informal Meet-Ups
- Share documents, participate in audience surveys, polls, and Q & A sessions
- Engage in discussions with other attendees during a session
- Engage attendees and colleagues around the world through social media

To access the app, please do the following:

1. Download Guidebook from the Apple App Store or Google Play.
2. Click **Find Guides** at the bottom of the main page of the app.
3. Select “**Have a passphrase?**”, enter **the passphrase amte2025**, and then select Continue.
4. Open the Conference Guide.

If you are unable to access the conference Guidebook, please contact amte-support@amte.net for assistance. You can also access the web version of Guidebook at <https://builder.guidebook.com/g/amte2025/>.

CANCELLATIONS & PROGRAM CHANGES

For updated lists of cancellations and other program changes, visit <https://amte.net/content/program-updates-2025-annual-amte-conference> or the conference app.

SPONSORS & EXHIBITS

We appreciate the generous support of our sponsors and exhibitors. Please take an opportunity to thank them for their contributions to AMTE by visiting with them in the exhibit area located in the Grand Salon on the Casino Level.

THURSDAY	10:00 AM – 4:30 PM
FRIDAY	8:00 AM – 4:30 PM

WIRELESS INTERNET ACCESS

Conference attendees who are staying at the Grand Sierra Resort receive complimentary internet access in individual guestrooms for the duration of the conference. Directions on how to access wireless and wired internet service can be found in each guestroom. Complimentary wireless internet access is provided in the conference/meeting area of the hotel for conference attendees and for AMTE usage throughout the conference. Use the following information to access the conference network. **Login: GSR-wifi** (Password not required)

HOTEL PARKING & SHUTTLE INFORMATION

The [Grand Sierra Resort Airport Service](#) operates daily from 4:30am - 12:15am. The shuttle leaves the resort at the top (:00) and bottom (:30) of the hour and leaves the Reno-Tahoe airport on the quarter after (:15) and quarter 'til (:45). Free parking is available at the Golf Driving Range near the Spa Level entrance of the resort. You may enter at the Spa Entrance and take the escalators up one level to the registration desk.

CONFERENCE PHOTOGRAPHS

Photographs are being taken during the conference by AMTE member volunteers for use on the AMTE website, newsletters, and brochures. These photographs will not be sold or distributed in any way beyond the promotion of AMTE and its conference. If you do not wish your likeness to be used in these ways, please contact AMTE Conference Director, Tonja Britt, at the conference or via email at conferencedirector@amte.net.

PERSONAL PROPERTY

Please note that the hotel is not responsible for the safekeeping of equipment such as laptop computers or personal LCD projectors, supplies, written materials, or any other items that are unattended or left in meeting rooms by conference attendees.

LOST AND FOUND

Please drop off any unclaimed found items at the AMTE Registration Desk or at the main desk in the hotel lobby.

COMMITTEE MEETINGS

AMTE Committees and Community Circles will meet during the conference according to the schedule provided by committee leaders. These meetings will take place in Nevada 8 and Nevada 9 on the Spa Level, and Crystal 1 on the Casino Level.

AFFILIATE MEETINGS

AMTE Affiliates will meet during breakfast on Friday Morning in the Summit Pavilion located on the Casino Level. This is a great time to meet each other face-to-face and discuss a game plan for the upcoming year.

COLLABORATION SPACE

A space for collaboration and informal meetings among conference attendees will be available on the Casino Level in the Reno Ballroom and Grand Salon, and on the Spa Level in the Nevada Foyer. Please take advantage of this area to share your conference experiences and engage in productive discussions with other conference attendees.

CONFERENCE MEALS

Breakfast and lunch will be provided for conference attendees for all conference days, Thursday, Friday, and Saturday. Please note that Thursday is a lighter breakfast. Afternoon snacks will be available Thursday and Friday, and light refreshments will be provided for AMTE-sponsored receptions. All meals have been carefully planned to accommodate dietary restrictions. A detailed menu with dietary information is available for attendees using the [MENU LINK](#) provided.

ADDITIONAL SPACES FOR ATTENDEES

The following spaces are available for use by conference attendees. These rooms are located on the Spa Level, directly across the hallway from Nevada 4-5. Visit the registration table to request key card access to each space.

- **Parents Room: Nevada Office 1**
- **Prayer & Meditation Room: Nevada Office 2**

SOCIAL MEDIA

LIKE AMTE ON FACEBOOK



facebook.com/AMTE.net

FOLLOW AMTE ON X



[@AMTEnews](https://twitter.com/AMTEnews)

Use **#AMTE2025** TO JOIN PUBLIC DISCUSSION AROUND THE CONFERENCE.

2025 ANNUAL AMTE CONFERENCE COMMITTEE

CONFERENCES COMMITTEE

If you have questions, comments, or concerns throughout the conference, please notify one of these members of the Conferences Committee. They will be happy to assist you.

Cynthia Taylor (AVP for Conferences), Millersville University, cynthia.taylor@millersville.edu
Julie James, (Past AVP), The University of Mississippi, jjames1@olemiss.edu
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Tierra Fender, University of North Carolina at Charlotte, mstierrafender@gmail.com
Angela Barlow (Board Member-at-Large), University of South Alabama, abarlow@southalabama.edu
Rick Hudson (VP for Professional Learning), University of Southern Indiana

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Diana Moss (co-AVP), University of Nevada Reno, dmoss@unr.edu
Glenn Waddell (co-AVP), University of Nevada Reno, gwaddell@unr.edu
Jesse Ross, University of Nevada Reno, jessier@unr.edu
Claudia Bertolone-Smith, California State University Chino, cmbertolone-smith@csuchico.edu
Heather Crawford-Ferre, Nevada Department of Education, hcrawfordferre@doe.nv.gov

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AMTE COMMITTEE SESSIONS

The work of AMTE is made possible by the efforts of its members through leadership roles, task forces, and committees. Please support the work of our committees by participating in conference sessions led by AMTE Committees. Information about those sessions are listed below and are designated throughout the program.

AFFILIATE CONNECTIONS COMMITTEE

Session 43, Thursday, February 6, 1:15 – 2:45 PM, Crystal 5
Spotlight on Research to Action, Supporting All Affiliates

ELEMENTARY MATHEMATICS SPECIALIST STANDARDS TASK FORCE

Session 77, Friday, February 7, 9:30 – 10:30 AM, Nevada 1
AMTE's new Elementary Mathematics Specialist Guidelines: Exploration and Dialogue around Advocacy and Implementation

EQUITY COMMITTEE

Session 82, Friday, February 7, 9:30 – 10:30 AM, Nevada 6
Moving Forward: Working to Humanize Spaces within AMTE

GET THE FACTS OUT TASK FORCE

Session 107, Friday, February 7, 1:30 – 2:30 PM, Carson 3
Get the Facts Out: Spice Up and Personalize Your Math Teacher Recruitment Materials

PROFESSIONAL DEVELOPMENT COMMITTEE

Session 138, Saturday, February 8, 8:15 – 9:45 AM, Carson 3
What's Next? Supporting Mathematics Teacher Educators in Taking their Next Step

PUBLICATIONS DIVISION

Session 34, Thursday, February 6, 1:15 – 2:45 PM, Nevada 2
Considering AMTE's Publications? Learn about the Different Opportunities and Chat with Editors

TECHNOLOGY COMMITTEE

Session 16, Thursday, February 6, 10:00 – 11:30 AM, Crystal 5
Ethical Use of Artificial Intelligence for Teaching, Research, and Service: Where's the Line?

2025 AMTE AWARDS

The AMTE Board of Directors has established awards to recognize outstanding work in mathematics teacher education. Look for the call for nominations later this spring. For more information about AMTE awards or to nominate a colleague, visit our website at www.amte.net.

JUDITH JACOBS LECTURE

Robert Q. Berry, University of Arizona

Session 134, Friday, February 7, 4:30 - 5:30 PM, Tahoe (Hybrid)

Drawing Lesson From History as We Navigatet the Present: Learning from Mathematics Teacher Educators Who Navigated the U.S. Civil Rights Movement

2024 JUDITH JACOBS LECTURE SESSION

Dorothy Y. White, University of Georgia

Session 56, Thursday, February 6, 4:30 - 5:30 PM, Tahoe (Hybrid)

Navigating Oz: My Journey with Three Essential Companions

KAREN D. KING EXCELLENCE IN ADVOCACY AWARD

Julia Aguirre, University of Washington

Session 1, Thursday, February 6, 10:00 - 11:30 AM, Tahoe (Hybrid)

No More Long Game: Replacing Academic Apartheid with Math Joy and Justice Now!

EARLY CAREER AWARD

Courtney Baker, George Mason University

2024 EARLY CAREER AWARD WINNER SESSION

Hyunyi Jung, University of Florida, Session 104, Friday, February 7, 1:30 - 2:30 PM, Tahoe (Hybrid), *Mathematical Modeling as Humanizing Practices in Formal and Informal Learning Environments*

The 2025 Early Career Award Recipient has been asked to present at the 2026 AMTE Conference.

ELEMENTARY MATHEMATICS SPECIALISTS SCHOLARSHIPS

[Kadysha Wood](#)
[Nikki Lyons](#)
[Natasha Inafuku](#)

Sponsored by The Math Learning Center



SUSAN GAY GRADUATE STUDENT CONFERENCE TRAVEL SCHOLARSHIP

[Sheida Moghtader Eslami](#), University of Florida

[Christina Kimmerling](#), UC Irvine

[Doris Fulwider](#), Purdue University

[Ishrat Ahmed](#), Columbia University

AMTE DISSERTATION AWARD

Sandra Zuniga Ruiz, San José State University

Dissertation Title: *Towards a Critical-Mathematical Consciousness: Understanding the Construction of a Counterspace for Prospective Maestras Mexican*

HONORARY MENTION FOR 2025 DISSERTATION AWARD

Merve Nur Kursav, Dartmouth University

Dissertation Title: *Teachers' Beliefs, Perceptions, Experiences, and Strategies in Teaching and Engaging MLs in Mathematics Classrooms*

2024 DISSERTATION AWARD WINNER SESSIONS

[Nina G. Bailey](#), Montclair State University,

Session 73, Friday, February 7, 9:30 - 10:30 AM, Tahoe (Hybrid)

[Siddhi Soni](#), Central Connecticut State University,

Session 88, Friday, February 7, 10:45 - 11:45 AM, Tahoe (Hybrid)

The 2025 Dissertation Award Winner has been asked to present at the 2026 AMTE Conference.

NATIONAL TECHNOLOGY LEADERSHIP INITIATIVE AWARD

[Amanda Gantt Sawyer](#), James Madison University

[Marcus Wolfe](#), James Madison University

Session 50, Thursday, February 6, 2:15 - 3:00 PM, Nevada 6

Exploring Preservice Teachers' Adaptations of Artificial Intelligence Created Mathematics Curricula: Discovering Overconfidence

MTE OUTSTANDING REVIEWER AWARD

[Karisma Morton](#), University of North Texas

AMTE CONFERENCE REGISTRATION & MEMBERSHIP SCHOLARSHIP

[Daisy Mae Bongtiwon](#), Eulogio "Amang" Rodriguez Institute of Science and Technology

SPONSORS

AMTE would like to express our appreciation to this year's Sponsors for providing invaluable support for our conference and for our organization's activities and initiatives. Look for Gold and Silver Showcase Sessions in the program, **Session 36**, **Session 48**, and **Session 191**.

MATH LEARNING CENTER

GOLD SPONSOR

At **The Math Learning Center (MLC, mathlearningcenter.org)**, we believe everyone can make sense of math. Our innovative and standards-based instructional materials, our professional development, and our suite of complimentary resources inspire and enable everyone to discover and develop their mathematical confidence and ability.

If you're a college- or university-based mathematics teacher educator or one of their students, you can gain access to the full contents of the Bridges® in Mathematics PK–5 curriculum, Bridges Intervention and Concept Quests via the Bridges University Program (mathlearningcenter.org/university). .

MLC also sponsors the AMTE Elementary Mathematics Specialist Scholarships (amte.net/about/ems). These scholarships enhance your knowledge of mathematics content, pedagogy, and leadership when you enroll in university coursework to become a certified mathematics specialist.

CPM EDUCATIONAL PROGRAM

GOLD SPONSOR

CPM Educational Program (cpm.org) is a California nonprofit 501(c)(3) serving the secondary mathematics education community with curriculum, professional development, and leadership. CPM University Support (cpm.org/university) is pleased to sponsor AMTE and its STaR Fellows program as it provides professional development for new math education faculty targeted to help them inspire the next wave of math teachers across the country.

CPM envisions a world where mathematics is viewed as intriguing and useful, and is appreciated by all; where powerful mathematical thinking is an essential, universal, and desirable trait; and where people are empowered by mathematical problem-solving and reasoning to solve the world's problems. CPM University Support provides complimentary curriculum materials to pre-service teacher candidates, mathematics teacher educators, and mathematics curriculum reviewers and researchers.

SPONSORS

MAIER MATH FOUNDATION

SILVER SPONSOR

The **Math Learning Center** created the **Maier Math Foundation** (maierfoundation.org) to inspire and enable all individuals to discover and develop their mathematical confidence and ability.

Visual math models and inquiry-based, learner-focused instructional practices form the basis for our collaborations with educators, researchers, and other nonprofit organizations to pursue our common objectives of supporting current and future teacher educators.

The foundation is named in honor of Professor Gene Maier, cofounder of The Math Learning Center. His novel ideas, love for teaching, and engaging approach to math education inspired countless teachers and students as they embarked upon their lifelong math journeys.

BUDAPEST SEMESTERS IN MATHEMATICS EDUCATION BRONZE SPONSOR

Summer@BSME (<https://bsmeducation.com/>) is a six-week summer study abroad program in Budapest, Hungary, designed for undergraduates, recent graduates, and in-service teachers interested in the learning and teaching of secondary mathematics. Participants take a variety of courses in mathematics education and complete a week-long field experience. Come experience Hungarian pedagogy based on guided discovery—which emphasizes problem solving, creativity, and communication—as well as the rich and vibrant culture of Hungary. Participants earn either undergraduate credit or graduate credit.

NCSM - LEADERSHIP IN MATHEMATICS EDUCATION BRONZE SPONSOR

NCSM - Leadership in Mathematics Education (<https://www.mathedleadership.org/>) is a mathematics education leadership organization that equips and empowers a diverse education community to engage in leadership that supports, sustains, and inspires high quality mathematics teaching and learning every day for each and every learner. Our bold leadership in the mathematics education community develops vision, ensures support, and guarantees that all students engage in equitable, high- quality mathematical experiences that lead to powerful, flexible uses of mathematical understanding to affect their lives and to improve the world. Stop by our booth for more information about NCSM, our publications and resources to support mathematics leaders.



THE MATH LEARNING CENTER

At The Math Learning Center (MLC), we believe everyone can make sense of math. Our innovative and standards-based instructional materials, our professional development, and our suite of **complimentary resources** inspire and enable everyone to discover and develop their mathematical confidence and ability.

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mathlearningcenter.org/university

amte.net/about/ems

Our mission is to inspire and enable individuals to discover and develop their mathematical confidence and ability.



CPM Educational Program

Empowering mathematics students and teachers for over 30 years through exemplary curriculum, professional development, and leadership

CPM's University Support Program

- Complimentary access to teacher editions of CPM's secondary mathematics curricula as a resource for teacher preparation coursework, student teaching, curriculum review, and research
- Enroll at [CPM.org/university](https://www.cpm.org/university)

Teacher Edition Features

- + Team Roles and Groupworthy Tasks to support collaboration
- + Study Team Teaching Strategies to support engagement and equitable status
- + Problem-Based Learning to support conceptual understanding
- + Mixed Spaced Practice to support procedural proficiency

Sample Lessons

CPM Sample Lessons provide glimpses into the nature of tasks in CPM texts: [CPM.org/lessons](https://www.cpm.org/lessons)

Visit [CPM.org/university](https://www.cpm.org/university)

- + Enroll in the University Support Program.
- + Request print materials for your university's curriculum library.
- + Email CPM's research department.





Maier Math Foundation

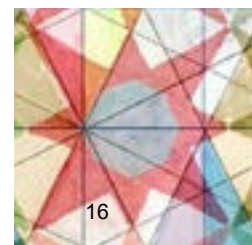
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maiermathfoundation.org
mathlearningcenter.org

Our mission is to empower individuals to develop their mathematical confidence and ability.



@Summer BSME

*“Give them
not only information,
but know-how, attitudes of mind,
the habit of methodical work.”*

– George Pólya

Summer@BSME is a six-week summer program in Budapest, Hungary, designed for undergraduates, recent graduates, and in-service teachers interested in the learning and teaching of secondary mathematics. Home to eminent mathematicians such as Paul Erdős, Vera Sós, and George Pólya, Hungary has a long tradition of excellence in mathematics education. The BSME instructors are Hungarian teacher scholars who follow their own mathematical upbringing in Hungary and bring a creative spirit to the program.

BSME is specifically intended for those who are not only passionate about mathematics, but also the *teaching* of mathematics.

PROGRAM HIGHLIGHTS:

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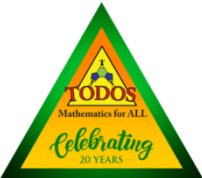
BUDAPEST SEMESTERS
IN MATHEMATICS EDUCATION

EXHIBITORS

AMTE appreciates the generous support of our exhibitors. Please take an opportunity to thank them for their contributions to AMTE by visiting with them in the exhibit area located in the Grand Salon on the Casino Level.

Exhibitor Hours: Thursday 10:00 am – 4:30 pm
 Friday 8:00 am – 4:30 pm

Exhibitor	About The Exhibit
	<p>CPM Educational Program is a California nonprofit 501(c)(3) empowering mathematics students and teachers through exemplary curriculum, professional development, and leadership. We recognize and foster teacher expertise and leadership in mathematics education. We engage all students in learning mathematics through problem solving, reasoning, and communication. CPM University Support provides complimentary curriculum materials to support pre-service teacher candidates, mathematics teacher educators, and mathematics curriculum reviewers and researchers. Please visit booth.cpm.org to learn more about CPM Educational Program and cpm.org/university to request complimentary access to CPM materials.</p>
	<p>Get the Facts Out (GFO) is an NSF-funded project between four national societies and the Colorado School of Mines, working together to repair the reputation of the teaching profession: the American Physical Society, the American Chemical Society, the American Association of Physics Teachers, and the Association of Mathematics Teacher Educators. GFO is a unique project designed to reach STEM majors and has the potential to significantly address teacher shortages in these high-need STEM disciplines. To change the conversation around STEM teacher recruitment at institutions across the country, GFO produces research-based, user-tested resources and messaging that faculty can use to help improve their teacher recruitment efforts. The resources and messages are designed to celebrate the positives of teaching and to provide students and faculty with facts that address misinformation and common misperceptions about teaching. Supported by the National Science Foundation under Grant No. 2337285.</p>
	<p>Visit our shared MLC-MMF booth to learn more about our sponsored sessions, free resources, and the Bridges University Program.</p> <p>College- or university-based mathematics teacher educators may request a free subscription to the Bridges Educator Site. The BES contains the full contents of Bridges in Mathematics, Bridges Intervention, and Concept Quests in PDF format as well as a host of support and professional learning resources.</p> <p>As mission-driven organizations, we're interested in promoting equitable and effective mathematics teaching practices. By providing these free resources, we hope to contribute to elementary teacher preparation and professional development.</p>

Exhibitor	About The Exhibit
 <p>Mathematics Teacher Education Partnership</p>	<p>MTEP (Mathematics Teacher Education Partnership) 2.0 is a network of secondary mathematics teacher preparation programs working to transform their programs to better align with the MTEP Guiding Principles, which are aligned with the AMTE Standards for Preparing Teachers of Mathematics. MTEP supports secondary mathematics teacher preparation programs and their partners as they increase the number of well-prepared beginning secondary mathematics teachers while foregrounding issues of equity and access. Areas of focus for MTEP 2.0 include recruiting more secondary mathematics teacher candidates, improving school partnerships, centering improvement efforts on equity and social justice, and meeting new accreditation expectations. Visit http://mtep.info/ for more information.</p>
<p>AMTE Membership Committee</p>	<p>The AMTE Membership Committee focuses on member benefits and recruitment. Stop by the exhibit table to learn more about opportunities for professional growth within AMTE! Opportunities include initiatives such as Community Circles and the Early Career BIPOC Faculty Mentoring Program as well as other ways to get involved in AMTE and to take advantage of member resources. Please stop by our table to learn more!</p>
 <p>NCSM – Leadership in Mathematics Education</p>	<p>NCSM - Leadership in Mathematics Education is a mathematics education leadership organization that equips and empowers a diverse education community to engage in leadership that supports, sustains, and inspires high-quality mathematics teaching and learning every day for each and every learner. Our bold leadership in the mathematics education community develops vision, ensures support, and guarantees that all students engage in equitable, high-quality mathematical experiences that lead to powerful, flexible uses of mathematical understanding to affect their lives and to improve the world. Stop by our booth for more information about NCSM, our publications and resources to support mathematics leaders.</p>
<p>AMTE Publications Division</p>	<p>The Publications Division of AMTE has three publications: <i>Mathematics Teacher Educator</i> journal (<i>MTE</i>), <i>Contemporary Issues in Technology and Mathematics Teacher Education</i> (<i>CITE-M</i>), and <i>Connections</i> (AMTE's quarterly publication that provides organizational information and features peer-reviewed articles). The Division also spearheads the Professional Book Series. Please stop by our table to learn more!</p>
 <p>TODOS – Mathematics for All!</p>	<p>TODOS: Mathematics for ALL is a national professional organization that advocates for equity and excellence in mathematics education for ALL students - in particular, Latina/o students. TODOS advances educators' knowledge, develops and supports education leaders, generates and disseminates knowledge, informs the public, influences educational policies, and informs families about education policies and learning strategies. TODOS continues to advocate for a dual focus on social justice and excellence in mathematics with our upcoming book titled <i>Antiracist Mathematics Education: Stories of Acknowledgment, Action, and Accountability</i>. An amazing book of stories written for and by people who care; each story is a chapter of ideas grounded in the recent position statement, <i>The Mo(ve)ment to Prioritize Antiracist Mathematics</i>, and its four supporting commentaries. This book is important because racism continues to rear its ugly head in new and disturbing ways. This book is for students, teachers, parents & caregivers, administrators, and community members. Go to www.todos-math.org for updated information.</p>



Mathematics Teacher Education Partnership

Inspire. Empower. Transform. For All.

We support secondary mathematics teacher preparation programs and their partners as they increase the number of well-prepared beginning secondary mathematics teachers, while foregrounding issues of equity and access.

- ◆ Recruit more secondary mathematics teacher candidates
- ◆ Improve your school partnerships
- ◆ Center improvement efforts on equity and social justice
- ◆ Meet new accreditation expectations



Visit MTEP-related sessions at AMTE
mtep.info/amte2025



Breakfast

SUMMIT PAVILION

We invite you to enjoy a light continental-style breakfast and join conversations to build and nurture our professional community.

[Click here to access the menu.](#)



OPENING SESSION

TAHOE/RENO

Moving Beyond Transactional Relationships in Educational Spaces

- Beth Herbel-Eisenmann, *Michigan State University*
- Nicol Howard, *University of Redlands*
- Lateefah Id-Deen, *Kennesaw State University*
- Carlos Lopez Leiva, *University of New Mexico*
- Farshid Safi (Moderator), *University of Central Florida*

This session will be an interdisciplinary panel representing multiple stakeholders and teacher education perspectives to discuss "Moving Beyond Transactional Relationships in Educational Spaces." A rich discussion addressing mutually beneficial partnerships including school districts, teacher preparation programs leveraging research-informed practices and a shared leadership to move beyond transactional relationships to meet the needs of our communities in various educational spaces.



OVERVIEW OF THURSDAY MORNING, FEBRUARY 6, 2025

	10:00 AM - 10:45 AM	11:00 AM - 11:45 AM
Tahoe (Hybrid)	1. AMTE Award Winner - No More Long Game: Replacing Academic Apartheid with Math Joy and Justice Now! - Aguirre (Extended Session 10:00 - 11:30)	
Carson 1 (Hybrid)	2. <i>Designing an Artificial Intelligence-powered Chatbot to Support the Development of Questioning Skill</i> - Webel*, Lee*, Yeo & Hanak*	17. <i>Using Human-Centered Design to Improve the Student Teaching Experience</i> - Coffey, Pierson*, Burnham*, Penna* & Barber*
Carson 2 (Hybrid)	3. <i>Reification and Resistance of Whiteness in Preservice Teachers' Math Autobiographies</i> - Smith	18. MTEP Session - Standards, Rigor, and Pressures of Increasing Pathways to Certification - Franz & Barrett
Carson 3	4. <i>Unpacking Institutional Racism through Data Investigations</i> - Fernandes, Simic-Muller* & Weiland* (Extended Session 10:00 - 11:30)	
Carson 4	5. <i>Inflection Points: Career and Life Trajectories of Mathematics Teacher Educators</i> - Brown, Ko, Taylor & Breiding (Symposium 10:00 - 11:30)	
Nevada 1	6. <i>Supporting Preservice Secondary Teachers' Understanding of the Importance of Defining and Definitions</i> - Cirillo, Seiwel, Boyce, Brown*, Griffin*, Miller, Norman* & Parrott (Symposium 10:00-11:30)	
Nevada 2	7. <i>Combating Deficit Discourse: Supporting Preservice Teachers in Noticing Student Strengths</i> - Zarza, Orr & Herbel-Eisenmann	19. <i>Teacher Positioning During CoLearning Interactions in Clinical Experiences: Examining Teachers' Roles as Learners and Contributors</i> - Fink, Knapp, Stafford* & Kulow
Nevada 3	8. MTEP Session - Mathematics Teaching Practices most evident in National Board Teachers' Practices in a Professional Development Project - Zelkowski, Smith & Gooden	20. <i>Supporting Cohesive Learning of Elementary Teachers through a University-School Partnership</i> - James, Steimle* & Buford
Nevada 4	9. <i>Exploring How Prospective Teachers Compare Multiple Strategies in Comparing Tasks in Mathematics Methods Course</i> - Han & Pak	21. <i>Learning by Scientific Design: Examples and Non-examples in Math Methods</i> - Martin
Nevada 5	10. <i>Collaborations & Partnerships Reports</i> - Hovermill; Crawford-Ferre & Moss	22. <i>Development of Mathematics Teacher Educators Reports</i> - Gooden; Runnals & Cawley
Nevada 6	11. <i>Mathematics Pedagogy Reports</i> - King, Forde, Gil, & Smith; Mainzer	23. <i>Mathematics Pedagogy Reports</i> - Smith & Mirzaei; Conner & McMillan
Nevada 7	12. <i>What Counts as Mathematical? Teachers' Descriptions of Solutions to an Expression-Building Task</i> - Patterson & Prasad*	24. <i>Student Teachers' Developing Understandings of Equitable Mathematics Teaching as Mediated by Their Mentors</i> - Sternberg
Crystal 2	13. <i>Using a Simulation to Examine Noticing Through Prospective Teachers' Models of Children's Mathematical Thinking</i> - Tyminski & Barnes	25. <i>Moving a Face-to-face Course to Hybrid: Successes and Struggles</i> - Hansen, Frauenholtz & O'Dell*
Crystal 3	14. <i>Measuring Preparedness to Teach Math with Technology</i> - McCulloch, Lovett, Dick*, Bailey, Cayton & Wilson*	26. <i>Discarding Identities: Curricular Tasks for Prospective Mathematics Teachers</i> - Edgington, Males, Anderson, Ellis & Quist
Crystal 4	15. <i>Equity, Social Justice and Mathematics Teacher Education Reports</i> - Buchheister & Jackson; Woods, Johnson, Waddell, Bay-Williams, morris, Pinilla & Cutler	27. <i>Preparing Prospective Teachers to Use the 5E Instructional Model: Going Beyond Each E</i> - Smith*, King, Soriano* & Paunovska*
Crystal 5	16. AMTE Technology Committee - Ethical Use of Artificial Intelligence for Teaching, Research, and Service: Where's the Line? – Conway IV, Glassmeyer, Hertel & Krupa	

Session 1**Tahoe (Hyb/Reg)****AMTE Award Winner****Extended Session (10:00 – 11:30)*****No More Long Game: Replacing Academic Apartheid with Math Joy and Justice Now!***Julia Aguirre, *University of Washington Tacoma*

After 25 years as a critical equity scholar in mathematics education, I've noted limited progress in dismantling structures that harm and dehumanize students' math identities, agency, and advancement, especially for global majority students underrepresented in STEM. We must rethink our advocacy approaches to end academic apartheid in mathematics education now! In this interactive session we will explore examples on how to organize and take immediate action in our work as mathematics teacher educators to dismantle interlocking systems of oppression including racism, sexism, classism, and ableism. Our goals: End academic apartheid and cultivate joy and justice in mathematics education forever.

Session 2**Carson 1 (Hyb)****Practice-Based Experiences for Prospective or Practicing Teachers****Discussion Session*****Designing an Artificial Intelligence-powered Chatbot to Support the Development of Questioning Skill***Corey Weibel*, *University of Missouri*Dabae Lee*, *Kennesaw State University*Sheunghyun Yeo, *Daegu National University of Education*Rebekah Hanak*, *University of Missouri Columbia*

In this session, participants will collectively consider the decisions that need to be made to design a chatbot that can emulate a child's mathematical thinking with the goal of providing opportunities for prospective teachers to develop their questioning skills. These decisions include what questions prospective teachers might ask in a specific scenario, how the chatbot will interpret the intent of such questions, and how the chatbot could or should respond in order to promote learning. Participants can then try out a prototype chatbot that is currently being piloted in methods courses.

Session 3**Carson 2 (Hyb)****Equity, Social Justice, and Mathematics Teacher Education****Individual Session*****Reification and Resistance of Whiteness in Preservice Teachers' Math Autobiographies***Brian Alexander Smith, *University of Minnesota Duluth*

In this session, I will establish connections between the culture of exclusion and Whiteness by drawing on scholars of Critical Whiteness Studies. I will introduce a framework with which to understand preservice teachers' contributions to coursework and assignments throughout their teacher preparation that allows teacher educators to better understand how these contributions might reify or resist the culture of exclusion. Session attendees will apply this framework to data provided by the presenter before discussing their findings in conjunction with attendees' collective experience and preliminary findings of the presenter's research project.

Session 4**Carson 3****Mathematics Content and Curriculum****Featured MTEP Extended Session (10:00 – 11:30)*****Unpacking Institutional Racism through Data Investigations***Anthony Fernandes, *University of North Carolina Charlotte*Ksenija Simic-Muller*, *Pacific Lutheran University*Travis Weiland*, *University of Houston*

In this workshop, participants will engage in a statistical investigation using 5000 traffic stops. Discussions of institutional racism will be grounded in their statistical analysis. Connections will be made to teacher preparation.

Session 5
Development of Mathematics Teacher Educators
Symposium (10:00 – 11:30)

Carson 4

Inflection Points: Career and Life Trajectories of Mathematics Teacher Educators

Liz Brown, *Indiana State University*
Yi-Yin Ko, *Indiana State University*
Christine Taylor, *Indiana State University*
Alison Leigh Breiding, *Indiana State University*

The panelists consist of four mathematics teacher educators at various stages of their careers: early career, recently tenured, recently promoted to full, and experienced full professor. We will provide a framework adapted from Super's (1980) seminal work for thinking about career and life trajectories, show examples, and provide the time and space for participants to reflect on their own experiences and their future career and life goals within the framework. Participants will actively engage with each other in small groups and with the panelists. This session is for mathematics teacher educators at all stages of their careers.

Session 6

Nevada 1

Mathematics Content and Curriculum
Symposium (10:00 – 11:30)

Supporting Preservice Secondary Teachers' Understanding of the Importance of Defining and Definitions

Michelle Cirillo, <i>University of Delaware</i>	Casey Griffin*, <i>University of La Verne</i>
Amanda Seiwel, <i>University of Delaware</i>	Nathaniel Miller, <i>University of Northern Colorado</i>
Steven Boyce, <i>Portland State University</i>	Fawnda Norman*, <i>University of Wisconsin- Oshkosh</i>
Amanda Marie Brown*, <i>University of Michigan</i>	Amy Parrott, <i>University of Wisconsin Oshkosh</i>

We share the importance of attending to definitions in mathematics teaching and learning and explore research-based ideas, strategies, and activities for engaging preservice teachers in defining and understanding the role, structure, and importance of definitions.

Session 7

Nevada 2

Practice-Based Experiences for Prospective or Practicing Teachers
Individual Session

Combating Deficit Discourse: Supporting Preservice Teachers in Noticing Student Strengths

Sabrina Nicole Zarza, *Michigan State University*
Sheila Orr, *University of Tennessee-Knoxville*
Beth Herbel-Eisenmann, *Michigan State University*

This session focuses on supporting prospective teachers to notice and articulate ways to build on student strengths. We offer the theoretical perspectives we drew on, along with two assignments we developed for practice-based experiences in two of our secondary math methods courses, share how our preservice teachers responded to these assignments and ask participants to discuss the strengths and limitations of the assignments. Finally, we hope to draw on the collective expertise of participants to brainstorm ways to improve the assignments and invite participants to collaborate with us to systematically study the enactment of the next iteration of the assignments.

Session 8

Nevada 3

Mathematics Pedagogy
Featured MTEP Individual Session

Mathematics Teaching Practices Most Evident in National Board Teachers' Practices in a Professional Development Project

Jeremy Zelkowsky, *The University of Alabama*
Felicia A. Smith, *Minnesota State University-Mankato*
Chalandra Gooden, *Minnesota State University-Mankato*

This session will focus on the outcomes of a multiyear professional development project with secondary mathematics teachers. The goals of the project are to develop master teachers, i.e. mathematical specialists, to improve school and district improvements in pedagogical practices related to NCTM's Mathematics Teaching Practices. We highlight the empirical results, as well as engaging participants in the use of our validated instrumentation used during classroom observations.

Session 9
Practice-Based Experiences for Prospective or Practicing Teachers
Individual Session

Nevada 4

Exploring How Prospective Teachers Compare Multiple Strategies in Comparing Tasks in Mathematics Methods Course

Simon Byeonguk Han, *Portland State University*
Byungeun Pak, *Utah Tech University*

In this session, we will share a study on how prospective teachers compared multiple strategies in the four comparing tasks in the context of hypothetical number talks. The goals for this presentation include: (1) providing examples of ways for prospective teachers to compare multiple strategies; (2) offering evidence of challenges that prospective teachers may face when they facilitate comparing different strategies while they enact number talks with students in fieldwork placements; and (3) to providing mathematics teacher educators with insights into ways they support prospective teachers to leverage number talks as learning opportunities to create an inquiry/argument classroom culture.

Session 10
Collaborations and Partnerships
Report Session

Nevada 5

Partnering with Native American Serving Schools to Implement Culturally Sustaining STEM

Jeffrey Hovermill, *Northern Arizona University*

University/School Partnerships with Native American serving schools can support the understandings and practices of both parties. Incorporating iterations of planning and feedback from participating teachers, community advisors, STEM professionals, and tribal college faculty has allowed for the development of increased communication, collaboration, and support. This report describes how design-based research principles were applied within two research projects focused on STEM education in Native American serving middle and high schools and the compelling results of doing so.

State, District, and Higher Education: Partners in Algebra Instruction through Storytelling

Heather Crawford-Ferre, *Nevada Department of Education*
Diana Moss, *University of Nevada, Reno*

This report details the implementation of a storytelling approach to teach prealgebra and algebra content to middle grades students and college students. It was the result of a collaboration between the state department of education, the local education agency, and the institute of higher education. Similarities and differences between student groups (middle school and post-secondary) will be shared in addition to key takeaways for successful collaboration across educational systems.

Session 11
Mathematics Pedagogy
Report Session

Nevada 6

It's Not Only About the Math: A Classroom Intervention About Social Considerations While Selecting Presenters

Barbara King, *Florida International University*
Elizabeth Forde, *State University of New York (SUNY) New Paltz*

Indira Gil, *Brown University*
Carmen Smith*, *University of Vermont*

This empirical study of math methods students from two universities examines how prospective teachers who participated in an instructional intervention navigate using mathematical and social (i.e., gender, race/ethnicity, performance) considerations when making decisions about selecting and sequencing students' work during a problem-based lesson. We found that prospective teachers frequently refer to students' performance and participation as reasons for selecting certain students to present. Our analysis of their conversations indicated concerns over comfort level, which sometimes led prospective teachers to avoid students they believed might be uncomfortable presenting. This session is intended for teacher educators and current teachers using problem-based instruction.

Noticing and Wondering with Preservice Elementary Teachers: Benefits and Considerations

Emily Mainzer, *York College of Pennsylvania*

Notice and Wonder tasks have recently gained traction in mathematics education, with educators reporting anecdotal benefits for learner engagement. However, the impacts of these tasks have not been systematically researched. This report will begin to address this research gap by sharing findings regarding the engagement of elementary preservice teachers in a Notice and Wonder task during their elementary mathematics methods course. Implications will aid mathematics teacher educators in making informed decisions about how to use Notice and Wonder tasks with their elementary preservice teachers and how to advise their preservice teachers about using these tasks with their elementary students.

Session 12
Mathematics Pedagogy
Individual Session

Nevada 7

What Counts as Mathematical? Teachers' Descriptions of Solutions to an Expression-Building Task

Cody Patterson, *Texas State University*
Priya Vinata Prasad*, *University of Texas at San Antonio*

In this session, participants will explore middle and high school algebra teachers' descriptions of different teacher-generated solutions to an expression-building task, and possible implications of these for the practice of selecting, sequencing, and connecting student solutions to problem-solving tasks in algebra. We will share initial findings from our research on teachers' descriptions of solution strategies and seek participants' insight into professional knowledge and dispositions that might support equity-oriented practices for fostering the development of students' positive mathematics identities.

Session 13
Practice-Based Experiences for Prospective or Practicing Teachers
Individual Session

Crystal 2

Using a Simulation to Examine Noticing Through Prospective Teachers' Models of Children's Mathematical Thinking

Andrew Tyminski, *Clemson University*
John Garrett Barnes, *University of Illinois Chicago*

We present a simulation activity and interview from an elementary mathematics content course in which PTs interacted with a simulated 4th grade student and his incorrect strategy for mixed number subtraction. We position PT noticing through the iterative processes of attending and interpreting PTs used to create a model of children's mathematical thinking (CMT), share our analysis of their models in terms of accuracy, predictability, and generalizability, and present our results. We argue PTs' who can develop an accurate, predictive, and generalizable model of CMT are better positioned to decide how to respond.

Session 14
Teaching and Learning with Technology
Individual Session

Crystal 3

Measuring Preparedness to Teach Math with Technology

Allison McCulloch, *University of North Carolina at Charlotte*
Jennifer Lovett, *Middle Tennessee State University*
Lara Dick*, *Bucknell University*

Nina G Bailey, *Montclair State University*
Charity Cayton, *East Carolina University*
Joshua Wilson*, *Middle Tennessee State University*

Capturing preservice teachers' (PSTs') preparedness to teach mathematics with technology is challenging. This session examines three measurement tools that provide insight into PSTs' specialized knowledge and instructional vision. Comparisons as well as affordances and constraints of each will be discussed.

Session 15
Equity, Social Justice and Mathematics Teacher Education
Report Session

Crystal 4

Paramount Tasks in Mathematics: The Game of Survival

Kelley Buchheister*, *University of Nebraska-Lincoln*
Christa Jackson, *Saint Louis University*

Effective mathematics instruction provides learners opportunities to explore mathematical concepts in relevant and meaningful ways. However, many learners experience mathematical tasks that do not represent them, their communities, or their daily lives. It is imperative that educators develop strategies for using classroom resources, such as games, to situate mathematical tasks in culturally rich contexts. In this session, we describe how educators can use games to design Paramount Tasks and explain how Paramount Tasks afford teachers opportunities to explore cultural practices or events, investigate inequities, and problematize how mathematical ideas are embedded in the world and its cultural elements.

Extending Collaboration to Cultivate Positive Mathematics Identities: Current Analysis and Next Steps

Dawn Marie Woods, *Oakland University*
Cheryll Crowe Johnson*, *Asbury University*
Glenn Waddell Jr, *University of Nevada, Reno*

Jennifer Bay-Williams, *University of Louisville*
Samantha Morris*, *University of Louisville*
Robyn K Pinilla, *University of Texas at El Paso*
Carrie S Cutler*, *University of Houston*

We have been implementing an identity survey across our institutions to understand emerging and practicing teachers' mathematical identities. Join us to explore data we have collected, discuss activities and tasks used to cultivate teachers' (and their students') identities, and participate in addressing Standard C.4.2.

Session 16
AMTE Committee Session
Extended Session (10:00 – 11:30)

Crystal 5

AMTE Technology Committee

Ethical Use of Artificial Intelligence for Teaching, Research, and Service: Where's the Line?

Basil Conway IV, *Columbus State University*
David Glassmeyer, *Kennesaw State University*

Joshua Hertel, *University of Wisconsin-La Crosse*
Erin Krupa, *North Carolina State University*

This session will explore emerging issues surrounding the use of Artificial Intelligence (AI) technologies for the work of mathematics teacher educators (MTEs) in the realms of teaching, research, and service. We will engage in discussions to help MTEs navigate the affordances and constraints of different AI tools in mathematics education.

Session 17**Carson 1 (Hyb)****Practice-Based Experiences for Prospective or Practicing Teachers
Discussion Session*****Using Human-Centered Design to Improve the Student Teaching Experience***David Coffey, *Grand Valley State University*
Paige Nicole Pierson*, *Grand Valley State University*Jordan Rose Burnham*, *Grand Valley State University*
Seth Penna*, *Grand Valley State University*
Leah Barber*, *Grand Valley State University*

Find out how a cohort of preservice secondary teachers planned lessons using a design thinking protocol to center the lived experiences of their students. Each week, the preservice teachers reflected on what was happening at their clinical setting, why, and collaborated on designing lessons to meet the evolving needs of their students. Hear directly from the student teachers about how this approach improved the algebra and geometry lessons they co-taught in middle school classrooms. Participants will have the opportunity to practice the protocol around their own practice. Anyone interested in exploring ways to humanize mathematics will find this session useful.

Session 18**Carson 2 (Hyb)****Mathematics Education Policy and Program Issues
Featured MTEP Individual Session*****Standards, Rigor, and Pressures of Increasing Pathways to Certification***Dana Pomykal Franz, *Mississippi State University*
Diane Barrett, *University of Hawaii at Hilo*

The goal of this presentation is to examine the intersection between upholding the high standards developed for teacher preparation, meeting the US goals for mathematics proficiency in K12 students, and the enacting of state and local policies and practices that are seemingly lowering the credentialing standards for new teachers as one method to attract more people to the profession. Participants will use an iterative framework to discuss how policies may have negative impacts on the quality of new teachers.

Session 19**Nevada 2****Practice-Based Experiences for Prospective or Practicing Teachers
Individual Session*****Teacher Positioning During CoLearning Interactions in Clinical Experiences: Examining Teachers' Roles as Learners and Contributors***Heather McGinnis Fink, *Portland State University*
Melinda C Knapp, *Oregon State University-Cascades*Taylor Elsa Stafford*, *University of Washington*
Torrey Kulow, *Portland State University*

This session examines how teacher candidates and mentor teachers were positioned as learners and/or contributors while using tools designed to support teacher dyads in collaborative learning (i.e., "co-learning"). Data for this presentation comes from one elementary school site where teacher candidates switched mentor teachers midway through the school year. These partnership changes allow us to analyze tool use by the same teacher candidate with two different mentor teachers, and vice versa. In this session, we will consider how differences in positioning across dyads shaped teachers' opportunities to co-learn about equity-oriented mathematics instruction, with implications for clinical experience design.

Session 20**Nevada 3****Collaborations and Partnerships
Individual Session*****Supporting Cohesive Learning of Elementary Teachers through a University-School Partnership***Julie James, *The University of Mississippi*
Alice Steimle*, *The University of Mississippi*Valarie Buford, *The University of Mississippi, Oxford School District - Della Davidson Elementary*

University-school partnerships bridge research and practice, positioning both schools and researchers to address the evolving needs of teachers and students in the local context. This session will report on the results of a year-long partnership with elementary math and special education teachers engaged in PD designed to deepen their content knowledge related to number and operations. Data on the impact of the PD on teachers' perceptions of teaching mathematics and their perception of students' success in learning mathematics will be shared. Attendees will gain insight from the university and school perspective, informing the practice of both researchers and school practitioners.

Session 21
Mathematics Pedagogy
Individual Session

Nevada 4

Learning by Scientific Design: Examples and Non-examples in Math Methods

Kristi Martin, *Ball State University*

Deans for Impact created the Learning by Scientific Design (LbSD) network of ten teacher preparation programs to ensure teacher candidates are prepared with our best understanding of how students learn. We implemented LbSD modules across content methods courses, including Using Examples and Non-examples (ENE) modules in math methods. We restructured our coursework to model ENE in practice. TCs engaged in various content-based and pedagogy-based activities throughout the course as students and then analyzed how they met the ENE criteria after completing them. TCs were able to implement ENE into their own lessons to create more equitable learning opportunities for their students.

Session 22
Development of Mathematics Teacher Educators
Report Session

Nevada 5

Leveraging Math Teachers' Identities to Promote Future Retention in the Profession

Chalandra Gooden, *Minnesota State University-Mankato*

This session examines the findings of a study investigating the relationship between teachers' professional identities and retention among secondary mathematics teachers in hard-to-staff schools. Using a sequential mixed methods approach, the study reveals the significance of environmental factors, professional identities, community building, and student engagement to the teachers' retention. The findings promote implications of purpose and method to mathematics teacher preparation programs studying the professional identities of preservice teachers. Additionally, the session covers the importance of continuous professional development and mentorship in influencing both retention rates and the formation of professional identity among teachers.

Supporting Emergent Community College Mathematics Teacher Educators: Exploring Problems of Practice

Cristina Runnalls, *California State Polytechnic University, Pomona*
Anne Cawley, *California State Polytechnic University, Pomona*

This paper presents results from a professional development program designed to support community college mathematics faculty on their professional journey to becoming mathematics teacher educators. Faculty engaged in monthly meetings to foster a professional learning community around a first math course for future elementary teachers. This paper reports on the problems of practice discussed by participants. We share insights into challenges faced by novice mathematics teacher educators as they navigated this difficult process.

Session 23
Mathematics Pedagogy
Report Session

Nevada 6

Preservice Teachers' Emerging Conceptions of Equitable Teaching: Exposure and Experiences in Elementary Math Methods Courses

Ethan P. Smith, *Washington State University Tri-Cities*
Amanda Mohammad Mirzaei, *Manhattanville University*

The report describes preliminary investigations in two elementary mathematics methods courses focused on preservice teachers' (PSTs) emerging conceptions of equitable mathematics teaching. We describe how we as instructors frame and situate equity (i.e., exposure) and engage students in participating in and applying aspects of equity (experience) through coursework, emphasizing the importance of both exposure and experience in supporting PST learning. We then describe students' emerging conceptions of equitable mathematics teaching, and how students attribute these conceptions to the design and implementation of the course. These findings can support teacher educators in centering student voice through an integrated approach to equity.

Whose Idea?: Engaging with Others' Ideas During Number Talks

Kimberly Conner, *University of Northern Iowa*
Brandon G McMillan, *Brigham Young University*

Our analysis of 30 teachers' Number Talks found careful questioning practices are needed to preference students' engagement with each others' ideas over 'student and teacher' or 'teacher idea' questions that do the thinking for our students.

Session 24
Practice-Based Experiences for Prospective or Practicing Teachers
Individual Session

Nevada 7

Student Teachers' Developing Understandings of Equitable Mathematics Teaching as Mediated by Their Mentors

Kateri A Sternberg, *University of Delaware*

Student teaching placements may be a key time during which student teachers deepen and solidify their understandings of equitable mathematics teaching. Through two cases of elementary student teachers and their mentor teachers, this session illustrates the ways in which the beliefs and practices of mentor teachers may broaden and constrain their student teachers' understandings of equitable mathematics teaching in practice.

Session 25
Teaching and Learning with Technology
Individual Session

Crystal 2

Moving a Face-to-face Course to Hybrid: Successes and Struggles

Heidi Britte Hansen, *Bemidji State University*

Todd Frauenholtz, *Bemidji State University*

Jenna O'Dell*, *Bemidji State University*

This session provides an overview of the transformation of a set of face-to-face mathematics education courses for current and future teachers (graduate and undergraduate) to a hybrid format, with recommendations and cautions for others, and opportunity for discussion.

Session 26
Equity, Social Justice, and Mathematics Teacher Education
Featured MTEP Individual Session

Crystal 3

Discarding Identities: Curricular Tasks for Prospective Mathematics Teachers

Cyndi Edgington, *North Carolina State University University*

Lorraine Marie Males, *University of Nebraska-Lincoln*

Robin Anderson, *North Carolina State University*

Ruby Ellis, *North Carolina State University*

Maggan Quist, *University of Nebraska-Lincoln*

We share a research project aimed at developing prospective mathematics teachers' critical consciousness to counteract anti-Blackness in mathematics education, in particular our efforts to design and implement a module centered around mathematics identity. This session will engage participants in aspects of the module, examine samples of prospective teachers' reflections from the module enacted at 3 different institutions, and reflect on how the module can be adapted to different contexts.

Session 27
Mathematics Pedagogy
Individual Session

Crystal 4

Preparing Prospective Teachers to Use the 5E Instructional Model: Going Beyond Each E

Carmen Smith*, *University of Vermont*

Barbara King, *Florida International University*

Lacey Soriano*, *Florida International University*

Natasha Paunovska*, *Florida International University*

This session will explore an instructional sequence to develop prospective mathematics teachers' abilities to implement the 5E Instructional Model effectively. We will discuss our motivations for using the 5E model, share our instructional sequence based on the learning cycle principles outlined by McDonald et al. (2013), and engage participants in inquiry-based activities that exemplify the 5E approach. We developed this session for mathematics teacher educators, particularly those teaching methods courses or individuals interested in using the 5E model in their own mathematics teaching.



ADVOCACY LUNCH

SUMMIT PAVILION



Disability Justice in Mathematics Education: Perspectives, Frameworks, and Implications for Practice

Rachel Lambert, *University of California Santa Barbara*

Katherine Lewis, *University of Washington*

Daniel Reinholz, *San Diego State University*

Lisette Torres-Gerald, *TERC*

Honora Wall, *The Dyscalculia Training and Research Institute*

Cathery Yeh, *University of Texas at Austin*

This webinar will consist of a panel of researchers discussing their work in disability justice as it relates to mathematics education. The panel represents a wide range of foci across the spectrum of disability including dyscalculia, universal design for learning, and intersections between race and disability. By integrating insights from the panelists' diverse areas of expertise we will engage attendees in a wide-ranging discussion on disability, math education, addressing challenges, sharing best practices, and advocating for inclusive educational policies and practices.

AMTE provides a buffet lunch for registered conference attendees.

[Click here to access the menu.](#)

OVERVIEW OF THURSDAY AFTERNOON, FEBRUARY 6, 2025

	1:15 PM – 2:00 PM	2:15 PM – 3:00 PM
Tahoe (Hybrid)	28. <i>Navigating Policy Recommendations and their Alignment for Mathematics Content Courses for Elementary Teacher Preparation</i> - Wessman-Enzinger, Tobias, Johnson, Olanoff & Bajwa*	44. <i>Navigating equity dilemmas as a culturally responsive math teacher educator: A critical conversation</i> - Aguirre, Suh*, McVicar, Turner* & Carlson*
Carson 1 (Hybrid)	29. <i>TechQuity: Centering Equity in Technology Integration in Mathematics Classrooms</i> - Witt, Mauntel*, Panorkou, Suh* & Chandler	45. <i>A Math and Science Educator Partnering for Authentic Integration for an Elementary STEAM Course</i> - Eddy & Losoya*
Carson 2 (Hybrid)	30. <i>Number Talks: Examining Ways Teachers Uncover and Respond to Students' Mathematically Incorrect or Imprecise Thinking</i> - Pak, Onkananuwonk & Joswick	46. <i>You Really Will Use This: Identifying Aspects of Authenticity in Algebra Problems</i> - Lawrence-Wallquist, Angel & Patterson
Carson 3	31. <i>Promoting Playful Pedagogy: A "Working" Group on Integrating Play in Early Childhood Mathematics Teacher Education</i> - Pinilla, Cutler*, Woods, Zhang & Forde	
Carson 4	32. <i>Mathematics Teacher Educators' Intimate Scholarship (Symposium 1:15-2:45)</i> - Suazo-Flores, Nolan, Bitto & Neihaus*	
Nevada 1	33. <i>MTEP Session - Residue and Supports for Novice Teachers in the Shift from Preservice to In-Service (Symposium 1:15-2:45)</i> - Kirwan, Ko & Gerardo*	
Nevada 2	34. <i>AMTE Publications Division - Considering AMTE's Publications? Learn about the Different Opportunities and Chat with Editors (Extended Session 1:15-2:45)</i> - Swars Auslander, Lesseig & Dean	
Nevada 3	35. <i>Elementary Mathematics Methods Course Redesign with School Partnerships: Cultivating Mentors and Authentic Practice Based Experiences</i> - Menke, Gatza, Watkins, Prough, Martin & Woodward	47. <i>Supporting Teacher Candidates' in Developing their Professional Practice through Embedded Mediated Field Experiences</i> - Billings, Smithey & Swartz*
Nevada 4	36. Gold Sponsor - The Math Learning Center, Using Freely Available Curriculum Materials to Prepare Elementary Teachers for Ambitious and Equitable Mathematics Teaching - Wallus, Gallivan, McCloskey & Rigelman	48. Silver Sponsor - The Maier Math Foundation, Exploring the Role of Teacher Decision-Making When Implementing High-quality Instructional Materials Responsively - Drake, Rigelman, Saxton & Wallus
Nevada 5	37. <i>Equity, Social Justice, and Mathematics Teacher Education Reports</i> - Ugiagbe; Lambert	49. <i>Food, Body, and Numbers: Identifying Anti Fatness in Word Problems</i> - Aguilar* & Gómez Marchant
Nevada 6	38. <i>Practice based Experiences for Prospective and Practicing Teachers Reports</i> - Francis, Bharaj*, Yu*, Gustavson* & Habib*; Colonnese & Reinke	50. AMTE Award Winner - Exploring Preservice Teachers' Adaptations of Artificial Intelligence Created Mathematics Curricula: Discovering Overconfidence - Sawyer & Wolfe*
Nevada 7	39. <i>Developing Responsive Practice within Dilemmatic Spaces of Teaching: Perspectives for Teacher Educators</i> - Underwood*, Nolting*, Gunal Aggul*, Li* & Metts	51. <i>Using Hivemind Simulations to Help Novice and Experienced Teachers Increase Their Responsiveness to Student Thinking</i> - Goldsmith-Markey & Valerio
Crystal 2	40. <i>Strengthening Mathematics and Special Education Coteaching Partnerships Through a Shared Content Focused Professional Learning Academy</i> - LaValley, James & Steimle*	52. <i>Exploring the Impact of Instruction about Artificial Intelligence Use with Preservice Teachers</i> - Marin & Gerstenschlager*
Crystal 3	41. <i>Exploring Diagnostic Interviews as Tools to Integrate Specialized Mathematics Content and Pedagogical Content Knowledge</i> - Kang, Litster, Corven, Kirschner, Colen* & Krejci*	53. <i>Supporting Data Literacy in the Mathematics Classroom through Data Visualizations</i> - Thrasher, Lee*, Graham* & Pace
Crystal 4	42. <i>Equity, Social Justice and Mathematics Teacher Education Reports</i> - Brangelman & Borowski*	54. <i>Equity, Social Justice and Mathematics Teacher Education Reports</i> - Thanheiser, Roman & Mitchell; Torres
Crystal 5	43. AMTE Affiliate Connections Committee - Spotlight on Research to Action, Supporting all Affiliates - Kulow	

Session 28

Tahoe (Hyb/Reg)

**Mathematics Education Policy and Program Issues
Discussion Session*****Navigating Policy Recommendations and their Alignment for Mathematics Content Courses for Elementary Teacher Preparation***Nicole M. Wessman-Enzinger, *George Fox University*
Jennifer M Tobias, *Illinois State University*Kim Johnson, *West Chester University of PA*
Dana Olanoff, *Widener University*
Neet Priya Bajwa*, *Illinois State University*

Mathematics teacher educators use recommendation documents to make decisions about their courses, programs, field experiences, and more. We will host a discussion session on mathematics content recommendations for the preparation for elementary teachers. We will share a review of nine seminal policy documents and their recommendations. We will discuss what navigating the future looks like when programs and recommendations do not align.

Session 29

Carson 1 (Hyb)

**Teaching and Learning with Technology
Discussion Session*****TechQuity: Centering Equity in Technology Integration in Mathematics Classrooms***Nicholas E Witt, *The University of Arizona*
Matthew Mauntel*, *University of New Hampshire*Nicole Panorkou, *Montclair State University*
Jennifer M Suh*, *George Mason University*
Kayla Chandler, *East Carolina University*

This session will promote and advance what we refer to as TechQuity (technology and equity) in mathematics teaching and learning. We will provide an overview of our group's work, how we have analyzed prior frameworks supporting equity and technology while attending to ways in which these frameworks intersect. We have made space to discuss recent advances in technology (e.g., Generative AI) and will facilitate small and large group discussions with MTEs around intersections of technology and equity in preparing teachers, the role of AI in mathematics classrooms, and gathering feedback on our current draft of a TechQuity Framework.

Session 30

Carson 2 (Hyb)

**Mathematics Pedagogy
Individual Session*****Number Talks: Examining Ways Teachers Uncover and Respond to Students' Mathematically Incorrect or Imprecise Thinking***Byungeun Pak, *Utah Tech University*
Nipah Onkananuwonk, *Texas A&M University*
Candace Joswick, *The University of Texas at Arlington*

Teachers can use number talks to support students to uncover conceptual aspects of students errors. We engage participants in discussions of ways teachers engage multiple students in debugging students' errors. Data from three teachers' number talks will be presented.

Session 31

Carson 3

**Mathematics Pedagogy
Extended Session (1:15 – 2:45)*****Promoting Playful Pedagogy: A "Working" Group on Integrating Play in Early Childhood Mathematics Teacher Education***Robyn K Pinilla, *The University of Texas at El Paso*
Carrie S Cutler*, *University of Houston*
Dawn Marie Woods, *Oakland University*Aidong Linda Zhang, *University of North Alabama*
Elizabeth Forde, *State University of New York (SUNY) New Paltz*

Play is critical for young children's learning of mathematics but is often tangential in early childhood educators' preparation, especially for programs that encompass early childhood through elementary grades. In considering what is meaningful for young children and what supports their learning, we will discuss how play can appear in early childhood classrooms as critical learning opportunities and explore what integrating play means for preservice teachers. The working group plans to extend beyond this session to a space of continued collaboration.

Session 32
Development of Mathematics Teacher Educators
Symposium (1:15 – 2:45)

Carson 4

Mathematics Teacher Educators' Intimate Scholarship

Elizabeth Suazo-Flores, *University of North Dakota*
Kathleen T Nolan, *University of Regina*

Laura Bitto, *McDaniel College*
Aubrey Neihaus*, *Wichita State University*

MTEs' use of intimate scholarship responds to calls to learn more about how MTEs develop and use knowledge in teaching about mathematics teaching. To answer such calls, we formed a group of international MTEs to reconstruct research experience using intimate scholarship in mathematics teacher education. The authors of this multifaceted presentation contributed to a book focused on portraying MTE work using the lens of intimate scholarship. MTEs are invited to join our symposium where we will share experiences learning to write intimate scholarship and invite the audience to support strengthening intimate scholarship research in mathematics teacher education.

Session 33
Practice-Based Experiences for Prospective or Practicing Teachers
Featured MTEP Symposium (1:15 – 2:45)

Nevada 1

Residue and Supports for Novice Teachers in the Shift from Preservice to In-Service

James Kirwan, *Kennesaw State University*
Yi-Yin Ko, *Indiana State University*
Juan Manuel Gerardo*, *University of Cincinnati*

In this symposium, we examine three distinct studies that coalesced around common themes of residue and supports for teachers as they shifted from preservice to beginning in-service. Discussion of the impact on teacher preparation courses and programs will then be considered.

Session 34
AMTE Committee Session
Extended Session (1:15 – 2:45)

Nevada 2

AMTE Publications Division

Considering AMTE's Publications? Learn about the Different Opportunities and Chat with Editors

Susan Swars Auslander, *The University of Alabama*, VP of Publications
Kristin Lesseig, *Washington State University Vancouver*, AMTE Board Liaison
Matt Chedister, *University of Wisconsin-LaCrosse*, Editor of Connections
Rose Mary Zbiek, *Pennsylvania State University*, Editor of Mathematics Teacher Educator
Andy Tyminski, *Clemson University*, AVP and Panel Chair of Mathematics Teacher Educator
Allison McCulloch, *University of North Carolina Charlotte*, Co-editor of CITE-Math

Learn about different options for publishing through AMTE, including Mathematics Teacher Educator, CITE-Math, Connections, and the Professional Book Series. Information will be shared on the expectations and audiences of each publishing opportunity and how they differ. All AMTE publications will be represented, and prospective authors can ask questions or pitch ideas to editors and other members of AMTE's publication leadership team. Prospective authors can also receive targeted feedback on the quality of their ideas and suitability for the various publications. An informational presentation will occur toward the beginning, and those with questions for specific editors can drop-in across the session.

Session 35
Practice-Based Experiences for Prospective or Practicing Teachers
Individual Session

Nevada 3

Elementary Mathematics Methods Course Redesign with School Partnerships: Cultivating Mentors and Authentic Practice Based Experiences

Jenna Menke, *Ball State University*
Andrew M. Gatza, *Ball State University*
Jonathan Watkins, *Ball State University*

Sam Prough, *Ball State University*
Kristi Martin, *Ball State University*
Jerry Woodward, *Ball State University*

Clinical practice is an integral component of mathematics education programs, but developing high-quality practicum experiences is challenging and time-consuming work. In this session, we will discuss the first three semesters of an elementary mathematics methods partnership project to develop more meaningful practice-based experiences for prospective teachers. This coordinated model of clinical practice involves partnering with local schools to provide professional development to mentor teachers that is closely aligned with our methods courses, collaborating with local teachers and administrators to develop high-quality practice-based experiences, and collaborating with colleagues across multiple sections of our course to plan practice-based experiences in authentic contexts.

Session 36

Nevada 4

AMTE

Sponsored Sessions - Gold Sponsor

The Math Learning Center

Using Freely Available Curriculum Materials to Prepare Elementary Teachers for Ambitious and Equitable Mathematics Teaching

Mike Wallus (Moderator), *The Math Learning Center*
Heather Gallivan, *University of Northern Iowa*
Andrea McCloskey, *The Pennsylvania State University*
Nicole Rigelman, *Portland State University*

Hear mathematics teacher educators share ways they use free access to the Bridges in Mathematics curriculum materials to support prospective and preservice teachers' course- and field-based learning. We will reference models supportive of conceptual understanding, examine varied student solution strategies, and share instructional practices shown to make a difference for student understanding and achievement. Together we will consider how curriculum materials can be leveraged to make progress toward the AMTE's Standards for the Preparation of Teachers of Mathematics (2017).

Session 37
Equity, Social Justice, and Mathematics Teacher Education
Report Session

Nevada 5

Culture, Equitable Mathematics Teaching, and the Development of Preservice Mathematics Teachers' Professional Vision

Uyiosa Osarumen Ugiagbe, *University of Georgia*

This report session explores culture, equitable mathematics teaching, and the development of preservice mathematics teachers' professional vision. Focusing on secondary preservice teachers, the study examines how their cultural backgrounds, experiences, and identities shape their perceptions of equitable mathematics instruction, particularly in the areas of algebra and geometry. Key insights from the study will be shared along with implications for preparing culturally responsive mathematics teachers and educators.

(In)Equity in Academia: Unpacking Wealth Disparities with Preservice Teachers

Claire Lambert, *Michigan State University*

The aim of this session is to demonstrate the impact that can come from teaching mathematics for social justice, an essential component of building students' agency, identity, and sociopolitical consciousness (Gutstein, 2007). The author uses their own lessons designed for preservice teachers surrounding wealth disparities in academia as a case study to promote the creation and implementation of social justice mathematics lessons that allow for collective thinking, learning, and action as part of broader efforts toward equitable mathematics education.

Session 38

Nevada 6

Practice-Based Experiences for Prospective or Practicing Teachers**Report Session*****Cultivating Mathematics Teacher Identity through Rehearsal-Based Methods Courses***Dionne Cross Francis, *University of North Carolina at Chapel Hill*Pavneet Kaur Bharaj*, *California State University Bakersfield*Boran Yu*, *University of North Carolina at Chapel Hill*Anna Gustavson*, *University of North Carolina at Chapel Hill*Kathryn Habib*, *University of North Carolina at Chapel Hill*

This study explored how participation in a rehearsal-based methods course influenced pre-service teachers' mathematics teacher identity development. Findings showed that identity shifts were statistically significant. Applying Carlone and Johnson's identity framework, we found that structured rehearsal practices bolstered PSTs' confidence in their mathematics knowledge (competence), their teaching of mathematics (performance), and also enhanced their self-perception as educators (recognition). Reflective engagement and practical experiences in teaching appeared to be important contributors to nurturing robust teaching identities. Further research could examine the long-term effects on career development.

Examining Two Approaches to Clinical Experiences in Teacher EducationMadelyn Colonnese, *University of North Carolina at Charlotte*Luke Reinke, *University of North Carolina at Charlotte*

In this session participants will learn about the perspectives of elementary PSTs and clinical educators who were involved in two different kinds of clinical experiences related to an elementary mathematics methods course. One clinical experience was a typical clinical experience, the PST selects a school and completes the clinical activities on their own; the other section features a mediated field experience, where the clinical experience is embedded within the structure of the course and the instructor is onsite. Findings have revealed different affordances and limitations of both approaches.

Session 39

Nevada 7

Professional Development and Coaching**Individual Session*****Developing Responsive Practice within Dilemmatic Spaces of Teaching: Perspectives for Teacher Educators***Karen Underwood*, *Vanderbilt University*Kyle Clayton Nolting*, *University of Denver*Yeliz Gunal Aggul*, *Bogazici University*Shuqin Li*, *Vanderbilt University, Hunan Normal University*Elizabeth Metts, *Vanderbilt University*

In this session, by collaboratively analyzing a teacher's dilemma as a case, we will examine how teachers express and make sense of their dilemmas in teacher education settings enriched with representations from their practice. From here, we will discuss strategies of supporting teachers' sensemaking and developing responsive practice within the complexities of teaching. Emphasizing that teachers' dilemmas are highly situated, we will brainstorm how a dilemma can show itself differently in contexts. To interrogate this, we will draw on the notion of dilemmatic space and invite participants to use it as a tool to support teacher learning through dilemmas.

Session 40

Crystal 2

Professional Development and Coaching**Individual Session*****Strengthening Mathematics and Special Education Co-teaching Partnerships Through a Shared Content Focused Professional Learning Academy***Bethany LaValley, *The University of Mississippi*Julie James, *The University of Mississippi*Alice Steimle*, *The University of Mississippi*

MathMATES is a yearlong professional development academy aimed at supporting general and special education coteacher partnerships through shared mathematics content development and relationship building exercises. We will share our experiences designing and revising this model and findings from the research study conducted with 4th-8th grade departmentalized mathematics coteaching teams. Participants will engage in a sample of activities from the academy and discuss the Coteaching PD Model that emerged from this study.

Session 41
Mathematics Pedagogy
Discussion Session

Crystal 3

Exploring Diagnostic Interviews as Tools to Integrate Specialized Mathematics Content and Pedagogical Content Knowledge

Bona Kang, *Ohio Wesleyan University*
Kristy Litster, *Valdosta State University*
Julien Corven, *Illinois State University*

Sara Kirschner, *University of Maryland College Park*
Jung Y. Colen*, *Bellarmino University*
Brooke Krejci*, *University of Wisconsin - River Falls*

This session will explore: 1) the affordances of various diagnostic interview assignment designs to support preservice teachers' specialized content and pedagogical knowledge; 2) how preservice teachers' analyses of diagnostic interviews reflected the intended goals of the assignments; 3) ways to support preservice teachers when implementing assignments that integrate content and pedagogy. Participants in this session will have opportunities to offer insights by sharing their own experiences with diagnostic interview assignments and brainstorming additional assignments that support preservice teachers' integrated learning of content and pedagogy in mathematics content and methods courses.

Session 42
Equity, Social Justice, and Mathematics Teacher Education
Report Session

Crystal 4

Preservice Teachers' Analysis of Math Tasks Embedded in the Rural United States

John Bragelman, *University of North Georgia*
Rebecca S Borowski*, *Western Washington University*

To prepare preservice teachers to create culturally accessible mathematics classrooms, mathematics teacher educators must support them in making connections between theory and practice. Critical examination of culture, its role in the mathematics classroom, and PTs own culture and experiences can be an entry point for this important work. In this brief report, we present findings from preservice teachers' analysis of the cultural relevance and cognitive demand of mathematics tasks embedded in the past and present cultures of their communities.

Session 43
AMTE Committee Session
Extended Session (1:15 – 2:45)

Crystal 5

Affiliate Connections Committee

Spotlight on Research to Action, Supporting all Affiliates

Torrey Kulow, *Portland State University*

A period for affiliates to come together to explore and exchange strategies for growing and maintaining membership, along with other affiliate activities. This encompasses both effective practices used by affiliates and research-backed methods from other disciplines, like organizational theory. We will identify necessary research efforts and provide opportunities for affiliates to collaborate on these research projects.

Session 44
Equity, Social Justice, and Mathematics Teacher Education
Discussion Session

Tahoe (Hyb/Reg)

Navigating equity dilemmas as a culturally responsive math teacher educator: A critical conversation

Julia Aguirre, *University of Washington Tacoma*
 Jennifer M Suh*, *George Mason University*

Elzena McVicar, *University of Washington Seattle*
 Erin Turner*, *University of Arizona*
 Mary Alice Carlson*, *Montana State University*

Culturally responsive mathematics teaching is a holistic and complex instructional practice that involves the development of critical consciousness to interrogate and innovate mathematics instruction to privilege mathematics, mathematical thinking, cultural and linguistic funds of knowledge, and issues of power and social justice in mathematics education. Limited research focuses on mathematics teacher educators' experiences navigating tensions when faced with equity focused dilemmas that arise in these professional learning spaces. Through scenario based activities, participants will critically discuss how power, positionality, context, and agency impacts decisions in the moment or in later interactions and possibly affect the integrity and sustainability of the work.

Session 45
Collaborations and Partnerships
Individual Session

Carson 1 (Hyb)

A Math and Science Educator Partnering for Authentic Integration for an Elementary STEAM Course

Colleen McLean Eddy, *University of North Texas*
 Sarah Losoya*, *University of North Texas*

This practice report highlights the collaboration dynamic between a faculty math educator and a doctoral science educator to authentically integrate the content for this elementary STEAM elective class committed to equity, diversity, and inclusion. Both instructors collaborated on the planning and teaching each week. The science educator joined remotely, and the math educator joined the class in person with the preservice teachers each week. The presentation will include details of the collaboration, the course goals, required texts, assignment progression, and sample activities and lessons.

Session 46
Mathematics Pedagogy
Individual Session

Carson 2 (Hyb)

You Really Will Use This: Identifying Aspects of Authenticity in Algebra Problems

Callie Angel, *Texas State University*
 Amy Lawrence-Wallquist, *Texas State University*
 Cody Patterson, *Texas State University*

Together, we will examine contextual algebra problems, discussing what teachers identify as authentic. Join us as we analyze tasks, using our conceptual framework, and discuss ways this could be further researched to become a tool for future mathematics educators.

Session 47
Practice-Based Experiences for Prospective or Practicing Teachers
Individual Session

Nevada 3

Supporting Teacher Candidates' in Developing their Professional Practice through Embedded Mediated Field Experiences

Esther Billings, *Grand Valley State University*
 Montana Smithey, *Georgia Southern University*
 Barbara Ann Swartz*, *West Chester University of Pennsylvania*

We present a practice-based teacher education model, building on existing research to promote shared language and key components important for TCs' learning in a designed setting (i.e., site-based methods course), what we call embedded Mediated Field Experiences (e-MFEs). Utilizing McDonald et al. 's (2013) learning cycle situated in K-12 classrooms, TCs engage in scaffolded and mediated experiences, enacting NCTM's (2014) effective teaching practices. We share findings from data collected across four institutions implementing the e-MFE model with 154 TCs spanning four years and the learning TCs identified as impactful as they engaged in iterative cycles of e-MFEs.

Session 48
Sponsored Session - Silver Sponsor

Nevada 4

The Maier Math Foundation

Exploring the Role of Teacher Decision-Making When Implementing High-Quality Instructional Materials Responsively

Corey Drake, Director of Professional Learning, *The Math Learning Center*
Nicole Rigelman, Education Program Officer, *The Math Learning Center*
Emily Saxton, Director of Research, *The Math Learning Center*
Mike Wallus, VP of Educator Support, *The Math Learning Center*

Explore what it means to use high-quality instructional materials (HQIM) to support instruction that is both ambitious and responsive to students' strengths, needs, and interests. We will examine HQIMs to identify teacher decision-making opportunities; contemplate moves and adaptations that teachers can make locally to leverage these decision-making opportunities; and discuss potential considerations and related trade-offs of the moves and adaptations.

Session 49
Equity, Social Justice, and Mathematics Teacher Education
Individual Session

Nevada 5

Food, Body, and Numbers: Identifying Anti Fatness in Word Problems

Alexandra Rene Aguilar*, *The University of Texas at Austin*
Carlos Nicolas Gómez Marchant, *The University of Texas at Austin*

Antifat bias is a systemic, oppressive force mathematics learners face every day, however it has rarely been present in discussions of equity in mathematics education. Searching NCTM practitioner publications, we found sentiments of anti fatness present in several suggested class activities. These sentiments most often appeared in activities relating to ratio and measurement, however we believe classrooms can push back on anti fatness in any content area incorporating mathematical modeling. In our presentation, we establish tools to help participants spot sentiments of anti fatness in their own classrooms and research as well as challenge larger narratives surrounding learners' bodies and health.

Session 50
AMTE
AMTE NTLI Award Winner

Nevada 6

Exploring Preservice Teachers' Adaptations of Artificial Intelligence Created Mathematics Curricula: Discovering Overconfidence

Amanda Gantt Sawyer, *James Madison University*
Marcus Wolfe*, *James Madison University*

Come learn about an investigation into preservice teachers' use of an Artificial Intelligence chatbot to create elementary mathematics resources. You will have the opportunity to become aware of preservice teachers' overconfidence in AI tools, explore counterexamples of AI's bias to show in mathematics methods courses, and learn how to support critical curation of AI-constructed mathematics curriculum.

Session 51
Practice-Based Experiences for Prospective or Practicing Teachers
Individual Session

Nevada 7

Using Hivemind Simulations to Help Novice and Experienced Teachers Increase Their Responsiveness to Student Thinking

Lindsay Thompson Goldsmith-Markey, *La Salle University*
Jennifer Lynn Valerio, *University of Pennsylvania*

Simulations, a kind of practice-based approach, are often used to help teachers develop proficiency in responding to emergent student thinking. These approaches give teachers an opportunity to try out responsive teaching moves in a low-risk setting before enacting them with students. "Hivemind" simulations help teachers learn to be responsive while facilitating students' productive struggle and eliciting and representing students' ideas. This session includes a live Hivemind simulation and video analysis as well as a description of qualitative findings about the benefits of Hivemind simulations. It is appropriate for teacher educators working with preservice and inservice teachers at all grade levels.

Session 52
Teaching and Learning with Technology
Individual Session

Crystal 2

Exploring the Impact of Instruction about Artificial Intelligence Use with Preservice Teachers

Katherine Ariemma Marin, *University of Louisville*
Natasha Gerstenschlager*, *Independent Researcher*

There are a growing number of educational tools powered by Artificial Intelligence (AI). For teachers to harness the power of these tools, they need to understand what they can do and how they work. In this session we will present data from an investigation conducted with preservice teachers (PSTs) about the AI tools that exist, how teachers and students use them, and ways in which AI tools can be leveraged in math class to support both the work of the teacher in executing the effective math teaching practices and the K–12 students in developing their conceptual understanding of mathematical topics.

Session 53
Professional Development and Coaching
Individual Session

Crystal 3

Supporting Data Literacy in the Mathematics Classroom through Data Visualizations

Emily Thrasher, *North Carolina State University University* Bruce Graham*, *North Carolina State University*
Hollylynn Lee*, *North Carolina State University University* Michelle Pace, *North Carolina State University*

This session explores a framework for supporting discourse on and sense-making of data visualizations. This framework draws on prior work understanding students' conceptions of reading graphs with a focus on humanizing the data within the visualization. Participants will discuss the opportunities for implementation in teacher education and materials to support classroom implementation will be shared.

Session 54
Equity, Social Justice, and Mathematics Teacher Education
Report Session

Crystal 4

EQUIPping Teachers to Use EQUIP: Attending to Participation Across K-12 Classrooms

Eva Thanheiser, *Portland State University*
Kathryn E. Roman, *Portland State University*
Sage Arthur Mitchell, *Portland State University*

We use EQUIP (a customizable observation tool for tracking patterns in student participation) as a professional development tool. K-12 teachers learn to set up and code with the tool to learn about their own classrooms. In the session we share the set up and the results of this work and engage in some collective coding. Participants will familiarize themselves with EQUIP and think about how they might use it in their professional development settings.

"I don't really use math anymore:" Fostering Positive Narratives about Mathematics for Historically Minoritized Learners

Ranza Veltri Torres, *University of Minnesota, Twin Cities*

In order to support mathematics teacher educators to engage with and take action on issues of social and racial justice, one key aspect we can turn to are the stories and lived experiences of historically minoritized mathematics learners as they choose to tell them. This study explores the mathematics narratives of an intimate group of community college students who have taken non credit bearing remedial mathematics coursework, as they describe their experiences learning math, their ideas about what math is, and their self perceptions as influenced by these experiences and ideas.



POSTER SESSION & REFRESHMENTS

SUMMIT PAVILION

Session 55

Join us for the 10th Annual AMTE Poster Session. The Poster Session is intended to facilitate sharing information and research through a visual display of material. This session allows an opportunity for informal discussions and interactions between the presenter(s) and the audience. Please note the set-up, viewing, and take-down times outlined below.



2:30 PM	Presenters set up posters
3:00 PM – 4:15 PM	Poster presentations
4:15 PM	Presenters remove posters

Refreshments are available in the Summit Pavilion. [Click here to access the menu.](#)

Session 55

Summit Pavilion

AMTE

Poster Sessions

P01. Collaborations for Preparing Elementary Preservice Teachers to Teach Mathematics to Students with DisabilitiesMonica Gonzalez, *East Carolina University*Bethany McKissick*, *East Carolina University*Bonnie Glass*, *East Carolina University*

Learn how faculty from mathematics education, science education, and special education at one university came together to co-plan and creatively co-teach methods courses for elementary education and special education majors. We used preservice teachers' survey data to inform the alignment between our courses and created shared materials to better prepare our preservice teachers to teach mathematics and science to students with disabilities. Preliminary data will be shared about the impact of this collaboration on our preservice teachers' knowledge of and dispositions towards teaching mathematics to students with disabilities.

P02. Developing Preservice Teachers' Formative Assessment Practices through Microteaching Lesson StudyCarolyn Mitten, *Westmont College*

This poster session will present the findings of a study that explored how the use of Microteaching Lesson Study in an elementary math methods course impacted preservice teachers' formative assessment practices during math instruction. As a result of attending this session, math teacher educators will leave with a greater understanding of how Microteaching Lesson Study might be integrated in an elementary math methods course and best practices for encouraging preservice teachers to reflect and apply what they learn from formative assessment across elementary math content areas.

P03. Development of Effective Mathematics Teaching Practices Among Preservice Teachers Enrolled in an Intensive Training ProgramMona Ibrahim, *Concordia College*Daniel Paul Biebighauser*, *Concordia College*Julia Walk*, *Concordia College*

• Setting: secondary, preservice teachers • Focus: understanding and applying effective mathematics teaching practices • Connected mathematical content: algebra, geometry, trigonometry • Key areas of insight or findings: effectiveness of training • Intended audience: content/methods course instructors

P04. Differences in Transparency Among the Mathematics Standards Revision ProcessAshley Schmidt, *University of Wisconsin-Milwaukee*Phi Nguyen, *University of Illinois Chicago*

Mathematics standards guide what is taught in classrooms across the United States, making the standards revision process a critical component for all education stakeholders. Nearly 60 revisions have been made to mathematics standards in various states since the creation of the Common Core State Standards for Mathematics. Each state offers varying levels of information regarding the standards revision process. Findings from a qualitative study that examined the differences among the standards revision process will be shared during this session.

P05. Early Career Mathematics Teachers' Reflections on Their Preparation for TeachingBetsy Berry, *Purdue University Fort Wayne*Matthew Melville*, *Purdue University Fort Wayne*

This poster session will include the design and findings of an interview study with 15 early career middle and high school teachers. Each of these teacher-participants had completed 1 to 5 years of teaching experience at the time of their interview. All were former students in the methods classes with the first author and were supervised by them during their semester of student teaching. The poster will highlight participants' undergraduate preparation for teaching including their field experiences, student teaching, and methods course content and their opinions about each of these and how they impacted their preparation for their own teaching.

P06. Embodied Learning of the Slope Intercept Formula: Agency in a Vygotskian Framework

Leah Metcalf, *The University of North Carolina at Chapel Hill*

Proposed herein is a retrospective self study related to pre-algebra teaching of a middle school learning specialist's experience teaching the slope intercept formula to two students with suspected dyscalculia. The focus of this paper is to relate student bids for agency during embodied learning processes to learning of the formulas, as framed via Vygotskian cultural, historical/sociocultural theory (Cong-Lem, 2022). The main finding of this study was that respecting students' agentic uses of embodiment heuristics, rather than planning the use of embodiments as curricular tools, related to equitable learning. Primarily educators, and secondarily scholars, are the intended audience for this study.

P07. Empowering Tomorrow's Teachers: Teaching Statistics for Social Justice

Jennifer L. Green*, *Michigan State University*

Maria Cruciani, *Michigan State University*

Claire Lambert, *Michigan State University*

We will discuss the creation and implementation of a two part social justice based lesson in statistics with preservice elementary teachers to provoke conversation surrounding the importance of using interdisciplinary and authentic contexts when teaching statistics for social justice. We will discuss student outcomes from this lesson, adapting authentic contexts to address standards in statistics, and the need for early and consistent engagement with statistics.

P08. Exploring the Integration of the Affective Domain in Secondary Mathematics Method Courses

Asenath Odoni, *Purdue University*

This study focuses on preparing preservice teachers to effectively address diverse student needs in mathematics. It targets secondary instructors and emphasizes shaping student identities, particularly in method courses through the integration of affect. The research sheds light on challenges like time constraints and inadequate training. Tailored for mathematics methods instructors and educators, the study underscores the importance of urgent professional development to nurture inclusive learning environments.

P09. Exploring the Relationship Between Mathematics and Play Through Mathematics Game Design

Amy Rae Johnson, *The University of Texas at Austin*

Alexandra Rene Aguilar*, *University of Texas at Austin*

Gerardo Sanchez Gutierrez*, *University of Texas at Austin*

In this poster presentation, we will share definitions of play and games from the perspective of three Latiné fifth graders and their perceptions of the relationship between mathematics and play. Additionally, we will explore some mathematics games the students created, and share issues of student access, agency, and joy in mathematics.

P10. Implementing an Elementary Mathematics Practice Teaching Experience Across Modalities

Karoline Smucker, *Eastern Oregon University*

This poster will showcase implementation and refinement of a practice based teaching experience for prospective elementary teachers taking the same mathematics methods course across cohorts with varying instructional modalities (online, hybrid, and in person). After an initial implementation with consistent assignment requirements, flexible options were provided in year two in order to meet the needs of each cohort while maintaining the same course objectives. This led to preservice teachers practicing their lessons in a variety of contexts. Analysis showed some similarities in their reflections on the experience, while they also differed in key ways.

P11. Influence of Pre-teaching on Students' Self-Efficacy in Mathematics

Angela Harris, *The University of Mississippi*

Pre-teaching, a proactive approach used to position learners needing additional support for success, is thought to increase students' achievement and confidence. In an effort to investigate pre-teaching as a potential strategy to offer equitable learning opportunities that increase students' self-efficacy in mathematics, this presentation shares findings from existing research as well as one teacher's implementation and success in the elementary mathematics classroom. Information is relevant to all mathematics stakeholders who are seeking ways to meet students' learning needs and grow their relationship with mathematics.

P12. Integrating STEM into Elementary School Preservice Teachers' Learning in a Mathematics Problem Solving Course

Marta T. Magiera, *Marquette University*

This poster presentation tells a story of providing prospective elementary and middle school teachers with first-hand experiences with STEM integration in the context of their mathematics problem solving course. The poster engages participants in discussing the design frameworks and instructional activities developed to support prospective teachers' knowledge and dispositions aligned with K-8 STEM education. It also shows how prospective teachers can build awareness of STEM-based practices and ways of thinking in the context of problem solving.

P13. Investigating the Interplay Between Preservice Mathematics Teaching Anxiety and Self Efficacy in Teaching Algebraic Equations

Comfort Temitope Aje, *Purdue University*

This research focuses on secondary preservice teachers and investigates how anxiety impacts their confidence and effectiveness in teaching algebraic concepts. Preliminary findings reveal that higher anxiety levels correlate with lower self-efficacy, leading to less effective teaching practices and reduced student engagement. The intended audience includes content and methods course instructors, and curriculum developers interested in enhancing mathematics teaching efficacy and reducing anxiety among preservice educators.

P14. Journey to Becoming: Stories of Early Career Middle School Mathematics Teachers

Orna Persis David, *North Carolina State University*

This poster features a qualitative study that was conducted with three middle school mathematics teachers who recently graduated from the same public university in the Southern United States. This study explored the mathematics teacher identity of the early career teachers and the factors that contributed to their teacher identity formation. Among the contributing factors to teacher identity formation are personal factors, their mathematics learning experiences, and professional experiences and relationships. The findings will be useful for mathematics teacher educators and mathematics school leaders.

P15. Learn about the AMTE STaR Program

Dorothy Y. White, *University of Georgia*
Jennifer A. Wolfe, *The University of Arizona*
Anthony Fernandes, *University of North Carolina Charlotte*
Belinda P. Edwards, *Kennesaw State University*

We invite you to come learn about the AMTE Service, Teaching, and Research (STaR) program. STaR is an early-career induction program for tenure-track faculty in the first or second year.

P16. Leveraging Generative Artificial Intelligence for Differentiated Algebra Lesson Plans

Maral Karimi*, *University of Central Florida*
Farshid Safi, *University of Central Florida*
Aline Abassian*, *University of Central Florida*
Luisa Placido*, *University of Central Florida*

This poster presents how secondary preservice teachers can leverage Generative Artificial Intelligence to enhance algebra lesson plans through differentiated learning. Investigating the principles of differentiated instruction across content, process, and products, the study emphasizes Generative Artificial Intelligence's role in fostering personalized learning experience. Through the lens of the "self regulated learning and self regulated teaching" framework, preservice teachers actively assess their interactions with Generative Artificial Intelligence, aiming to refine their instructional strategies. This research offers insights for content and methods course instructors and preservice teachers, facilitating effective and intentional integration of Generative Artificial Intelligence to support diverse learners in algebra classrooms.

P17. Micro Community Collaborations for Preservice Teachers

Laura Kyser Callis, *Curry College*

Finding authentic opportunities for preservice elementary and middle school teachers to engage with families can be challenging. This presentation shares two such activities. At a family mathematics night, four preservice teachers played and created take home mathematical games with children while their parents learned about the mathematics their children were learning in school. One preservice teacher worked with a professor to facilitate seven family coding nights at a local library. Preservice teachers learned about students' and parents' STEM thinking, practiced engaging with families, and witnessed events that can increase caregivers' abilities to explore mathematics outside of the classroom.

P18. Number Talks: Examining Teachers' Usage of Number Talks to Address Fraction Misconceptions

Nipah Onkananuwonk, *Texas A&M University*

Number Talks aid teachers in reinforcing students' understanding of fractions and relational thinking, tackling common mathematical errors. We'll discuss these errors, how teachers interact with multiple students, and debugging errors. The data shared are from three Number Talks.

P19. Preservice Teachers Developing Self-Efficacy for STEM Teaching with Online Technologies through Practice-Based Experiences

Maria L. Fernandez, *Florida International University*

Thirty-two secondary PSTs' learning to teach with online technologies and development of self-efficacy during a technology-focused, initial methods of teaching mathematics and science course will be discussed. Data sources for the investigation included pre- and post- surveys on PSTs self-efficacy for teaching with online technologies and a survey on the PSTs perceptions of the practice-based experiences.

P20. Problem Posing as a Tool for Assessing Preservice Secondary Teachers' Mathematical Knowledge in Teaching Algebra

Comfort Temitope Aje, *Purdue University*

Problem-posing fosters creativity in students by creating new and redesigning existing mathematical problems. The purpose of the study is to investigate the effectiveness of problem-posing as an assessment tool for evaluating preservice secondary teachers' mathematical knowledge in algebra, focusing on their problem-posing skills, and offering insights to enhance assessment practices in algebra instruction.

P21. Scaffolding Preservice Teachers' Skill of Mathematically Based Pedagogical Response in the Content Course

Burcu Alapala, *University of Wisconsin - Madison*

This study aimed to enhance elementary preservice teachers' development in their capacity to craft evidence-based responses to children's mathematical thinking in tandem with developing their mathematical knowledge for teaching. This qualitative case study consisted of a teaching experiment in a semester-long mathematics content course covered cardinality, arithmetic operations and place-value understanding, number theory, and integers. This study contributes to a knowledge base on the high-quality preparation of mathematics teachers by sharing possible opportunities in the content courses that the mathematics teacher educators could benefit to prepare for future mathematics teachers.

P22. STEM Teaching with Embedded Primary Sources: A Cross-Curricular Professional Development for K-12 STEM Educators

Bethany LaValley, *The University of Mississippi*

The STEPS project explored K-12 science, technology, engineering, and mathematics educators' experiences finding, evaluating, and incorporating primary source materials into classroom instruction after participating in a cross-curricular professional development workshop designed to promote the use of primary sources in STEM courses. We will discuss the design of the workshop and findings related to teacher outcomes.

P23. Sun, Similarity and Dynamic Multiplication to Promote Mathematical Engagement

Eric Pandiscio, *University of Maine*

This poster reports on the design, construction and mathematical affordances of a manipulative that engages learners using the natural environment. The interactive device encourages all learners, including those for whom didactic instruction has not been effective, to explore foundational concepts of multiplication before algorithms are necessary. Young learners can use the SunRule to investigate the continuous nature of multiplication, and discover that multiplication can be seen as a scaling operation. Pilot data with K-6 preservice teachers provides evidence the SunRule offers insights about the connections between multiplication of integers and fractions, and the relationship of these to ratio and proportion.

P24. Trying Something New: Mathematics Teacher Educators' Experiences Providing Video Feedback

Elyssa Stoddard, *State University of New York at Oneonta*
Stacey C. Zimmerman, *Western Carolina University*

The work of mathematics teacher educators includes providing feedback to students. While crucial, this task is often time-consuming and unclear in its effectiveness. Nevertheless, driven by our commitment to students, we continuously seek ways to improve our instruction and student interactions. A collective effort involving four mathematics teacher educators from different universities was initiated to explore the impact of video feedback on our students and our own practices. In this poster, we share which assignments we chose and how they were selected. Strategies for providing video feedback and how study findings impacted our practice moving forward will also be shared.

P25. Understanding the Impact of a Methods Course on Preservice Mathematics Teachers Beliefs about Mathematics Teaching

Aaron Ideus, *North Carolina State University*

This poster presentation will share results from the examination of secondary preservice mathematics teachers' beliefs about mathematics instruction at the beginning of a mathematics methods course and how those beliefs were changed as a result of the course. Preservice teachers' written reflections on what they believe mathematics instruction should look like were analyzed for content (e.g., teachers' role or classroom environment) and to understand where their beliefs fell on a teacher centered to student centered continuum. Information about the study's unique approach and results will be shared.

P26. Understanding the Role of Culture in Mathematics Teachers' Decision Making: Implications for Instructional Practice

Ngutor Tembe, *University of Georgia*.

In this session, attendees will engage in conversations about in-service mathematics teachers' decision-making in their instructional practice. The Focus will be on exploring an extended framework of Schoenfeld's (2011) theory of goal-oriented decision-making, which addresses the potential role culture plays on mathematics teachers' decision-making in instructional practice. This session will also examine whether teachers' decision-making during planning for instruction and after instruction is in the moment or not.

P27. Using the Flipped Classroom Model to Teach Multilingual and Multicultural Learners High School Algebra

Jernita Melanie Randolph-Bean, *University of Georgia*

This qualitative study explores using the Flipped Classroom Model to teach mathematics to multilingual learners in a secondary algebra setting. By analyzing how students utilize content videos in their native language, it aims to enhance inclusivity and engagement in mathematics education. The findings offer insights into designing flipped instruction, including multimodal activities to deepen conceptual understanding. Preliminary results show students value teacher-created videos, indicating a preference for explanations in their native language. This research contributes methods for scaffolding and differentiating lessons, crucial for diverse classrooms, ultimately fostering a more accessible mathematics education environment.

A/MTE

JUDITH E. JACOBS LECTURE**TAHOE (HYBRID)****Navigating Oz: My Journey with Three Essential Companions***Dorothy Y. White, University of Georgia*

For many, the road to a career as a mathematics teacher educator is clearly paved and the journey is exciting and welcoming. For others, the path is rocky and the journey is confusing, scary, and lonely. Using The Wiz and the Wizard of Oz as metaphors, I share how my journey began with a commitment to equity in mathematics, the triumphs and challenges along the way, and the importance of traveling with my three companions. I end the presentation with paths the field must travel to unveil racism in our current educational landscape and how intellect, compassion, and courage will be necessary to reimagine a more humanizing and just mathematics education for every student, preservice teacher, classroom teacher, mathematics educator, and researcher.



A/MTE

RECEPTION FOR GRADUATE STUDENTS & EARLY CAREER FACULTY**Lex Nightclub**

Graduate Students and early career faculty in their first three years are invited to join the AMTE Board of Directors and leadership at the Lex Nightclub on the Casino Level near the North Entrance for a reception. Refreshments will be served.

[Click here to access the menu.](#)

**BREAKFAST & AFFILIATE MEETINGS****SUMMIT PAVILION**

Tables will be designated for AMTE Affiliate groups to meet during Friday morning's breakfast.

[Click here to access the menu.](#)

[AMTE Affiliate Directory](#)

[Illinois Mathematics Teacher Educators \(IMTE\)](#)
[Utah Association of Mathematics Teacher Educators \(UAMTE\)](#)
[Florida Association of Mathematics Teacher Educators \(FAMTE\)](#)
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[Pennsylvania Association of Mathematics Teacher Educators \(PAMTE\)](#)
[Association of Mathematics Teacher Educators of Connecticut \(AMTEC\)](#)
[Georgia Association of Mathematics Teacher Educators \(GAMTE\)](#)
[Tennessee Association of Mathematics Teacher Educators \(TAMTE\)](#)
[New Jersey Association of Mathematics Teacher Educators \(NJAMTE\)](#)
[Mississippi Association of Mathematics Teacher Educators \(MAMTE\)](#)
[Association of Mathematics Teacher Educators of Alabama \(AMTEA\)](#)
[Teachers of Teachers of Mathematics, Oregon \(TOTOM\)](#)
[Missouri Mathematics Association for Advancement of Teacher Training \(\(MAT\)^2\)](#)
[Association of Mathematics Teacher Educators in Texas \(AMTE-Tx\)](#)
[Iowa Association of Mathematics Teacher Educators \(IOWA AMTE\)](#)
[Association of Maryland Mathematics Teacher Educators \(AMMTE\)](#)
[Hoosier Association of Mathematics Teacher Educators \(HAMTE\)](#)
[Association of Mathematics Teacher Educators of North Carolina \(AMTE-NC\)](#)
[Michigan Association of Mathematics Teacher Educators \(MI-AMTE\)](#)
[Wisconsin Association of Mathematics Teacher Educators \(WI-AMTE\)](#)
[Virginia Association of Mathematics Teacher Educators \(VA-AMTE\)](#)
[Kentucky Association of Mathematics Teacher Educators \(KAMTE\)](#)
[New York State Association of Mathematics Teacher Educators \(NYSAMTE\)](#)
[Nevada Association of Mathematics Teacher Educators \(AMTE-NV\)](#)

OVERVIEW OF FRIDAY MORNING, FEBRUARY 7, 2025

	8:15 AM - 9:15 AM	9:30 AM - 10:30 AM	10:45 AM - 11:45 AM
Tahoe (Hybrid)	57. President Exchange - K-12 and Higher Education Partnerships as a Catalyst to Improve Mathematics and Teacher Education – Hulburt, Arrington, Galindo	73. AMTE Award Winner - Equitable Teaching Practices: Critical Statistical Literacy Habits of Minds - Bailey	88. AMTE Award Winner - Ethnomathematics Focused Mathematical Modeling Tasks to Broaden Preservice Teachers’ Perceptions of Teaching and Learning Mathematics - Soni
Carson 1 (Hybrid)	58. <i>Hybrid Reports</i> - Kudaisi & Leonas-Cabrera*; Anderson & Uhing*; Brown, Auslander, & Fuentes	74. <i>Hybrid Reports</i> - DeFino, Cudd & Salem; Ozturk; Jakopovic & Anderson	89. <i>Hybrid Reports</i> - Sun & Stoehr*; Dyess, Sun & Slate*; Jakopovic & Johnson*
Carson 2 (Hybrid)	59. <i>Implementing Universal Design for Learning in Mathematics Education Courses</i> - Powers & Sparks*	75. <i>Developing in Classroom Discussion Facilitation: A Trajectory of Changing Teacher Practice</i> - Prough, Memmolo, Wilhelm* & Gibbons*	90. <i>Leveraging Asset Based Language and Routines in Mathematics Teacher Education</i> - Steele & Honey*
Carson 3	60. <i>Places and Spaces: Utilizing Informal Learning Spaces to Support Preservice Teachers in Designing Mathematical Tasks (Extended Session 8:15-9:45)</i> - Apraiz, Moghtader Eslami, Bashirah & Soto		91. <i>Community Listening Session for the Writers of The Mathematical Education of Teachers III</i> - Strutchens, Martin, Patterson, Jackson & Rigelman
Carson 4	61. <i>Explore the Role of Scripting as a Component of an Instructional Activity Sequence</i> - Byers & Kastberg	76. <i>Community Through Their Eyes: Student Led Insights On Community</i> - Roman & Lebovitz*	92. <i>Assigning Competence: How to Decompose the Practice for the Purpose of Teaching to Preservice Teachers</i> - Wilkes II & DeFino
Nevada 1	62. <i>Building a Sustainable State-wide Community for Mathematics Specialists: Strategies, Challenges, and Collaborative Solutions</i> - Larsen, McCormick & Jorgensen	77. <i>AMTE’s New Elementary Mathematics Specialist Guidelines: Exploration and Dialogue around Advocacy and Implementation</i> - Swars, Rigelman & Johnson	93. <i>A Collaborative Discussion of Culturally Relevant Pedagogy Practices in Elementary and Secondary Mathematics Methods Courses</i> - Howell & Wald
Nevada 2	63. <i>Supporting Multilingual Learners: Amplifying Student Lived Experiences for Authentic Mathematics Lessons</i> - Virmani & McNamara	78. <i>Challenges of Facilitating Productive Teacher Learning in Antibias Mathematics Professional Development: Implications for Equity Focused Instruction</i> - Elliott* & Jones	94. <i>Translenguando Matematicxs: Intertwining Language and Math towards Justice Oriented Pedagogies</i> - Zuniga Ruiz, Ribay* & Zuno*
Nevada 3	64. <i>Therapeutic Play as a Form of Mathematical Healing for Teachers and Students</i> - Johnson, Gómez Marchant & Sanchez Gutierrez*	79. <i>MTEs’ use of Practices for Designing Mathematics Tasks with Social and Political Issue</i> - Han	95. <i>Encouraging Prospective Mathematics Teachers’ Curricular Agency</i> - Lischka, Kastberg & Hillman
Nevada 4	65. <i>Using Discussion Protocols to Enhance Pedagogically Productive Talk about Classroom Video</i> - Baldinger, Munson*, Hoffmann*, Topham*, Kasahara* & Larison*	80. <i>Nudging instructional practices in secondary mathematics: What suggestions are teachers taking up?</i> - Candela, Otten & de Araujo*	96. <i>Critiquing a Robotics Integrated Mathematics Task Evaluation Tool in Elementary and Middle Grades</i> - Moldavan & Casler-Failing
Nevada 5	66. <i>Equity, Social Justice and Mathematics Teacher Education Reports</i> - Morton, Barces* & Holmes*; Brown	81. <i>Equity, Social Justice, and Mathematics Teachers Education Reports</i> - Sutcliffe, Bratsch-Hines*, Jung, Zhang* & Zhu*; Ugiagbe, Cannon, Kulp* & O’Brien	97. <i>Equity, Social Justice, and Mathematics Teacher Education Reports</i> - Jessup*, Willey & Jacobson*; Bragelman, Rupe* & Borowski*

	8:15 AM - 9:15 AM	9:30 AM - 10:30 AM	10:45 AM - 11:45 AM
Nevada 6	67. <i>Teaching Culturally Relevant Education Without Hip Hop? "You're Blind, Baby! You're Blind from the Facts!"</i> - Overton	82. AMTE Equity Committee - Moving Forward: Working to Humanize Spaces within AMTE - Raygoza, Orr, Soni & King	98. <i>Professional Development and Coaching Reports</i> - Memmolo; Matranga, Meehan* & Silverman*
Nevada 7	68. <i>Codesigning a Practical Measure Towards Understanding Students' Developing Mathematical Identities</i> - Mendez & Rodriguez*	83. <i>Fostering Reflective Practices Among Mathematics Teacher Educators: A Humanizing Feedback Approach</i> - White & Wolfe	99. <i>Emergent Coach Learning Activities Developed through a Statewide Community of Coaches</i> - Knapp & Elliott*
Crystal 2	69. <i>Planning for Connection and Action to Support Critical Literacy and Agency in ECEE Mathematics Education</i> - Koestler, Robinson* & Felton-Koestler*	84. <i>A Hypothetical Learning Trajectory for Preservice Elementary Teachers' Learning of Hierarchical Geometric Discourse</i> - Whitacre, Kamaldar & Caro-Rora*	100. <i>Learning from Alan Bishop: Drawing on Culturally Responsive Pedagogies to Disrupt Western Mathematics</i> - Nolan & Keazer
Crystal 3		85. <i>Problematizing integrated arguments in integrated STEM</i> - Welji, Alibek*, Tembe, Bloodworth* & Conner	101. <i>What Aspects of Teachers' Curricular Reasoning Lead to Tensions in Their Curricular Decisions?</i> - Nielsen, Teuscher, Dingman & Bostic*
Crystal 4	71. <i>Increasing Preservice Teachers' Engagement with Others' Mathematical Thinking</i> - Cengiz-Phillips, Krebs & Rathouz	86. <i>Understanding Centers and Margins towards more Just Mathematical Possibilities</i> - Scott* & Zuniga Ruiz	102. <i>Power of Project Based Learning: Integrating social justice and data science in secondary mathematics teacher preparation</i> - Burch & Yoder
Crystal 5	72. <i>Co-Construction of Epistemic Authority Relationships in Early Elementary Mathematics</i> - Edelen	87. <i>Prospective Teachers' Licensure Portfolios: A statewide collaborative to promote critical self evaluation (and avoid edTPA)</i> - Weston & Emery	103. <i>Creating a Coherent Instructional System to Improve the Preparation of Preservice Elementary Teachers</i> - Woodward, Stump* & Watkins

Session 57

Tahoe (Hyb/Reg)

AMTE**President Exchange*****K-12 and Higher Education Partnerships as a Catalyst to Improve Mathematics and Teacher Education***George Hulburt, *American Mathematical Association of Two-Year Colleges*Katey Arrington, *National Council of Supervisors of Mathematics*Enrique Galindo, *AMTE*

Many kinds of partnerships are critical for the improvement of the teaching and learning of mathematics. Interested parties need to include K-12 teachers and leaders, district leaders in K-12 settings, mathematicians, and mathematics teacher educators in both 2-year and 4-year colleges. This presidential panel will explore different aspects of productive partnerships including ways in which partnerships can be established and developed, ways in which partnerships can help strengthen pathways to teaching, and ways in which partnerships can support the development of teaching and learning practices for teachers, teacher leaders, and mathematics teacher educators. Organizational presidents from AMATYC, NCSM, and AMTE will be the speakers on the panel.

Session 58

Carson 1 (Hyb)

Hybrid Report Session***Collaborations and Partnerships******A Design Research-Practice Partnership: The Impacts of a Mathematics-driven Summer Program on Middle School Students' Outcomes***Queshonda Juanieka Kudaisi, *University of North Texas*Michael J Leonas-Cabrera*, *University of North Texas*

In this session, we share experiences of a research-practice partnership seeking to increase participation in STEM among underrepresented students through a mathematics-driven school and university-based summer program focused on STEM for societal impact. The summer program was designed such that there was an intentional focus on increasing students' mathematics identity, interest in environmental issues, and interest in STEM career pathways. We report on the impacts of the program on middle school students and on the aspects of the programs that afforded or constrained the program's intended outcomes. We will conclude with implications for the next iteration of the program.

Mathematics Content and Curriculum***Compassion and Capital: Modeling Pedagogical Empathy to Increase Preservice Teachers' Mathematics Capital***Frances Anderson, *University of Nebraska at Omaha*Karina Uhing*, *University of Nebraska at Omaha*

In this report, we connect the theories of pedagogical empathy and mathematics capital to provide a new avenue of research and practice that can explain differences between individuals who have had varying levels of success in mathematics. Data was collected from an elementary mathematics methods course at a metropolitan university campus where pre-service teachers of mathematics (PTMs) had predominantly negative feelings towards mathematics. Preliminary analysis of end of course reflections show how pedagogical empathy helped develop these PTMs mathematics capital through PTMs developing a positive disposition towards mathematics.

Development of Mathematics Teacher Educators***The Evolving Work and Intended Influences of Novice Elementary Mathematics Specialists***Karie C. Brown, *Georgia State University*Susan Swars Auslander, *The University of Alabama*Debra Fuentes, *Georgia State University*

This session explores findings from a holistic singular-case study of evolving teacher leadership of 26 Elementary Mathematics Specialists (EMSs). Data were collected over 3 years of a 5-year professional development program as participants developed as informal teacher leaders. As the EMSs sought to support multiple audiences, they reported becoming more comfortable with their teacher leader roles; being increasingly positioned as experts; advocating for students and instructional change; and positioning other teachers as leaders. The presentation will include models of quantitative data showing prevalence, variability, audiences, and shifts in teacher leadership and explore nuances of this work.

Session 59
Mathematics Pedagogy
Individual Session

Carson 2 (Hyb)

Implementing Universal Design for Learning in Mathematics Education Courses

Robert Powers, *University of Northern Colorado*
Sarah Sparks*, *University of Northern Colorado*

Universal Design for Learning (UDL) is one way to promote effective and equitable mathematics teaching practices. This session shares our adaptation of UDL Math (Lambert, 2021) and how we use engagement, representation, and strategic action in methods courses.

Session 60
Practice-Based Experiences for Prospective or Practicing Teachers
Extended Session (8:15 – 9:45)

Carson 3

Places and Spaces: Utilizing Informal Learning Spaces to Support Preservice Teachers in Designing Mathematical Tasks

Kristen Apraiz, *University of Florida*
Sheida Moghtader Eslami, *University of Florida*

Ri Ayat Ainul Bashirah, *University of Florida*
Melissa M. Soto, *University of Florida*

Come join us in exploring mathematics outside! We will explore informal settings that offer rich artistic and natural environments, such as outside the conference center and its surrounding area. Using these spaces as inspiration, Mathematics Teacher Educators will design tasks, reflect, and discuss facilitating similar mathematical tasks with K-8 preservice teachers (PSTs). Participant goals are to actively engage in problem-solving with tasks situated in informal settings; to reflect on and consider ways to effectively utilize these experiences in their own teaching practice with PSTs; and to support PSTs in designing cognitively demanding tasks connected to children's places and spaces.

Session 61
Development of Mathematics Teacher Educators
Discussion Session

Carson 4

Explore the Role of Scripting as a Component of an Instructional Activity Sequence

Jelena Byers, *Purdue University*
Signe Kastberg, *Purdue University*

Mathematics Teacher Educators provide preservice teachers in methods courses opportunities to participate in sequenced instructional activities including representations and approximations of practice. In this discussion session participants will consider and discuss uses of scripting as a component in a sequence of instructional activities within their own methods courses.

Session 62
Development of Mathematics Teacher Educators
Discussion Session

Nevada 1

Building a Sustainable State-wide Community for Mathematics Specialists: Strategies, Challenges, and Collaborative Solutions

Shannon Larsen, *University of Maine at Farmington*
Kelly McCormick, *University of Southern Maine*
Jenny Jorgensen, *University of Maine at Farmington*

Join us for an interactive discussion on building a self-sustaining, state-wide professional learning community (PLC) for mathematics specialists. We welcome mathematics specialists, those who work with them, and anyone interested in contributing their thoughts to this discussion. After sharing research and findings from past initiatives, we will engage in conversation about structuring a large-scale PLC for mathematics specialists. We invite you to share your experience and ideas to help us consider how to: design a PLC that honors participant interests, avoid potential barriers, develop partnerships, and support mathematics specialists in action research related to their learning.

Session 63
Equity, Social Justice, and Mathematics Teacher Education
Discussion Session

Nevada 2

Supporting Multilingual Learners: Amplifying Student Lived Experiences for Authentic Mathematics Lessons

Rajeev Virmani, *Sonoma State University*
Julie McNamara, *California State University East Bay*

This session explores the importance of student lived experiences and community assets. Emergent bilinguals bring a diverse array of cultural practices, linguistic capabilities, and familial knowledge, yet teacher preparation often overlooks these invaluable resources. The Biliteracy and Content Area Integrated Preparation (BCAIP) project, aims to bridge this gap by fostering a practice-based/justice-focused approach. Central to this project is the Community Exploration module, which empowers preservice teachers to engage deeply with students' communities and leverage their assets for instruction. Join us to discuss strategies for incorporating culturally responsive pedagogy and designing authentic, asset-based mathematical lessons that honor student lived experiences.

Session 64
Mathematics Pedagogy
Discussion Session

Nevada 3

Therapeutic Play as a Form of Mathematical Healing for Teachers and Students

Amy Rae Johnson, *The University of Texas at Austin*
Carlos Nicolas Gómez Marchant, *The University of Texas at Austin*
Gerardo Sanchez Gutierrez*, *The University of Texas at Austin*

The goal of this discussion session is to engage mathematics teacher educators in conversations about play, therapeutic play, and mathematical healing. Individuals attending this session will walk away with information about the importance of play and ways to incorporate ideas of therapeutic play into mathematics methods courses and consider ways in which therapeutic play can provide time and space for mathematical healing.

Session 65
Professional Development and Coaching
Discussion Session

Nevada 4

Using Discussion Protocols to Enhance Pedagogically Productive Talk about Classroom Video

Erin E. Baldinger, *University of Minnesota*
Jen Munson*, *Northwestern University*
Anna Hoffmann*, *Northwestern University*
Taylor Topham*, *Northwestern University*
Sophie Kasahara*, *University of Minnesota*
Sarah Larison*, *Northwestern University*

When teachers discuss video records of practice, their professional talk has the potential to create rich learning opportunities. To increase the likelihood of such pedagogically productive talk, teacher educators often use conversation protocols to scaffold discussions of video. We will share results from our analysis of 127 video discussions among secondary mathematics teachers who aimed to learn and implement more ambitious and equitable teaching approaches. We found that different parts of the discussion protocol elevated different features of pedagogically productive talk. In this session, we'll discuss the implications for designing effective discussion protocols and engage in shared (re)design.

Session 66
Equity Social Justice and Mathematics Teacher Education Report Session

Nevada 5

Elementary Preservice Teachers' Conceptions about Anti-Racist Mathematics Teaching

Karisma Morton, *University of North Texas*
Antonieta Barces*, *University of North Texas*
Zutella Holmes*, *University of North Texas*

We discuss findings from a research study guided by the following research question: What are elementary preservice teachers' conceptions about anti-racist math teaching? Using Martin's (2009a) conceptual framework, *Contrasting Approaches to Race in Mathematics Education Research, Policy, and Practice*, we find that the preservice teachers had conceptions about anti-racist math teaching that aligned with mainstream notions and others that aligned with racialized forms of experience. We hope to build on the knowledge base about PSTs' conceptions regarding race, racism, and mathematics teaching by investigating what PSTs describe anti-racist math teaching to entail and inform instruction in elementary math methods courses.

You're my resource! Teacher Role in the Mathematics Identity Development of Black Girls

Kyalamboka Brown, *Stanford University*

This qualitative study centers the voices of teenage Black girls and their recounts of mathematics related experiences since elementary school to examine the process in which their mathematics identities are constructed. The identity resource framework (Nasir & Cook, 2009) provides a lens through which to investigate how Black girls' use of resources, especially ideas and messages, in their environment to negotiate their mathematics identities. Findings suggest that mathematics teachers play a pivotal role in mathematics identity development by providing ideational resources that either support or constrain a positive mathematics identity. This study has implications for teacher preparation and professional development.

Session 67
Development of Mathematics Teacher Educators
Discussion Session

Nevada 6

Teaching Culturally Relevant Education Without Hip Hop? "You're Blind, Baby! You're Blind from the Facts!"

Kenya Overton, *University of Connecticut*

Black students face incalculable barriers to higher education participation. For decades, critical scholars have called for educational reforms that value the experiential knowledge and cultural perspectives of Black youth to teach them more effectively. This discussion session features a critical missing element when teaching future educators about Culturally Relevant Education, Hip-Hop Based Education (HHBE). Participants will interrogate their misconceptions about Hip Hop and leave with strategies for guiding teachers with incorporating Hip-Hop into mathematics lessons thereby eliminating some cultural and instructional barriers for Black learners. Secondary methods instructors, coaches, or department leaders may especially find this session helpful.

Session 68
Collaborations and Partnerships
Individual Session

Nevada 7

Codesigning a Practical Measure Towards Understanding Students' Developing Mathematical Identities

Jose Angel Mendez, *University of California, Irvine*
Lorenzo Rodriguez*, *Magnolia High School*

This session describes a partnership between a university researcher and an inservice high school mathematics teacher. We collaborated to design a practical measure that would allow us to gain better insight into students' developing mathematical identities. This work took place in two mathematics classrooms. One classroom consisted of multilingual, new arrival students, while the other consisted of students in an honors accelerated math course designed for 10th graders. Together, we spent considerable time understanding our shared commitments, engaged in multiple iterations of practical measures. The intended audience for this session includes math coaches, in service teachers, and teacher educators.

Session 69
Equity, Social Justice, and Mathematics Teacher Education, Individual Session

Crystal 2

Planning for Connection and Action to Support Critical Literacy and Agency in ECEE Mathematics Education

Courtney Koestler, *Ohio University*
Molly L. Robinson*, *Portland State University*
Mathew Felton-Koestler*, *Ohio University*

In this session we draw on our work teaching in elementary classrooms to examine “connection” and “action” in lesson planning as ways to create opportunities to support children’s and prospective teachers’ critical mathematics literacy and sense of agency in mathematics lessons. We will present our pilot study of prospective teachers’ understandings of connection and action, how they are able to use these constructs when planning tasks and lessons, and how they envision using them in their future practice.

Session 71
Mathematics Content and Curriculum
Individual Session

Crystal 4

Increasing Preservice Teachers’ Engagement with Others’ Mathematical Thinking

Nesrin Cengiz-Phillips, *University of Michigan-Dearborn*
Angela S. Krebs, *University of Michigan-Dearborn*
Margaret Rathouz, *University of Michigan-Dearborn*

In this interactive session, we aim to foster dialogue among teacher educators regarding the process of increasing PSTs engagement in their peers’ mathematical thinking. We will share the framework we used to organize and analyze shifts in PSTs’ level of engagement with others’ thinking in a content course. We will illustrate these transitions over the course of the semester with specific examples. Our goal is to offer a vision of what it entails for PSTs to demonstrate a high level of engagement in their peers’ thinking, particularly in the context of solving challenging mathematical problems.

Session 72
Mathematics Pedagogy
Individual Session

Crystal 5

Co-Construction of Epistemic Authority Relationships in Early Elementary Mathematics

Daniel Edelen, *Georgia State University*

In this session, we illuminate an authority relationship constructed between first grade students as they worked together during partner work time to complete assigned mathematical tasks. Using a microethnographic approach to discourse analysis, we demonstrate how authority was negotiated, refused, and made visible as an epistemic authority relationship. We trace one word, “help” to understand the languaging patterns of two first grade children. Discursive analysis reveals a new kind of authority relationship: epistemic authority. Implications for discourse analysis and authority research in early elementary spaces are provided.

Session 73
AMTE
AMTE Award Winner

Tahoe (Hyb/Reg)

Equitable Teaching Practices: Critical Statistical Literacy Habits of Minds

Nina G. Bailey, *Montclair State University*

This session will explore what the Critical Statistical Literacy Habits of Minds are, why they are essential for preservice teachers, and how they can be integrated into teacher preparation courses. Examples of preservice teacher enactment will be shared. The ultimate goal of the session is to consider how the Critical Statistical Literacy Habits of Minds can be leveraged as an equitable teaching practice. Participants will have time to generate and share ideas about how to include the Critical Statistical Literacy Habits of Minds into existing teacher preparation courses.

Session 74
Hybrid Report Session

Carson 1 (Hyb)

Equity, Social Justice, and Mathematics Teacher Education

“I like how...”: Examining Teacher Centric Praise in Acknowledging Students’ Mathematical Competence

Rosalie DeFino, *University of Wisconsin - La Crosse*
 Michele Cudd, *Morehead State University*
 Wesam M. Salem, *University of Memphis*

This presentation examines preservice teachers’ (PSTs’) attempts at acknowledging competence, an equity oriented practice closely related to assigning competence. By analyzing statements drafted by PSTs in response to a video of elementary students discussing a fraction task, the research identifies patterns in the use of teacher centric praise and raises questions about its effectiveness in repositioning students. Findings aim to inform mathematics teacher educators’ efforts in methods courses to prepare PSTs to acknowledge students’ competence and to cultivate equitable and empowering classroom environments. This research is particularly relevant for those engaged in developing research based practices for mathematics teacher education.

Equity, Social Justice, and Mathematics Teacher Education

Method Instructors’ Messages of Access and Equity in Their Syllabi

Ayse Ozturk, *Old Dominion University*

Our study extended access and equity studies in mathematics teacher preparation by focusing on the question of how elementary mathematics methods instructors communicate with their students about access and equity in their syllabi. We will present our preliminary findings including five developed themes and descriptions along with examples from the syllabi. Our presentation aims to encourage participants to critically consider how they can use syllabi in their own teacher education programs and to understand the importance of integrating discussions about equity, access, and teacher identity development in our syllabi.

Mathematics Education Policy and Program Issues

Retaining High Quality Secondary Mathematics Teachers through Learning Assistantships, Mentoring, and Communities of Practice

Paula Jakopovic, *University of Nebraska Omaha*
 Frances Anderson, *University of Nebraska at Omaha*

A critical component of mathematics teacher education is attracting, nurturing, and graduating high quality mathematics teachers. In this report, we share strategies for developing and retaining highly qualified secondary mathematics teachers through a partnership program between a university teacher education and mathematics department. Our participants engage in a three part professional learning experience: (1) learning assistantships in undergraduate math courses, (2) mentorship by mathematics faculty, and (3) participation in a peer and faculty community of practice. We will provide tangible steps attendees can take to adapt their own teacher preparation programs in response to AMTE’s call to action.

Session 75
Mathematics Pedagogy, Individual Session

Carson 2 (Hyb)

Developing in Classroom Discussion Facilitation: A Trajectory of Changing Teacher Practice

Sam Prough, *Ball State University*
Rebecca Memmolo, *University of Delaware*

Anne Garrison Wilhelm*, *Washington State University*
Lynsey Gibbons*, *University of Delaware*

Classroom discussion can support children to more meaningfully make sense of mathematical content (O'Connor & Snow, 2017). As mathematics teacher educators, we aim to understand what it looks like for teachers to develop teachers' discussion practices and the best ways to support them in that process. In this session, we draw on what we learned from our elementary teachers' classroom discussion practice and its shifts over three years. We plan to engage participants in understanding what shifts in practice can look like and how this can be used to support teacher educators in their ongoing work with teachers.

Session 76
Equity, Social Justice, and Mathematics Teacher Education
Discussion Session

Carson 4

Community Through Their Eyes: Student Led Insights On Community

Kathryn E. Roman, *Portland State University*
Andrew Lebovitz*, *Bethel School District*

In this presentation, we will describe students' conceptions of community and whether they believed community was built in a social justice high school math class. We plan to share the community builders we used and the results of the anonymous surveys (n = 5) given to the students. When comparing Survey 1 (n = 28) to Survey 5 (n = 24), more students felt comfortable speaking to their peers, and there was an increase in students believing the class was a community. Throughout the session, participants will engage in ways to build community in their classroom/educational context.

Session 77
AMTE Committee Sessions

Nevada 1

Elementary Mathematics Specialist Standards Task Force

AMTE's New Elementary Mathematics Specialist Guidelines: Exploration and Dialogue around Advocacy and Implementation

Susan Swars Auslander, *The University of Alabama*
Nicole René Rigelman, *Portland State University*
Nicholas C. Johnson, *San Diego State University*

Learn about AMTE's new Guidelines for Preparing and Supporting Elementary Mathematics Specialists (EMSs). Facilitated by the EMS Standards Task Force, explore the needed preparation and ongoing professional development for EMSs in their varying roles that support teacher and student learning. Discuss implications and needed advocacy for the specialized preparation, ongoing professional learning, and use of EMS professionals. While information about the guidelines will be shared, this session centers on interactive dialogue amongst attendees to exchange ideas around implementation of the guidelines and scaled-up use of EMSs at the classroom-, school-, district-levels, and beyond.

Session 78
Equity, Social Justice, and Mathematics Teacher Education
Discussion Session

Nevada 2

Challenges of Facilitating Productive Teacher Learning in Antibias Mathematics Professional Development: Implications for Equity Focused Instruction

Rebekah Elliott*, *Oregon State University*
Sarah Jane Jones, *Oregon State University*

This session examines the challenges of centering a lens of antibias mathematics in a K12 professional development (PD) project. We describe a design framework of connective and productive disciplinary engagement for discussion and analysis of a widely used PD activity, doing mathematics. Participants examine two episodes of doing math and consider (missed)opportunities for epistemic and culturally diverse ways of knowing and legitimating identities and histories as productive mathematical learning (Agrawal & Sengupta-Irving, 2019). Participants conclude by discussing the implications of this framework for designing and supporting equity focused mathematics instruction in PD and classrooms.

Session 79
Equity, Social Justice, and Mathematics Teacher Education
Individual Session

Nevada 3

MTEs' use of Practices for Designing Mathematics Tasks with Social and Political Issue

Simon Byeonguk Han, *Portland State University*

In this session, participants will learn about how core practices for designing MSPI (Mathematics with Social and Political Issues) tasks were used over the multiple planning sessions for the MSPI tasks. We will present our analysis of video and audio data from the planning sessions to a) Illustrate three core practices for designing MSPI tasks, b) Unpack how different core practices were utilized in different stages of designing MSPI tasks, c) Discuss how the three core practices for designing MSPI tasks can support mathematics teacher educators and teachers in developing MSPI tasks.

Session 80
Professional Development and Coaching
Discussion Session

Nevada 4

Nudging instructional practices in secondary mathematics: What suggestions are teachers taking up?

Amber Grace Candela, *University of Missouri - St. Louis*
Samuel Otten, *University of Missouri*
Zandra de Araujo*, *University of Florida*

We designed instructional suggestions (“nudges”) hypothesized to be easily implemented and have high uptake. In this interactive session we share what teachers in our professional development project actually took up and why, and how patterns of uptake can influence professional development design.

Session 81
Equity, Social Justice, and Mathematics Teacher Education Report Session

Nevada 5

Teachers as Learners: Exploring Middle School Educators' Reflections and Attitudes Through Social Justice Mathematical Modeling

Kayla Sutcliffe, *University of Florida*
Mary Bratsch-Hines*, *University of Florida*

Hyunyi Jung, *Texas A&M University*
Hong Zhang*, *University of Florida*
Hongze Zhu*, *University of Florida*

Through this study, middle school practicing teachers engaged in social justice mathematical modeling (SJMM) tasks as both teachers and learners in a three day Professional Learning Community (PLC) with the aim of implementing these methods within their classrooms. We explored teachers' SJMM task solutions and reflections using Gibbs' (1988) reflective cycle stages. Mathematics researchers may find it interesting that teachers naturally shifted between stages in their reflections, explaining their thought processes in a fluid and organic manner. Quantitative findings showed significant increases in teachers' perceptions of mathematical modeling after participating in the PLC.

Tools for Strong Equity: Disrupting Inequities in Mathematics Education

Uyiosa Osarumen Ugiagbe, *University of Georgia*
Susan Cannon, *University of Georgia*

Kelly Kulp*, *University of Georgia*
Katherine (Kate) Claire O'Brien*, *University of Manchester*

This session explores research based tools for disrupting inequities in K-12 mathematics classrooms and teacher education, focusing on the Cognitively Demanding and Culturally Relevant Task Rubric (CDCRTR), Levels of Classroom Discourse Rubric (LCDR), and EQUITY In Participation (EQUIP) app. Drawing on culturally responsive pedagogy, cognitively demanding tasks, and equitable discourse practices, these tools support teachers in critically examining and transforming their pedagogical practices across mathematics content areas. Our analysis suggests the tools can help scaffold more equitable and humanizing mathematics experiences. Mathematics Teacher Educators will discuss strategies for integrating these tools into preservice and inservice programs to advance strong equity.

Session 82
AMTE Committee Sessions

Nevada 6

Equity Committee

Moving Forward: Working to Humanize Spaces within AMTE

Barbara King, *Florida International University*
Mary Candace Raygoza, *Saint Mary's College of California*

Sheila Orr, *University of Tennessee-Knoxville*
Siddhi Soni, *Central Connecticut State University*

The Equity Committee seeks to engage AMTE members in a discussion about the future of a more humanizing AMTE and how we might get there. We will share results from a Fall 2024 survey designed to gather members' voices about the 2024 conference. Next, we will discuss the National Equity Project's Liberatory Design Model. Finally, we seek to hear from participants about how AMTE should use the model to determine how to conduct equity work, with whom, and toward what end. This session will serve as a springboard to work towards creating humanizing and inclusive spaces within AMTE.

Session 83
Development of Mathematics Teacher Educators
Individual Session

Nevada 7

Fostering Reflective Practices Among Mathematics Teacher Educators: A Humanizing Feedback Approach

Dorothy Y. White, *University of Georgia*
Jennifer Ann Wolfe, *The University of Arizona*

This interactive session introduces the "Tuning Protocol," an innovative approach to manuscript reviews for mathematics teacher educators. Rooted in our experiences as educators, mentors, and learners, and guided by anti-racist and anti-bias practices, this protocol rehumanizes feedback by emphasizing empathy, collaboration, and equity. Attendees will learn about the Tuning Protocol, apply the protocol to a writing sample while reflecting on their own positionalities, and discuss the potential implications for their own professional development and contexts.

Session 84
Mathematics Content and Curriculum
Individual Session

Crystal 2

A Hypothetical Learning Trajectory for Preservice Elementary Teachers' Learning of Hierarchical Geometric Discourse

Ian Whitacre, *Florida State University*
Azar Kamaldar, *Florida State University*
Domonique Lamar Caro-Rora*, *Florida State University*

We will present a hypothetical learning trajectory for preservice elementary teachers' learning of hierarchical geometric relationships. The commognitive framework (Sfard, 2007) informs our conceptualization of this topic, so that our focus is on change in the discourses of preservice teachers (PSTs). Based on data from multiple teaching experiments, we will present an instructional sequence and related shifts in PSTs' discourses, focusing on word use, visual mediators, and narratives. The overarching goal is to equip mathematics teacher educators to support PSTs' learning of this topic by reframing the problem in terms of discourses and from a fundamentally asset-based perspective.

Session 85
Mathematics Content and Curriculum
Individual Session

Crystal 3

Problematizing integrated arguments in integrated STEM

Shaffiq N. Welji, *University of Georgia*
Aida Alibek*, *University of Georgia*

Ngutor Tembe, *University of Georgia*
Anna Bloodworth*, *University of Georgia*
AnnaMarie Conner, *University of Georgia*

This session explores how the ideas within STEM settings are integrated in classrooms by analyzing how students and teachers make claims and support them in class discussions. Come discuss your ideas about STEM integration and explore how integration takes place in practice. We will introduce techniques to understand and analyze STEM integration and discuss the types of integration that we observed in a research study. We will also highlight the potential power of considering integration at the level of the argument and how it can provide deeper insight into how students experience STEM.

Session 86
Equity, Social Justice, and Mathematics Teacher Education
Individual Session

Crystal 4

Understanding Centers and Margins towards more Just Mathematical Possibilities

Mallika Scott*, *California State University Fullerton*

Sandra A Zuniga Ruiz, *San José State University*

This session will explore how conceptualizing margins and centers in elementary mathematics methods courses can help mathematics teacher education in two ways. First, understanding people’s experiences of margins and centers can help shed light on the complex experiences of prospective teachers as they seek to enact justice-oriented pedagogies. Second, they can be a resource to foster more expansive understandings of mathematics teaching and learning. We contend that this work is complex and dependent on context, thus critical reflection is necessary to grapple with margins and centers.

Session 87
Mathematics Education Policy and Program Issues
Individual Session

Crystal 5

Prospective Teachers’ Licensure Portfolios: A statewide collaborative to promote critical self evaluation (and avoid edTPA)

Tracy L. Weston, *Middlebury College*

Ellen Emery, *Champlain College*

This session will describe a Vermont teacher educator collaborative for state policy making that resulted in the development of a statewide Teacher Performance Assessment system for initial teacher licensure. Now in its tenth year, this performance-based portfolio system was designed to foster prospective teachers’ critical self-evaluation based on professional standards and literature, and act as a model for their future practice. Core components will be explained, annotated candidate products will be provided, and ideas to adapt for a campus or clinical assignment within any assessment system will be discussed.

Session 88
AMTE
AMTE Award Winner

Tahoe (Hyb/Reg)

Ethnomathematics Focused Mathematical Modeling Tasks to Broaden Preservice Teachers' Perceptions of Teaching and Learning Mathematics

Siddhi Soni, *Central Connecticut State University*

Through showcasing elementary and secondary preservice teachers work on ethnomathematics focused mathematical modeling tasks, we will discuss how ethnomodeling tasks can be used to develop and understand new insights into honoring and sustaining cultural systems and practices through examples that are grounded in a shared commitment to equity, empowerment, and dignity. We will spend some time engaging in various ethnomodeling tasks, to first-hand experience the value of engaging their students in such tasks to value and respect mathematical practices of diverse cultures and traditions as well as become more prepared to engage them in such mathematically rich and authentic tasks.

Session 89
Hybrid Report Session

Carson 1 (Hyb)

Professional Development and Coaching

In-the-moment coaching triads: Supporting mathematics teachers' leadership development

Kathy Sun, *Santa Clara University*
 Kathleen Stoehr*, *Santa Clara University*

This study examines how in the moment coaching triads consisting of a university coach, cooperating teacher (CT), and student teacher, supports CTs' experiences of teaching mathematics and developing as a teacher leader. We will give a brief overview of the structure of our in-the-moment coaching triad model and share findings related to how engagement in the in-the-moment coaching triad model shaped CTs' conceptions of what it means to effectively support secondary mathematics student teachers. This session will be relevant for MTEs interested in facilitating coaching triads and understanding how an in-the-moment coaching model supports CTs to grow as mathematics teacher leaders.

Mathematics Pedagogy

Measuring and Reflecting on Beliefs to Support Teaching Mathematics for Growth Mindset: A Reflection Activity

Sarah Roller Dyess, *The University of Alabama in Huntsville*
 Kathy Sun, *Santa Clara University*
 Erica Slate*, *Appalachian State University*

We share a reflection activity that supports teaching mathematics for growth mindset by engaging teachers in the various ways mindset messages can be communicated through mathematics instruction and identifying areas of strength and growth. The reflection activity consists of taking a survey, examining a visual representation of the individuals' survey responses, and completing prompts to promote teacher self-reflection related to teaching mathematics for growth mindset. We share findings related to preservice teachers' reflections. MTEs can use findings from the reflection activity to guide instruction in teacher preparation programs or professional development sessions related to teaching for growth mindset.

Practice Based Experiences for Prospective or Practicing Teachers

"You're a Person Who Knows How to Teach": Exploring Preservice Teacher Development Through Structured Reflection

Paula Jakopovic, *University of Nebraska Omaha*
 Kelly M Gomez Johnson*, *University of Nebraska at Omaha*

AMTE frames the critical need for preservice teachers to engage in effective opportunities to learn to teach mathematics that are embedded in practice-based experiences guided by master teachers. In this report we will share processes for creating structured reflective activities that can be embedded within a teacher preparation program to support and even accelerate this development. We will share examples of how structured reflection enhances preservice teachers' learning around deep mathematics understanding, effective teaching practices, and understanding of how students learn mathematics. We identify potential elements of this approach that attendees can adapt into their own practice and settings.

Session 90
Professional Development and Coaching
Individual Session

Carson 2 (Hyb)

Leveraging Asset Based Language and Routines in Mathematics Teacher Education

Mike Steele, *Ball State University*
Joleigh Honey*, *National Council of Teachers of Mathematics*

Asset based perspectives recognize that students bring significant strengths, talents, and resources to the mathematics classroom. Enacting asset-based pedagogical moves can be challenging, particularly when systems perpetuate deficit based views on students' mathematical learning. This session provides strategies for mathematics teacher educators to support the teachers with which they work in enacting asset based approaches to teaching. We examine these approaches at the level of language teachers use, classroom routines, and the systems in which our teachers are embedded.

Session 91
AMTE
Sponsored Sessions

Carson 3

Community Listening Session for the Writers of The Mathematical Education of Teachers III

Marilyn Elaine Strutchens, *Auburn University*
W Gary Martin, *Auburn University*

Cody Patterson, *Texas State University*
Christa Jackson*, *Saint Louis University*
Nicole René Rigelman, *Portland State University*

The writing team for the Mathematical Education of Teachers III (MET III) will share themes of the proposed book to garner feedback from the Association of Mathematics Teacher Educators' community. Slated for publication by the Conference Board of Mathematical Sciences in 2025, MET III will serve as a resource for those who teach mathematics and statistics to PK–12 preservice and inservice mathematics teachers. MET III will also be a resource for mathematics teacher educators, state departments of education, higher education administrators, and other interested entities.

Session 92
Equity, Social Justice, and Mathematics Teacher Education
Discussion Session

Carson 4

Assigning Competence: How to Decompose the Practice for the Purpose of Teaching to Preservice Teachers

Charles Wilkes II, *University of California, Davis*
Rosalie DeFino, *University of Wisconsin - La Crosse*

This session focuses on teaching the practice of assigning competence to preservice teachers. Assigning competence is an equity oriented practice that can support students' learning of mathematics content and development of positive mathematics identities. Through discussion with participants, we aim to develop ideas for a math specific decomposition of assigning competence. By decomposition, we mean breaking down the practice of assigning competence into component parts. During the session, we hope to improve upon a draft of a decomposition used in an elementary mathematics methods course. We welcome participants working at all grade levels. No previous experience with assigning competence is required.

Session 93
Collaborations and Partnerships
Discussion Session

Nevada 1

A Collaborative Discussion of Culturally Relevant Pedagogy Practices in Elementary and Secondary Mathematics Methods Courses

Jermaine R. Howell, *Michigan State University*
Samantha Wald, *Michigan State University*

This session will engage mathematics teacher educators in a collaborative discussion to develop and share pedagogical practices rooted in culturally relevant pedagogy used in elementary and secondary mathematics methods courses. During this collaborative discussion session, the presenters will (a) provide an overview of culturally relevant pedagogy and its application in mathematics education research; (b) research on culturally relevant pedagogy in elementary and secondary mathematics methods courses, (c) discuss pedagogical practices in their elementary and secondary mathematics methods courses; and (d) create collaborative group discussion with elementary and secondary mathematics teacher educators to discuss their pedagogical practices of culturally relevant pedagogy.

Session 94
Equity, Social Justice, and Mathematics Teacher Education
Individual Session

Nevada 2

Translenguando Matematicxs: Intertwining Language and Math towards Justice Oriented Pedagogies

Sandra A Zuniga Ruiz, *San José State University*
Kathryn Ribay*, *San José State University*
Daisy Alejandra Zuno*, *San José State University*

This session will explore how teacher educators can merge translanguaging and critical approaches to mathematics teaching and learning in their teacher education coursework. Through an exploration of dominant narratives, we can understand how these narratives are taken up into our work and move towards critical change in order to support preservice teachers to engage in more liberatory approaches to language and math learning. Through a community and relational approach, we aim to cultivate opportunities for teacher educators to center language and mathematical practices that honor people's full linguistic repertoire.

Session 95
Mathematics Pedagogy
Discussion Session

Nevada 3

Encouraging Prospective Mathematics Teachers' Curricular Agency

Alyson Lischka, *Middle Tennessee State University*
Signe Kastberg, *Purdue University*
Susan L Hillman, *Saginaw Valley State University*

This session builds on research of preservice teachers' (PTs') curricular reasoning to engage in discussion of instructional activities MTEs can use to support PTs' development of curricular agency. Curricular choices PTs encounter in schools are broad and accompanied by different levels of autonomy across school settings. Though curricular contexts may appear fixed and curricular autonomy constrained, teachers use curricular agency as they reason with and enact curriculum with learners. Goals for this session: 1) understand the complexity of MTEs' work encouraging PTs' curricular decision making and agency in diverse contexts, and 2) develop ideas for activities supporting PTs' curricular agency.

Session 96
Teaching and Learning with Technology
Discussion Session

Nevada 4

Critiquing a Robotics Integrated Mathematics Task Evaluation Tool in Elementary and Middle Grades

Alesia Mickle Moldavan, *Georgia Southern University*
Shelli L Casler-Failing, *Georgia Southern University*

This session addresses how robotics (i.e., Dash robots) can be integrated into elementary and middle-grade mathematics tasks to extend teachers' technological pedagogical content knowledge and enhance students' conceptual understanding. Participants will engage in a sample mathematics task and discuss how it can be assessed using an evaluation tool. Additional tasks will be shared to invite discussion about how such tools can be used to inform robotics integrated mathematics tasks to support mathematical reasoning and sense-making. Participants will be encouraged to share their critiques of the evaluation tool to improve the tool and prompt continued collaborative discussions.

Exploring How Social-Cultural Context and Identity Influence Teachers' Attributions of Mathematical Success

Naomi Jessup*, *Georgia State University*
Craig Willey, *Indiana University-Indianapolis*
Erik Jacobson*, *Indiana University*

This session explores how practicing teachers' sociocultural contexts and racialized identities shape their attributions of students' mathematical success. Two case studies of minoritized teachers are presented. One immigrant teacher from Colombia grappled with the salience of race in the U.S. and its impact on her attributions of success. The other, Asian U.S.-raised teacher acknowledged the centrality of race in her attributions of students' success. We highlight the role of teachers' backgrounds and racial awareness in their pedagogical approaches, offering implications for mathematics teacher educators and researchers interested in equity and the impact of teacher identity on mathematics instruction.

A Knowledge Analysis of Preservice Teachers' Conceptions of Culture in the Teaching and Learning of Mathematics

John Bragelman, *University of North Georgia*
Kathryn Mary Rupe*, *Western Washington University*
Rebecca S Borowski*, *Western Washington University*

One component of fostering well prepared beginning teachers is understanding how culture impacts the teaching and learning of. In our blended content and methods courses, we offer a series of learning experiences that develop elementary preservice teachers' understanding of culture, its role in the mathematics classroom, and ways they can foster learning environments that affirm the cultural and linguistic pluralities of their students. In this report, we present a knowledge analysis of three preservice teachers' development across the learning experiences.

Examining Elementary Teachers' Instructional Visions of Mathematics Classroom Discussion in Context

Rebecca Memmolo, *University of Delaware*

In this session, I will share insights from an analysis of how two elementary mathematics teachers made sense of classroom discussion practices as they engaged in professional learning over a period of three years. I report on shifts in their instructional visions, defined as their ideals for mathematics instruction, and aspects of their context which support or hinder the extent to which their visions for classroom discussion in mathematics were possible. Looking closely at teachers' instructional visions can support teacher educators to be responsive to teachers' learning needs as they make sense of new instructional practices, like classroom discussion.

Catalyzing Mathematics Teacher Engagement in Explorative Pedagogical Discourse with Noticing & Wondering

Anthony Matranga, *California State University San Marcos*
Sinead Meehan*, *Ball State University*
Jason Silverman*, *Drexel University*

We aimed to understand the impact of an online professional development (PD) centering Noticing and Wondering (N&W) and analysis of student work on mathematics teachers' pedagogical discourse. We interviewed 15 mathematics teachers after the first and third workshop of our PD and analyzed their pedagogical discourse. We found that participants exhibited productive shifts in their pedagogical discourse towards explorative pedagogical discourse – discourse coupled with ambitious instructional practices - when discussing experiences with or anticipated uses of N&W in their classroom. We present our findings, details regarding the PD design, and conjectures regarding PD features that impacted participants' pedagogical discourse.

Session 99
Professional Development and Coaching
Discussion Session

Nevada 7

Emergent Coach Learning Activities Developed through a Statewide Community of Coaches

Melinda C Knapp, *Oregon State University-Cascades*
Rebekah Elliott*, *Oregon State University*

This session explores innovative learning activities that supported 25 elementary mathematics coaches in developing a shared vision of ambitious, equitable instruction. The coach learning activities aimed to foster knowledge and skills for effective leadership in eliminating barriers to sustainable mathematics education. Participants will analyze coach challenges and reflect on how the activities contributed to solutions. The session highlights coaches' importance in ensuring equitable mathematics learning and presents promising activities for coach development, focusing on understanding coaches' conceptions of disrupting inequities and local challenges.

Session 100
Equity, Social Justice, and Mathematics Teacher Education
Individual Session

Crystal 2

Learning from Alan Bishop: Drawing on Culturally Responsive Pedagogies to Disrupt Western Mathematics

Kathleen T Nolan, *University of Regina*
Lindsay Keazer, *Sacred Heart University*

Building on the work of Bishop (1994), this session introduces a framework for use by mathematics teacher educators (MTEs) to unpack what it means to model and equip prospective and practicing teachers (PTs) to disrupt Western mathematics. AMTE standard C.4.4 on preparing PTs for disrupting systems of oppression aligns with an often-overlooked component of culturally relevant pedagogies (Ladson-Billings, 2014). This session will foster discussion among participants with the aim of helping MTEs of all levels to identify and select strategies for advancing CRP in their work with PTs in teacher education programs.

Session 101
Mathematics Content and Curriculum
Individual Session

Crystal 3

What Aspects of Teachers' Curricular Reasoning Lead to Tensions in Their Curricular Decisions?

Porter Nielsen, *Salem Hills High School*
Dawn Teuscher, *Brigham Young University*

Shannon Dingman, *University of Arkansas*
Jonathan David Bostic*, *Bowling Green State University*

As teachers make curricular decisions, they often must choose between different instructional options. Such choices may cause tension as teachers consider how these options will align with instructional goals and other factors. In this session, we will discuss the similarities and differences in instructional decisions that caused tension, examine the alignment between curricular reasoning aspects and the identified points of tension, and explore how teachers may productively navigate their tensions and foster growth opportunities. The intended audience for this session includes methods course instructors, coaches, and anyone who works with preservice or in-service teachers.

Session 102
Mathematics Content and Curriculum
Individual Session

Crystal 4

Power of Project Based Learning: Integrating social justice and data science in secondary mathematics teacher preparation

Lori J Burch, *Indiana University*
Gina Borgioli Yoder, *Indiana University, Indianapolis*

NCTM president Kevin Dykema (2024) challenged the mathematics education community to “work together... clearly defining what data science at the high school level should look like.” We explain how NCTM's call along with the book series *Mathematics Lessons to Explore, Understand, and Respond to Social Injustice* (Berry III et al., 2020; Conway IV et al., 2020) motivated us to design and engage prospective secondary mathematics teachers (PSMTs) in a project-based learning (PBL) curriculum unit. Participants will analyze our PBL curriculum and the products PSMTs created as well as hear testimonials from various stakeholders (i.e., instructor, PSMTs, PBL audience).

Session 103
Mathematics Education Policy and Program Issues
Individual Session

Crystal 5

Creating a Coherent Instructional System to Improve the Preparation of Preservice Elementary Teachers

Jerry Woodward, *Ball State University*
Sheryl Stump*, *Ball State University*
Jonathan Watkins, *Ball State University*

In this session, we will describe how we created, implemented, and examined our own process of establishing a system for improving the mathematical preparation of preservice elementary teachers. We will explain how we tailored the Coherent Instructional System framework (Cobb et al., 2018) to meet the specific needs of our situation and serve as a valuable tool in our course and program redesign efforts. The results of our research will be shared as we discuss the process of designing and maintaining our system for instructional improvement.

FRIDAY, FEBRUARY 7, 2025

11:45 PM - 1:15 PM



LUNCH & BUSINESS MEETING

SUMMIT PAVILION

Please join us for lunch, organizational updates, and official AMTE proceedings.

[Click here to access the menu.](#)



OVERVIEW OF FRIDAY AFTERNOON, FEBRUARY 7, 2025

	1:30 PM – 2:30 PM	2:45 PM – 3:45 PM
Tahoe (Hybrid)	104. <i>AMTE Award Winner - Mathematical Modeling as Humanizing Practices in Formal and Informal Learning Environments</i> - Jung	120. <i>Supporting Teachers' Development of Equity Oriented Practices in Clinical Experiences</i> - Kulow
Carson 1 (Hybrid)	105. <i>Hybrid Reports</i> - Naresh & Yilmaz*; Perk & Manley*; Burrill	121. <i>Infusing Advocacy Projects to Strengthen Mathematics Teacher Education Across the Continuum</i> - Bay-Williams, Marin & Morris*
Carson 2 (Hybrid)	106. <i>Navigating the Uneven Landscape of Early Childhood Mathematics Education Programs</i> - MacDonald, Brown, Ward & Zhang	
Carson 3	107. <i>AMTE Task Force - Get the Facts Out: Spice Up and Personalize Your Math Teacher Recruitment Materials</i> - Waddell Jr & Dyess	190. <i>NSF Information Session - Programs and Opportunities for Mathematics Teacher Educators at the National Science Foundation</i> - Waller, Hjalmarso, Shields
Carson 4	108. <i>Art into Action: Queer and Queer Allied Mathematics Teacher Educators Coming Together in Creation</i> - Garner*, Whipple & Lee-Hassan	122. <i>Promoting Equity and Inclusion in Mathematics P-20 classrooms through the use of Integrated STEM Practices</i> - Mohr-Schroeder, Jackson*, Bush, Roberts*, Maiorca, Ivy*, Burton & Schroeder*
Nevada 1	109. <i>Integrating Problem-Based Instruction in Secondary Mathematics Classrooms</i> - Polojac-Chenoweth & Ferguson	123. <i>Exploring the Intersection of Black Language Identity and Teacher Identity for Black Mathematics Teachers</i> - Hoyes Jr. & Rivera*
Nevada 2	110. <i>Implementing a Practice Based Instructional Framework in Mathematics Teacher Education: Lessons from Program-Level Implementation</i> - Johanson, Guerrero & Fuller	124. <i>Students' Perspectives on Equitable Teaching Practices</i> - Litke, Wilson*, Akridge, Leshin & Varlack*
Nevada 3	111. <i>Supporting Prospective and Practicing Teachers through a Shared Leadership Model Leveraging a NIC Structure</i> - Safi, Abassian*, Bush, Placido* & Karimi*	125. <i>CMP's STEM Problems: A Powerful Equity and Mathematics Resource for Teacher Educators</i> - Edson, Phillips* & Slanger-Grant
Nevada 4	112. <i>Successes, Struggles, and Solutions in Teaching Synchronous Online Mathematics Education Courses</i> - Wiest & Lamberg	126. <i>Integrating Physical Activity into the Mathematics Classroom</i> - Lindt & Miller*
Nevada 5	113. <i>Equity, Social Justice and Mathematics Teacher Education Reports</i> - Overton; Smith	127. <i>Mathematics Content and Curriculum Reports</i> - DiNapoli; Sanders, Gooden, Kwok*, Rodriguez* & Parker
Nevada 6	114. <i>Professional Development and Coaching Reports</i> - Amador, Kruger, Ritter & Collard; Troutd*, Anderson, Joswick & Skultety*	128. <i>Professional Development and Coaching Reports</i> - Carney, Champion & Uriarte*; White, Hodkowski, McMahon & Buli
Nevada 7	115. <i>An Expanded Elementary Mathematics Course: Developing Anti-Bias/Anti-Racist Math Education through Equity Based Instructional Practices</i> - Stuart McQueen & Sugimoto*	129. <i>A Social Justice Action Categorization Tool for Building Reflexivity and Agency</i> - Robinson* & Thanheiser
Crystal 2	116. <i>Connections Between Data Science, Operations, and Number Sense: A Professional Learning Curriculum for Elementary Teachers</i> - Bertolone-Smith & McKinney	130. <i>Embodiment in Abstract Algebra to Bridge the Double Discontinuity</i> - Katz
Crystal 3	117. <i>Teaching Math Modeling AND Teaching Students</i> - Zbiek*, Brass & Peters	131. <i>Community College Faculty Explore Fraction Tasks for Teaching Elementary Teachers</i> - Cawley & Runnalls
Crystal 4	118. <i>The Collective Work of Recruitment, Retention, and Development of Mathematics Teacher Educators of Color</i> - Nifoussi, Loewenberg Ball* & Bernal	132. <i>How Mathematics Teacher Education Programs Prepare Teachers of Data Science and Statistics</i> - Hudson, Mojica*, Lee*, Casey*, Abel* & Kuhlman*
Crystal 5	119. <i>Mathematics Teacher Recruitment and Retention: Is it a Real Concern? What can we do About It?</i> - Wilkerson*, Underwood* & Ahmed	133. <i>Promoting Teaching Mathematics Through Language</i> - Reiten

Session 104
AMTE
AMTE Award Winner

Tahoe (Hyb/Reg)

Mathematical Modeling as Humanizing Practices in Formal and Informal Learning Environments

Hyunyi Jung, *Texas A&M University*

In this early career award talk, I share lessons learned from my teaching and learning of mathematical modeling as humanizing practices. I view humanizing mathematical modeling as a collaborative practice that supports the process of using mathematics to interpret the world around individuals and understand them in the context of larger systems. I unpack this view, along with the opportunities and challenges in formal and informal learning. My practices are shaped by researchers and educators who continue to inspire us. I hope this presentation offers ideas for local efforts that foster inclusive mathematical modeling and influence relevant educational systems.

Session 105
Hybrid Report Session

Carson 1 (Hyb)

Teaching and Learning with Technology

Preservice Teachers' Perspectives on the Role of Artificial Intelligence in Learning Mathematics

Nirmala Naresh, *University of North Texas*
 Zuhail Yilmaz*, *North Carolina State University*

In this session, we present findings from a longitudinal research project investigating AI's role in mathematical classrooms, focusing on PMTs' engagement with Khanmigo. The study, involving twelve PMTs, explores factors influencing the AI tool's effectiveness in fostering conceptual understanding and critical thinking. PMTs prefer interactive engagements with Khanmigo, valuing active participation over direct answers. They appreciate Khanmigo's conversational abilities and emphasize the importance of specificity in interactions, especially in mathematical contexts. Educators interested in integrating AI into their classrooms will find this session useful.

Teaching and Learning with Technology

Prospective Teachers' Learning to Incorporate Programming in Mathematics Classrooms: Benefits of Using Large Language Models

Hyejin Park, *Drake University*
 Eric Manley*, *Drake University*

Our study shows that reliance on ChatGPT in designing programming-integrated mathematics learning tasks aligned with prospective teachers' confidence in programming abilities. Those with higher confidence preferred not to use ChatGPT, while those with lower confidence did. We also found that, while these future teachers were able to use programming as a tool to illuminate mathematical concepts, the plans for their learning tasks did not approach it explicitly as an opportunity for students actually to learn about the CS concepts involved. Future studies are needed to investigate how to better support teachers in incorporating CS learning objectives alongside mathematical ones.

Mathematics Content and Curriculum

Worthwhile Tasks in an AI World

Gail Burrill, *Michigan State University*

We are living and teaching in a world in which artificial intelligence can answer nearly every question we pose to students. This presents a dilemma for mathematics teachers - how do we frame worthwhile tasks that will promote student thinking and reasoning about mathematics given the presence of AI such as Symbolab or ChatGPT? The session will describe a framework to select and create such tasks, tasks that will provide opportunities for all students to demonstrate their mathematical understanding. Participants will consider several examples and resources that can support teachers in accessing such tasks.

Session 106
Mathematics Education Policy and Program Issues
Symposium (1:30 - 3:00)

Carson 2 (Hyb)

Navigating the Uneven Landscape of Early Childhood Mathematics Education Programs

Beth L MacDonald, *Illinois State University*
Karie C Brown, *Georgia State University*

Jennifer Ward, *Kennesaw State University*
Aidong Linda Zhang, *University of North Alabama*

Early Childhood Mathematics Teacher Educators may experience challenges in effectively preparing teachers of young children within the context of their course(s) for many reasons. The AMTE Standards for Teachers of Mathematics (AP.2; 2017) recommends MTEs examine preparation program components and work to improve them. However, with wide licensure variances present, issues persist when considering how to assess programs with value systems inherent in developmentally appropriate instruction across such a wide variance of grade levels. This panel discussion addresses the tensions experienced in the landscape of early childhood mathematics resulting in subsequent policy/program discussions and research examining these tensions.

Session 107
AMTE Committee Sessions

Carson 3

AMTE Get the Facts Out Task Force

Get the Facts Out: Spice Up and Personalize Your Math Teacher Recruitment Materials

Jean Lee, *University of Indianapolis*
Sarah Roller Dyess, *University of Alabama in Huntsville*

Lisa R Amick, *University of Kentucky*
Brian Lawler, *Kennesaw State University*
Glenn Waddell Jr, *University of Nevada, Reno*

Join the AMTE Get the Facts Out Task Force in discussing the various levels of spiciness available for personalizing and implementing Get the Facts Out recruitment materials. The Get the Facts Out resources support the professionalization and recruitment of the teaching field, as the materials address common misperceptions using data about salary, benefits, diversity, and career satisfaction. Differentiated stations will offer participants opportunities to learn about: Hearing about Get the Facts Out materials (mild), Developing recruitment timeline (medium), and Adapting recruitment materials for one's own personalized context (spicy).

Session 108
Equity, Social Justice, and Mathematics Teacher Education
Discussion Session

Carson 4

Art into Action: Queer and Queer Allied Mathematics Teacher Educators Coming Together in Creation

Brette Garner*, *University of Denver*
Kyle S Whipple, *University of Wisconsin-Eau Claire*
Alexa Lee-Hassan, *University of Illinois Chicago*

This session is accessible and applicable to all grades levels PK through 16 and mathematics education in general. The participants will consider and engage with art as activism in the context of queer populations, their push for equity, and other intersecting forms of oppression. Art and activism connect to mathematics in multiple ways, including geometry and statistics, which will be discussed during the session. Participants will discuss strategies for creative insubordination in mathematics teacher education, including leveraging the connections among art, mathematics, and activism to create their own art for activism.

Session 109
Mathematics Pedagogy
Individual Session

Nevada 1

Integrating Problem-Based Instruction in Secondary Mathematics Classrooms

Denise Polojac-Chenoweth, *Hillsborough County Public Schools/St. Petersburg College/University of South Florida*
Sarah Ferguson, *University of Cincinnati*

Problem-based instruction (PBI) is an educational approach that immerses students in real-world problems to acquire new skills, departing from conventional skill-based teaching methods. In this session, secondary educators and mathematics teacher educators, including teachers, coaches, and content/methods course instructors, will explore PBI's core principles and benefits in secondary math classrooms from both educator and learner perspectives. Participants will also experience a sample PBI lesson firsthand during this session.

Session 110
Mathematics Content and Curriculum
Discussion Session

Nevada 2

Implementing a Practice Based Instructional Framework in Mathematics Teacher Education: Lessons from Program-Level Implementation

Jo'el Johanson, *Northern Arizona University*
Shannon Guerrero, *Northern Arizona University*
Theresa Fuller, *Northern Arizona University*

Join us for a discussion on developing and implementing a practice-based instructional framework in secondary mathematics teacher education. Key areas of focus include ambitious teaching practices, responsive pedagogies, and instructional design strategies. Explore insights from a program-level framework aimed at supporting equity, diversity, and inclusion in mathematics education. This session is ideal for content/methods course instructors, coaches, and faculty seeking to enhance teacher preparation programs and address persistent inequities in mathematics education.

Session 111
Practice-Based Experiences for Prospective or Practicing Teachers
Discussion Session

Nevada 3

Supporting Prospective and Practicing Teachers through a Shared Leadership Model Leveraging a NIC Structure

Farshid Safi, *University of Central Florida*
Aline Abassian*, *University of Central Florida*

Sarah B Bush, *University of Central Florida*
Luisa Placido*, *University of Central Florida*
Maral Karimi*, *University of Central Florida*

This session will share perspectives from a multi-year funded project focused on improving secondary mathematics education programs across multiple institutions and including a network improvement community structure. Through a shared leadership model, programmatically this effort has been key in seamlessly connecting the coursework, internship and mentoring of teacher candidates and alumni (early career) teachers while providing a vision of continued participation that continues high-quality professional learning opportunities. Culminating in a first annual symposium, multiple stakeholders including clinical coordinators and mentor teachers led sessions and co-constructed a supportive professional learning effort with the mathematics education team of faculty and doctoral students

Session 112
Teaching and Learning with Technology
Discussion Session

Nevada 4

Successes, Struggles, and Solutions in Teaching Synchronous Online Mathematics Education Courses

Lynda R. Wiest, *University of Nevada, Reno*
Teruni Lamberg, *University of Nevada, Reno*

This session will begin with a 15-minute overview of how two K-8 teacher educators shifted to teaching synchronous online mathematics education courses. In this self-study, they each wrote three independent self-reflections for a total of four courses (one undergraduate, three graduate) that they later analyzed and discussed for common themes. After sharing key findings regarding their change in practice, the bulk of the discussion will consist of a facilitated discussion focused on the following question: What are the main successes, struggles, and solutions for teacher educators conducting fully synchronous online mathematics education courses for preservice and/or in-service teachers?

Session 113
Equity, Social Justice, and Mathematics Teacher Education Report Session

Nevada 5

Calculus Ready! Secondary Policies and Practices that Support Black Learners of Mathematics

Kenya Overton, *University of Connecticut*

This report shares the results of research conducted on US high schools that consistently graduate Black students who are Calculus ready upon entering a university. Rejecting the trend of examining Black students through a deficit lens, this study contributes to a small body of literature that examines what works when educating Black students in the area of mathematics. The schools' policies that were enacted and students' voices are shared. Secondary school educators may especially find the report useful.

Mathematics Teachers of Deaf/Hard of Hearing Students Decisions and Inclusion of Culture and Language

Felicia A. Smith, *Minnesota State University-Mankato*

The session highlights a report on a study of the experiences of high school mathematics teachers of Deaf and Hard of Hearing (D/HH) students, grounded in Culturally Responsive Teaching principles. The study revealed ways secondary mathematics teachers integrated sign language, used visual aids, and supported students' reading comprehension and linguistic levels to enhance their engagement in mathematics. The findings provide valuable insights for mathematics teacher educators to develop courses for secondary mathematics preservice teachers. Such courses prepare secondary mathematics teachers to properly support students with diverse needs, bridging the gap between theory and practice, and advancing inclusive education.

Session 114
Professional Development and Coaching Report Session

Nevada 6

Rationale for Video Selection: How do Coaches Select Clips for Video Clubs?

Julie Amador, *University of Idaho*

Jennifer Kruger, *University of Rochester*

Kenley Bailey Ritter, *University of Idaho*

Cindy H. Callard, *University of Rochester*

We designed and implemented video coaching clubs to support practicing coaches to improve their ability to: (a) facilitate productive planning and debriefing conversations with teachers, (b) notice the impact of their coaching practices on teachers' thinking and instruction, and (c) use evidence from what they noticed to make decisions about their coaching practices. The goals of the presentation are to describe the video coaching club structure and study design, share the Video Coaching Club Video Clip Selection Framework, and discuss findings from the research and conclusions related to video clubs and professional learning.

Starting with the Self: Supporting Middle School Mathematics Teachers in Articulating Their Positionality

Melissa Troudt*, *University of Wisconsin - Eau Claire*

Robin Anderson, *North Carolina State University*

Candace Joswick, *The University of Texas at Arlington*

Lisa Skultety*, *The University of Texas at Arlington*

Seventy-five middle school mathematics teachers are participating in a two-year professional development program aimed at integrating a focus on equity within mathematics pedagogy, technology, and supporting students' social-emotional well-being. Teachers crafted and later refined positionality statements, reflecting on their personal stance as a teacher. In this presentation, we delve into the insights garnered from the iterative process of crafting and revising these statements. We consider how this assignment served as a platform for teachers to not only articulate their evolving narratives but also to demonstrate their adeptness in navigating the intersections of power dynamics within their teaching practices.

Session 115
Equity, Social Justice, and Mathematics Teacher Education Individual Session

Nevada 7

An Expanded Elementary Mathematics Course: Developing Anti-Bias/Anti-Racist Math Education through Equity Based Instructional Practices

Shanté Stuart McQueen, *Portland State University*

Amanda Sugimoto*, *Portland State University*

This session shares an expanded mathematics methods course for elementary educators, with a focus on innovative components of the course (e.g. content circles) that aim to advance an anti-bias/anti-racist (ABAR) mathematics education. Session facilitators share examples of teacher candidates' work produced in the course, and the ways in which they demonstrated ABAR practices and thinking. The session is framed by the Five Equity Based Mathematics Teaching Practices (Aguirre et al., 2013), thus participants will engage in discussion around the framework and reflect on how their own current practice aligns. Teacher educators and math coaches may find this particularly relevant.

Session 116
Mathematics Content and Curriculum
Individual Session

Crystal 2

Connections Between Data Science, Operations, and Number Sense: A Professional Learning Curriculum for Elementary Teachers

Claudia M. Bertolone-Smith, *California State University, Chico*
Kat McKinney, *California State University, Chico*

In this interactive session, we will report on an activity-based data-science-focused professional learning curriculum for elementary teachers and PSTs used in a professional development setting. Our curriculum focuses on the discovery of the rich and plentiful connections to number sense and operations that exist within the data science topics of the elementary grades. We will share the curriculum for participant use as well as data and illustrative examples (e.g., work samples and written reflections) from PD participants.

Session 117
Mathematics Content and Curriculum
Individual Session

Crystal 3

Teaching Math Modeling AND Teaching Students

Rose Mary Zbiek*, *Pennsylvania State University*
Amy Brass, *University of New Mexico*
Susan A. Peters, *University of Louisville*

What does it mean to be good at teaching mathematical modeling? How does such teaching compare with Association of Mathematics Teacher Educators expectations for teacher development? Data from teachers involved in a national modeling project leads to an understanding of competence in teaching modeling that is richer than we as teacher educators in content or methods courses might imagine. We challenge and extend existing empirical and theoretical work and standards as we share what we learned from teachers and engage participants in using the resulting vision to analyze teaching and teachers' reflections.

Session 118
Development of Mathematics Teacher Educators
Discussion Session

Crystal 4

The Collective Work of Recruitment, Retention, and Development of Mathematics Teacher Educators of Color

Victoria Nifoussi, *University of Michigan*
Deborah Loewenberg Ball*, *University of Michigan*
Gabrielle Elizabeth Bernal, *University of Michigan*

This session will engage the crucial need to diversify the instructional workforce in mathematics teacher education. First, we will identify challenges of this goal and common impediments to progress. Second, using pláticas (a method of collective talk and learning), participants will hear the stories of a group of mathematics teacher educators of color, narrating both positive and negative experiences in their institutional contexts. This will shed light on what is entailed in serious efforts to advance the goal of supporting mathematics teacher educators of color. Lastly, participants will process what they have learned and specific ways to improve these efforts.

Session 119
Mathematics Education Policy and Program Issues
Individual Session

Crystal 5

Mathematics Teacher Recruitment and Retention: Is It a Real Concern? What Can We Do About It?

Trena Wilkerson*, *Baylor University*
Karen Underwood*, *Vanderbilt University*
Ishrat Ahmed, *Teachers College*

We are at a critical juncture in maintaining a strong and well trained mathematics teacher workforce. While we have much anecdotal evidence of the crisis, to move policy, funding, and resources to address, is there national data that provides compelling evidence of the problem? If so, what are the challenges, promising practices and potential policy changes that would support the recruitment and retention of effective teachers of mathematics to engage students in learning mathematics? What is our role as mathematics teacher educators in teacher preparation, mentoring and advocacy? Let's discuss and formulate plans!

Session 120
Practice-Based Experiences for Prospective or Practicing Teachers
Symposium

Tahoe (Hyb/Reg)

Supporting Teachers' Development of Equity Oriented Practices in Clinical Experiences

Torrey Kulow, *Portland State University*

Participants consider how the clinical experience can be a site for teacher candidate-mentor teacher dyad collaboratively learn (i.e., co-learn) to use equity-oriented practices in their work with students and with each other. Presenters share a co-learning tool developed in a design research study, and video clips of two dyads using the tool to co-learn how to disrupt inequitable participation patterns in their classroom. Participants discuss opportunities that teacher educators can provide for dyads to co-learn to use equity-oriented practices and features of the clinical experience that might support or constrain how the dyads engage in these co-learning opportunities.

Session 121
Equity, Social Justice, and Mathematics Teacher Education
Individual Session

Carson 1 (Hyb)

Infusing Advocacy Projects to Strengthen Mathematics Teacher Education Across the Continuum

Jennifer Bay-Williams, *University of Louisville*
 Katherine Ariemma Marin, *University of Louisville*
 Samantha Morris*, *University of Louisville*

Advocating for ourselves, among our colleagues, with our families, and for our profession are each important avenues toward more equitable mathematics education. Using an Advocacy Strategy Framework and drawing examples from our mathematics education courses at the undergraduate and graduate levels, we will explore and discuss opportunities for advocacy within the categories of self, colleagues, families, and profession. Join us for what we hope will be an enriching and pragmatic discussion about increasing our attention to advocacy at all levels of mathematics teacher education!

Session 190
AMTE
NSF Information Session

Carson 3

Programs and Opportunities for Mathematics Teacher Educators at the National Science Foundation

Patrice Waller, *National STEM Teacher Corps Pilot Program*
 Margaret Hjalmarson, *Discovery Research K-12 (DR-K12)*
 Leah McAlister Shields, *Robert T. Noyce Teacher Scholarship Program*

NSF Program Directors from the Directorate of STEM Education will highlight programs that support the work of mathematics teacher educators. Program directors will answer questions from the field.

Session 122
Mathematics Content and Curriculum
Individual Session

Carson 4

Promoting Equity and Inclusion in Mathematics P-20 classrooms through the use of Integrated STEM Practices

Margaret J. Mohr-Schroeder, *University of Kentucky*
 Christa Jackson*, *Saint Louis University*
 Sarah B Bush, *University of Central Florida*
 Thomas Roberts*, *Bowling Green State University*

Cathrine Maiorca, *California State University, Northridge*
 Jessica Ivy*, *Purdue University Northwest*
 Megan Burton, *Auburn University*
 Craig Schroeder*, *Fayette County Public Schools*

This interactive session will introduce the Integrated STEM Practices as a means to provide all P20 students with high-quality, culturally responsive mathematics learning experiences. The four practices position students as mathematical thinkers and doers while integrating practices from across the disciplines. Participants will leave with tangible examples they can implement right away into the coursework and community projects, as well as templates and tools that simplify the integration process.

Session 123
Equity, Social Justice, and Mathematics Teacher Education
Individual Session

Nevada 1

Exploring the Intersection of Black Language Identity and Teacher Identity for Black Mathematics Teachers

Michael Hoyes Jr., *North Carolina State University*
Amelia Quonyelle Rivera*, *North Carolina State University*

This 60 minute individual session investigates the interactions between Black Linguistic Identity (Baker-Bell, 2020), racial identity, and teacher identity in mathematics education, aiming to enhance inclusivity and recognition of linguistic and cultural diversity. Utilizing critical discourse analysis and the multidimensional model of racial identity (Sellers et al., 1998), it examines teacher interviews exploring how Black Linguistic Identity reflects and influences racial and teacher identities. The findings will guide the development of culturally competent teaching practices and materials, offering practical strategies for education programs to improve inclusivity and effectiveness. This research extends prior studies and provides insights for reshaping mathematics teacher education.

Session 124
Equity, Social Justice, and Mathematics Teacher Education
Individual Session

Nevada 2

Students' Perspectives on Equitable Teaching Practices

Erica Litke, *University of Delaware*
Jonee Wilson*, *University of Virginia*

Samantha Akridge, *University of Delaware*
Miriam Leshin, *Stanford University*
Victoria Antoinette Varlack*, *Harvard University*

In the session we explore how mathematics education researchers and teacher educators can consider students' perspectives on equitable mathematics teaching. As part of a larger project aimed at supporting coaches working with middle grades teachers to enact more equitable instruction, we conducted focus groups with middle schools students. Participants will engage in focus group activities and discuss how they support us to understand students' perspectives. We share results from analysis of focus group data and discuss how we as a field might better center students' voices and experiences in research on equitable teaching.

Session 125
Mathematics Content and Curriculum
Individual Session

Nevada 3

CMP's STEM Problems: A Powerful Equity and Mathematics Resource for Teacher Educators

Alden Jack Edson, *Michigan State University*
Elizabeth Difanis Phillips*, *Michigan State University*
Yvonne Slinger-Grant, *Michigan State University*

This session challenges teacher educators to reconsider the ways middle grades mathematics problems reflect how people make sense of and enhance the world we live in. We focus on the enactment of how re-designed mathematics problems across mathematical strands can promote student engagement and learning while providing teachers with flexibility to carry out equitable teaching practices that help address the individual needs of all students. A concomitant goal of the session focuses on how the tasks can be used in professional learning settings by teacher educators and/or professional learning providers.

Session 126
Mathematics Pedagogy
Individual Session

Nevada 4

Integrating Physical Activity into the Mathematics Classroom

Suzanne Lindt, *Midwestern State University*
Stacia C Miller*, *Midwestern State University*

The connection between physical activity, health, and academic performance is well-documented, and classroom physical activity has been linked to improved attention, concentration, and on-task behavior for students. This interactive session for elementary preservice teachers, elementary teachers, and education mathematics faculty members will provide strategies and activities for integrating physical activity into the elementary mathematics classroom. Participants will learn about the association between movement integration and academic achievement, as presenters share current research and examples of movement activities designed to increase understanding, engagement, and performance in their elementary mathematics classrooms.

How Does Instructional Time Relate to Perseverance Growth for Preservice Elementary Teachers?

Joseph DiNapoli, *Montclair State University*

This study investigated how time elementary preservice teachers (PSTs) spent studying certain mathematics topics during a content course was related to their perseverance growth. Using a quasi-experimental design, PSTs from two classes engaged in problem-solving sessions and their productive struggle amidst impasses was measured. There were two semester-long conditions: the treatment class studied 5 mathematical topics and the control class studied 10 mathematical topics. PSTs in the treatment class exhibited greater perseverance growth over time compared to the control class. This suggests that PSTs' perseverance development may be supported by spending more time studying fewer topics during mathematics content courses.

Preparing Preservice Teachers to Teach Mathematics for Creativity Through Problem Posing and Mathematical Modeling

Miriam Marie Sanders, *University of Wyoming*
Micayla Gooden, *Texas A&M University*

Michelle Kwok*, *Texas A&M University*
Eric Leonardo Rivera Rodríguez*, *Texas A&M University*
Dawn Parker, *Texas A&M University*

This presentation investigates pre-service teachers' mathematical creativity through digital storybook projects, examining their problem-posing and modeling while identifying challenges and misconceptions. It aims to share curriculum resources, project parameters, and findings, aligning with AMTE's mission to enhance mathematics teacher education.

Does Order Matter? Grades 6-8 Teachers' Beliefs about the Sequencing of Concepts and Struggle

Michele Carney, *Boise State University*
Joe Champion, *Boise State University*
Ramey Uriarte*, *Boise State University*

The Researching the Order of Teaching (ROOT) project is a large federally-funded teacher-researcher alliance aimed at teachers implementing instructional practices associated with the constructs of Explicit Attention to Concepts (EAC) and Student Opportunity to Struggle (SOS). 54 middle-grade math teachers enacted practices associated with these constructs and conducted a cross-over study, where teachers alternated between implementing EAC followed by SOS practices, or vice versa, and then transitioned mid-year to the alternate approach. Teachers experienced shifts in their beliefs regarding the sequencing of these practices. We'll delve into these findings and reasons behind teachers' belief shifts.

How to Love Equity in Mathematics Instruction When It Don't Love You Back!

Latia White, *Digital Promise Global*
Nicola M Hodkowski, *Digital Promise Global*

Lauren Hickman McMahon, *Digital Promise Global*
Tarik Buli, *Digital Promise Global*

Our presentation will focus on the Instructional Coaching for Tech-Enhanced Approaches in Mathematics (iCoachTEAM); a coaching program designed to help middle school mathematics teachers use technology to promote conceptual understanding and conduct formative assessment, targeting historically and systematically excluded (HSE) students. We will discuss how we addressed resistance among coaches to prioritizing the needs of HSE students in their coaching cycles. We will review the programmatic changes implemented and share preliminary data on how these adaptations enhanced coaches' efficacy and confidence in coaching towards equity-centered mathematics instruction (ECMI) with their partner teachers.

A Social Justice Action Categorization Tool for Building Reflexivity and Agency

Molly L Robinson*, *Portland State University*
Eva Thanheiser, *Portland State University*

In this session we will share a tool for categorizing social justice actions to support MTEs and teachers of all grade levels in reflecting on their own social justice practice, as well as developing their own and their students' social justice agency through envisioning a variety of possible social justice actions. We will share how we have used this tool in a social justice mathematics college capstone course in which the central mathematical focus was data analysis and visualizations to understand and communicate about racial and social justice issues.

Session 130
Mathematics Content and Curriculum
Individual Session

Crystal 2

Embodiment in Abstract Algebra to Bridge the Double Discontinuity

Brian Katz, *California State University, Long Beach*

We developed embodied cognition activities for a course in abstract algebra for preservice secondary teachers to support these future teachers in making connections between the content and pedagogy they experienced in this course and their future careers. In this session, we will share parts of the activities and our analysis of students' embodied representations, connections between tertiary and secondary content (e.g., well-definedness of fraction arithmetic, logarithms as homomorphisms), and beliefs about their future use of embodied pedagogies as teachers. Primary audience: university faculty in mathematics departments.

Session 131
Mathematics Content and Curriculum
Individual Session

Crystal 3

Community College Faculty Explore Fraction Tasks for Teaching Elementary Teachers

Anne Cawley, *California Polytechnic State University, Pomona*
Cristina Runnalls, *California Polytechnic State University, Pomona*

Teaching mathematics for future elementary teachers is fundamentally different from other forms of mathematics and thus requires different knowledge for teaching mathematics. As community colleges become increasingly involved in the process of training future teachers, it is essential to explore how instructors at these institutions develop as mathematics teacher educators. This paper reports on a preliminary exploration of how community college faculty grappled with teaching-oriented mathematical tasks involving fractions.

Session 132
Mathematics Education Policy and Program Issues
Individual Session

Crystal 4

How Mathematics Teacher Education Programs Prepare Teachers of Data Science and Statistics

Rick Hudson, *University of Southern Indiana*
Gemma Mojica*, *North Carolina State University*
Hollylynne Lee*, *North Carolina State University*
Stephanie Casey*, *Eastern Michigan University*
Rachel Abel*, *North Carolina State University*
Adrian Kuhlman*, *North Carolina State University*

This session will focus on the preparation of middle and high school teachers regarding data science and statistics (DS&S). Participants will reflect on how DS&S is addressed in their teacher education programs currently and how these practices compare to expectations from national standards and initiatives. Participants will engage in data science activities designed for prospective mathematics teachers. We will also discuss the findings of two research studies that sought to understand the current policies and practices in mathematics teacher education programs regarding DS&S and the DS&S knowledge, attitudes, confidence, and practices of early career mathematics teachers.

Session 133
Mathematics Pedagogy
Individual Session

Crystal 5

Promoting Teaching Mathematics Through Language

Lindsay Reiten, *University of Northern Colorado*

How do we prepare mathematics preservice teachers to engage students, particularly multilingual learners, in disciplinary practices requiring language (resources)? Through language, students deepen their content understanding as they create, enact and use mathematics. To improve preparing preservice teachers to teach mathematics through language and support their multilingual learners, this study sought to identify how secondary inservice mathematics teachers from three field placement host schools teach mathematics through language. Findings identify common strategies and teacher moves teachers used to teach mathematics through language. Applying the findings, activities for mathematics teacher educators to use will be shared, critiqued, and discussed.

A/MTE

AFTERNOON BREAK & SNACKS**GRAND SALON**

This is a great time to stretch, network with colleagues, and visit the exhibitors. Refreshments are provided.

[Click here to access the menu.](#)



A/MTE

JUDITH E. JACOBS LECTURE**TAHOE (HYBRID)**

**Drawing Lessons From History as We Navigate the Present:
Learning From Mathematics Educators Who Navigated the U.S.
Civil Rights Movement**

Robert Q. Berry, University of Arizona

This presentation utilizes the oral histories from the *Teachers in the Movement* project to delve into the ideas and teaching methods of mathematics educators during the U.S. Civil Rights Movement, both within and beyond the classroom. Through the accounts of these educators, we gain insight into how their teaching, curriculum, and community involvement served as impactful forms of activism that contributed to the movement. This presentation will challenge us to draw lessons from history as we navigate the present.





BREAKFAST

SUMMIT PAVILION

Join colleagues for breakfast and informal conversation.

[Click here to access the menu.](#)



OVERVIEW OF SATURDAY, FEBRUARY 8, 2025

	8:15 AM – 9:15 AM	9:30 AM - 10:15 AM	10:30 AM - 11:15 AM	11:30 AM - 12:15 PM
Tahoe (Hybrid)	135. <i>President Exchange - Opportunities and Challenges Resulting From the Use of Artificial Intelligence Tools in Teacher Education</i> - McKinney, Knighton & Cooper	150. <i>MTEP Session - Leveraging Research to Create Retention Focused Teacher Preparation Program Changes</i> - Nebesniak & Rupnow	161. <i>MTEP Session - Navigating the Rapids: How Policy Shifts Impact Mathematics Education Preparation Programs</i> - Mohr-Schroeder, Martin & Strutchens	176. <i>How to Use Children's Literature in the Work of Preparing Prospective Teachers of Mathematics</i> - Aqazade & Bofferding
Carson 1 (Hybrid)	136. <i>MTEP Session - Rehearsals, Simulations, and Scenarios: Exploring Practice-Based Experiences in Mathematics Teacher Education</i> - Pai, Bondurant, Colonnese, Lee, Howell*, Sapkota, Young* & Barno*		162. <i>Developing, Supporting, and Researching Novice Elementary Mathematics Specialists as They Take On Leadership Roles</i> - Rigelman & Lewis*	177. <i>Why Queer Education IS Math Teacher Education: Our Obligation to Use Data For Justice</i> - Koestler, Whipple, Lee-Hassan & Garner*
Carson 2 (Hybrid)	137. <i>MTEP Session - Empowering Early Career STEM Teachers: Navigating Collaborative Conversations for Equitable Practices (Extended Session 8:15-9:45)</i> - Wilson & Lin*		163. <i>Developing a Thinking Classroom: A High School Mathematics Teacher's Learning Trajectory</i> - Keazer & Pelter*	178. <i>Stop Preachin' and Let'em Teach! Using Agape to On-Ramp Teachers Toward Desired Mathematics Teaching Practices</i> - Amidon, Winfun-Cook*, Harris & Amidon*
Carson 3	138. <i>AMTE Professional Development Committee - What's Next? Supporting Mathematics Teacher Educators in Taking their Next Step</i> - Parrish, Perry, Ivy*, Byun, Rothrock & Harkey		164. <i>Supporting Prospective Mathematics Teachers to Design MAT-Enhanced Curriculum (Extended Session 10:30-12:00)</i> - Walton & Witt	
Carson 4	139. <i>Codesigning protocols and routines to elicit and expand teachers' noticing for equity and justice</i> - Kimmerling, Fuentes Acevedo, Mendez, Rubin*, Acosta*, Guarino, van Es & Santagata		165. <i>Empowering Voices, Rehumanizing Spaces: The Rights of the Learner in Mathematics Education</i> - Kalinec-Craig, Wolfe, Neihaus*, Masters-Goffney*, Rupe* & Wilkes II	
Nevada 1	140. <i>Developing Mathematical Creativity in Pre Service Teachers: The Case of Multi-digit Multiplication Algorithms</i> - Fox & Payne*	151. <i>MTEs Rethinking Grades: Examining Alternative Approaches (Extended Session 9:30-11:00)</i> - Hertel, Ebby & Corven		179. <i>Learning to Notice in Video Clubs: Preservice Teacher Noticing during Mathematics Instruction</i> - Cooper, Smith, Martinez*, Thornton* & Taylor*
Nevada 2	141. <i>Measuring Vision of High Quality Mathematics Instruction at Scale</i> - Wilson*, McCulloch, Schwartz*, Mawhinney* & Stephan*	152. <i>Teacher Education Programs' Application Processes: What do Applicant Interviews and Essays Seek to Reveal?</i> - Slavit, Roth McDuffie* & Chappelle	166. <i>Balancing Acts: An Innovative Instructional Routine for Developing Equality and Equivalence in K-12 STEM Education</i> - Greenstein & Panorkou	180. <i>This session was moved to Crystal 2, 8:15 - 9:15 am at the request of the presenters.</i>
Nevada 3	142. <i>Learning to Facilitate Content-focused Coaching Cycles: Using A Comprehensive Framework to Support Coaches' Professional Growth</i> - Gillespie, Kruger, Callard & Ritter	153. <i>Leveraging a Framework to Design Professional Development Addressing Social Justice Interdisciplinary and Community Connections</i> - Smithey & Moldavan	167. <i>Raising the Bar: The Impact of Mediated Field Experience on Teacher Preparation</i> - Zonnefeld & Zonnefeld	181. <i>Making Math Meaningful: Empowering Preservice Mathematics Elementary Teacher to Create Model Eliciting Activities Using AI</i> - Maiorca, Burton, Martin, Ivy*, Edelen, Schroeder* & Roberts*

	8:15 AM – 9:15 AM	9:30 AM - 10:15 AM	10:30 AM - 11:15 AM	11:30 AM - 12:15 PM
Nevada 4	143. <i>Supporting Pre Kindergarten Data Analysis, Interpretation, and Dissemination Through A Cross Disciplinary Collaboration</i> - Ward, Damjanovic* & Branson*	154. <i>Engaging Preservice Teachers with Math Modeling and Assessment through a Twist on Fermi Problems</i> - Brass, Zbiek* & Kaufman*	168. <i>Noticing and Instructional Vision Through Reflection in Argumentation Focused Discussions</i> - Snider, Shekell*, Cross Francis & Bharaj*	182. <i>Opportunities for Job Embedded Teacher Learning through Collaborative Engagement with Student Data</i> - Gallagher & Walkowiak
Nevada 5	144. <i>Mathematics Content and Curriculum Reports</i> - Cruciana, Arnold* & Green*; Sundrani & Wells	155. <i>Mathematics Pedagogy Reports</i> - Litster; Lindfors-Navarro	169. <i>Mathematics Education Policy and Program Issues Reports</i> - Clark; Heikila & Lesseig	183. <i>Leveraging Artificial Intelligence to Scale Up Professional Development and Teacher Education</i> - Copur-Gencturk, Han & Li*
Nevada 6	145. <i>Teaching and Learning with Technology Reports</i> - Casler-Failing; Benken	191. Gold Sponsor - CPM Educational Program, Strategies and Resources for Critically Consuming Curricula - Jasien	170. <i>Teaching and Learning with Technology Reports</i> - Cudd, Menke, Zimmerman & Stoddard; Roxburgh	184. <i>Reporting on a Four Year Collaboration with Nonprofit Preparing Teachers with Emotional Intelligence for the Classroom</i> - Frauenholtz, O'Dell* & Hoffman*
Nevada 7	146. <i>Authentic Data Inquiry to Inspire and Engage Algebra Teachers</i> - Metts & Son*	156. <i>“Mathifying” the Coaching Cycles with Instructional Coaching for Tech-Enhanced Approaches in Mathematics (iCoachTEAM)</i> - Hodkowski, McMahon, Buli & White	171. <i>Preservice Teachers’ Learning of Teaching Mathematics through Problem Posing in Elementary Mathematics Methods Courses</i> - Howell & Kohar	185. <i>Using video to support equitable noticing: A focus on video selection and facilitation</i> - van Es, Barnhart, Amador, Larison*, Sherin* & Richards*
Crystal 2	180. <i>Examining Preservice Teachers Anticipations and Questions: What Can We Learn as a Teacher Education Community?</i> - Walsh & Tillema		172. <i>A Mile Wide and an Inch Deep: Artificial Intelligence as a Mathematics Curriculum Development Tool</i> - Sawyer, Aga* & Wolfe*	186. <i>Design of a Technology Based Geometric Thinking Framework to Support Teachers’ Noticing of Students’ Thinking</i> - Hollebrands, Hoyes Jr., Chandler & Ellis
Crystal 3	147. <i>Supporting prospective teachers through low floor, high ceiling tasks: Doing “justice” through probability and statistics</i> - Gatza & Burch	158. <i>Supporting Teachers’ Implementation of Data Investigations in Classrooms: A Collaboration Between Educators and Data Scientists</i> - Mojica*, Thrasher, Pace & Graham*	173. <i>Exploring equitable teaching: Insights into the relationships between talk, task, doing, and teacher identity</i> - Perry	187. <i>Creating Research Informed Instructional Nudges for Elementary Teachers</i> - Partridge & Otten
Crystal 4	148. <i>Teaching and Learning with Technology Reports</i> - Aqazade, Atabas & Mauntel*; Kim, Park* & Joung*	159. <i>Unpacking the Joint AMTE Position Statement on Asset Based Perspectives: Implications for Mathematics Teacher Educators</i> - Honey*, Lancour*, Lesseig & Steele	174. <i>Mathematics Content and Curriculum Reports</i> - Nusser, Kang & Krejci*; Sapkota, Fulwider & Odondi	188. <i>Using Reciprocal Peer Coaching to Improve Mathematics Teaching and Build Community within a High School</i> - Jansen, Becker* & Kasehagen*
Crystal 5	149. <i>The Statistical Education of Teachers: A Framework and Examples</i> - Peters, Bargagliotti* & Maddox	160. <i>Examining Instructional Coaching Facilitation Moves for Discussing Equity in Mathematics</i> - Akridge	175. <i>Engaging in Partnership: Findings from a Systematic Literature Review on Research Partnership Processes in Mathematics Education</i> - Che*, Eddy & Wilkerson*	189. <i>Secondary student teacher’s use of curricular reasoning in making decisions during planning</i> - Crystal & Teuscher

Session 135

Tahoe (Hyb/Reg)

AMTE

President Exchange

Opportunities and Challenges Resulting from the Use of Artificial Intelligence Tools in Teacher EducationEbony McKinney, *Association of State Supervisors of Mathematics*Latrenda Knighten, *National Council of Teachers of Mathematics*Sandi Cooper, *School Science and Mathematics Association*Enrique Galindo, *Association of Mathematics Teacher Educators*

This presidential panel will explore the opportunities and challenges presented to mathematics teachers, mathematics teacher educators, and mathematics education leaders by the availability of artificial intelligence tools. Organizational presidents from ASSM, NCTM, SSMA, and AMTE will be the speakers on the panel.

Session 136

Carson 1 (Hyb)

Practice-Based Experiences for Prospective or Practicing Teachers**Extended Session (8:15 – 9:45)*****Rehearsals, Simulations, and Scenarios: Exploring Practice-Based Experiences in Mathematics Teacher Education***Grace Pai, *Queens College - City University of New York*Liza Bondurant, *Mississippi State University*Madelyn Colonnese, *University of North Carolina at Charlotte*Carrie Lee, *East Carolina University*Heather Howell*, *Educational Testing Services*Bima Sapkota, *The University of Texas Rio Grande Valley*Jamaal Young*, *Texas A&M University*Erin Barno*, *Boston University*

In this extended session participants will be invited to consider affordances and constraints of (a) mixed-reality tools, (b) digital platforms, and (c) in-person rehearsals to engage preservice elementary and secondary teachers in approximations of practice. Participants will leave the session with insights and strategies to enhance the practice-based experiences in their own mathematics methods and content courses.

Session 137

Carson 2 (Hyb)

Practice-Based Experiences for Prospective or Practicing Teachers**Extended Session (8:15 - 9:45)*****Empowering Early Career STEM Teachers: Navigating Collaborative Conversations for Equitable Practices***Gina L Wilson, *Knowles Teacher Initiative*Joyce Lin*, *Knowles Teacher Initiative*

In this workshop, participants explore a specialized tool designed to assist early career STEM teachers (ECSTs) in identifying factors within complex systems that impact collaborative relationships between colleagues. This tool aids ECSTs in meaningful discussions about implementing equitable teaching practices across all grade bands and content levels, fostering shifts in their own and their colleagues' approaches. Attendees will also gain insights into challenges ECSTs face in initiating such discussions and receive initial guidance on fostering supportive environments for these dialogues.

Session 138

Carson 3

AMTE Committee Sessions**Extended Session (8:15 – 9:45)*****Professional Development Committee******What's Next? Supporting Mathematics Teacher Educators in Taking their Next Step***Christopher Warren Parrish, *University of South Alabama*Ayanna Perry, *Knowles Teacher Initiative*Jessica Ivy*, *Purdue University Northwest*Sunghwan Byun, *North Carolina State University*Katrina Stullken Rothrock, *University of Wisconsin-Eau Claire*Elizabeth Harkey, *Auburn University*

What's the next step in your professional journey? Writing a book, finding collaborators, discovering new topics for research, changing jobs? This roundtable-style session will encourage participants to make connections with each other and get advice from experienced educators and researchers.

Session 139
Professional Development and Coaching
Symposium (8:15 - 9:45)

Carson 4

Codesigning protocols and routines to elicit and expand teachers' noticing for equity and justice

Christina Kimmerling, *University of California, Irvine*
Patricia Fuentes Acevedo, *University of California, Irvine*
Jose Angel Mendez, *University of California, Irvine*
Ethan Rubin*, *University of California, Irvine*

Isabelle Acosta*, *University of California, Irvine*
Jody Guarino, *Orange County Department of Education*
Elizabeth A van Es, *University of California, Irvine*
Rossella Santagata, *University of California Irvine*

Recent research has shed light on teachers' multidimensional noticing for equity. This session centers routines and protocols to develop teachers' noticing for equity. We explore four contexts to support in-service teachers learning to notice for equity: teacher collaboration around student work, teacher reflection and dialogue around student participation via a practical measure, teacher engagement with a parent-led family mathematics leadership team, and teachers' analysis of web-based representations of equitable noticing in practice. This session will inform how teacher educators and professional development may leverage protocol and routines to expand teachers' noticing for equity and justice.

Session 140
Mathematics Content and Curriculum
Individual Session

Nevada 1

Developing Mathematical Creativity in Preservice Teachers: The Case of Multi-digit Multiplication Algorithms

Ryan David Fox, *Belmont University*
Anna M. Payne*, *University of Wyoming*

To investigate mathematical creativity and pedagogical content knowledge among preservice elementary teachers, we asked study participants to create and assess multiple alternative algorithms for multi-digit whole-number multiplication. We share our work on developing a mathematically creative pedagogical content knowledge and how these knowledge bases can be observed in this study and grown in these future teachers. While focusing on multi-digit multiplication, we will connect the ideas to later mathematical content in the secondary curriculum relating to Number & Operation and Algebra. We hope our findings support the work of instructors of math content and methods course at any level.

Session 141
Collaborations and Partnerships
Individual Session

Nevada 2

Measuring Vision of High Quality Mathematics Instruction at Scale

Holt Wilson*, *University of North Carolina-Greensboro*
Allison McCulloch, *University of North Carolina at Charlotte*

Catherine Schwartz*, *East Carolina University*
Katherine Mawhinney*, *Appalachian State University*
Michelle Stephan*, *University of North Carolina at Charlotte*

In this session, we present the development and validation of a survey instrument that assesses instructional vision. We then share findings of a study to characterize the instructional visions of mathematics educators and leaders held across a state educational system.

Session 142
Development of Mathematics Teacher Educators
Individual Session

Nevada 3

Learning to Facilitate Content-focused Coaching Cycles: Using A Comprehensive Framework to Support Coaches' Professional Growth

Ryan Gillespie, *University of Idaho*
Jennifer Kruger, *University of Rochester*

Cindy H. Callard, *University of Rochester*
Kenley Bailey Ritter, *University of Idaho*

To support the professional growth of mathematics coaches, we created a comprehensive coaching cycle framework and engaged 9 coaches in a study in which they used our framework in coaching cycles with mathematics teachers. We investigated how the framework influenced coaches' perceptions and general knowledge of coaching, planning processes used to prepare for the different parts of the coaching cycles, and facilitative behaviors within the three parts of the coaching cycle. In this session, we share our framework and findings from this study to highlight how a comprehensive framework can support coaches' professional growth.

Session 143
Collaborations and Partnerships
Individual Session

Nevada 4

Supporting Pre-Kindergarteners Data Analysis, Interpretation, and Dissemination Through a Cross Disciplinary Collaboration

Jennifer Ward, *Kennesaw State University*
Victoria Damjanovic*, *Northern Arizona University*
Stephanie M. Branson*, *Northern Arizona University*

This presentation highlights the collaboration of three teacher educators with collective expertise in mathematics, early childhood, and literacy. Working in a lab preschool, the team aimed to cultivate critical statistical literacy (Weiland, 2017) with pre-kindergarten children during project work being done in the classroom. Time will be spent sharing children's work samples, author reflections and transcriptions of planning between the authors and classroom teachers. This session aims to provide coaches and MTEs insight into how they might cultivate critical literacy with young children in classroom settings, as well as engage participants in dialogue around future work in this area.

Session 144
Mathematics Content and Curriculum
Report Session

Nevada 5

Exploring Statistics Instruction in High School Intermediate Algebra Courses: Results from a National Survey

Maria Cruciani, *Michigan State University*
Liz Arnold*, *Montana State University*
Jennifer L. Green*, *Michigan State University*

We present the results of a national survey and interview study, summarizing high school teachers' experiences, choices, and constraints when teaching statistics in intermediate algebra courses. These results highlight ways mathematics teacher educators can support teachers' development as statistics instructors.

Teachers' Selection of Digital Mathematics Curricular Materials to Supplement Instruction

Anita Sundrani, *Northwestern University*
Tommy Wells, *Bellarmine University*

In this report, we present findings from an investigation into a national sample of approximately 30,000 teachers' selection of digital supplemental mathematics curricular resources from a curated database and discuss conclusions and recommendations for mathematics teacher educators.

Session 145
Teaching and Learning with Technology
Report Session

Nevada 6

Developing TPACK: Learning to Code and Teach with Robotics in a Mathematics Methods Course

Shelli L. Casler-Failing, *Georgia Southern University*

This session will report on research conducted in a middle grades and secondary cross-listed mathematics methods course as preservice teachers experienced learning about, and with, the TI-Nspire calculator, TI-Innovator Rover™ (secondary PSTs), and Dash robot with TI Bluetooth Adapter (middle grades PSTs). Findings will be disseminated as well as PSTs' self-reported successes and challenges as they learned to code and create lessons with the robotics. This report session will also share strategies for MTEs contemplating the integration of similar experiences in their courses and how to help make robotics accessible for PSTs after graduation in their classrooms.

Using an Online Tool to Expand Prospective Secondary Mathematics Teachers' Knowledge of Content and Pedagogy

Babette Benken, *California State University, Long Beach*

Findings from a study that examined preservice secondary mathematics teachers' (PSTs) perceptions of the effectiveness of an interactive, online learning platform will be shared. The platform was integrated into several units in secondary math credential courses. The PSTs believed the units helped them to expand their understandings of grades 6-12 mathematics and they enjoyed exploring mathematics using this platform. They further communicated that the experience enhanced their understanding of the capability of such platforms as a tool for grades 6-12 mathematics courses and allowed them to envision how they might use such a platform in their future practice.

Session 146
Mathematics Content and Curriculum
Discussion Session

Nevada 7

Authentic Data Inquiry to Inspire and Engage Algebra Teachers

Elizabeth Metts, *Vanderbilt University*
Ji Son*, *California State University, Los Angeles*

During this session, participants will engage in a data exploration activity, using a real, multivariate dataset to consider how and why data practices might be integrated in high school mathematics content.

Session 180*
Mathematics Pedagogy
Individual Session

Crystal 2

Examining Preservice Teachers Anticipations and Questions: What Can We Learn as a Teacher Education Community?

Patricia A. Walsh, *Indiana University*
Erik S. Tillema, *Indiana University*

Elementary preservice teachers vary in their skill at anticipating student mathematical reasoning while lesson planning. We will share our integration of the practice of anticipating student thinking in our methods course, including designing good questions to ask, in the context of learning to plan lessons. We will illustrate how strong anticipations support the generation of useful questions to use while teaching and how weaker anticipations constrain question generation during lesson planning. Participants will see preservice teachers' anticipations of student thinking for lessons they planned and how those anticipations connected with planned questioning.

*This session was moved from a later time at the request of the presenters..

Session 147
Mathematics Content and Curriculum
Individual Session

Crystal 3

Supporting Prospective Teachers Through Low Floor, High Ceiling Tasks: Doing "Justice" Through Probability and Statistics

Andrew M. Gatza, *Ball State University*
Lori J. Burch, *Indiana University*

We discuss the use of low-floor, high ceiling (LFHC) tasks in the context of an eight-week course for prospective secondary mathematics teachers (PSMTs). This course was designed to introduce PSMTs to the content thread of probability and statistics by using probability and statistics as tools for investigating issues of social justice. LFHC tasks provided opportunities for our PSMTs to develop both content and pedagogical knowledge requisite for supporting a progression of statistical thinking across secondary curriculum and insights about justice in the math classroom.

Crafting the Future: Mathematics Teacher Educators' Experiences with Artificial Intelligence Driven Mathematical Tasks

Mahtob Aqazade, *Illinois State University*
Sebnem Atabas, *University of Saint Joseph*
Matthew Mauntel*, *University of New Hampshire*

In this report, we aim to provide insights into our experiences as three mathematics teacher educators using ChatGPT to generate a mathematical task focusing on analyzing patterns and relationships within algebraic thinking. We began with the same prompts but individually continued to prompt ChatGPT to modify the mathematical task. Within a self-study approach, we analyzed our prompts. Each educator approached the selection and modification of the ChatGPT-generated mathematical task differently, depending on their experiences. Building on our experiences, we inquire about the potential of ChatGPT as a facilitative tool to enhance preservice teachers' selection and modification of mathematical tasks.

Preservice Teachers' Experiences with Artificial Intelligence Integrated Mathematical Problem Posing Activities

Young Rae Kim, *Texas A&M University-San Antonio*
Mi Sun Park*, *Texas A&M University-San Antonio*
Eunmi Joung*, *Utah Valley University*

This study presents to mathematics educators and teacher educators how an Artificial Intelligence (AI)-powered scaffolding strategy for supporting problem posing could positively impact the effectiveness of problem posing regarding fractions in math instruction. Additionally, it provides valuable insights into ways to offer multiple opportunities for preservice teachers to engage in creating and evaluating the use of AI-based technological tools in mathematics education. These opportunities ensure that preservice teachers develop robust mathematics knowledge and effective teaching skills to leverage AI effectively, thereby enhancing the teaching and learning of mathematics.

The Statistical Education of Teachers: A Framework and Examples

Susan A. Peters, *University of Louisville*
Anna Bargagliotti*, *Loyola Marymount University*
Kaycie Maddox, *American Statistical Association*

Much has changed since *Statistical Education of Teachers* (Franklin et al., 2015) was released, including the infusion of data science in K12 education. Data science requires that students develop knowledge and skills to consider and work with bigger and more complex data, which requires that teachers develop knowledge and skills for teaching this content. We present a framework for the statistical education of teachers that focuses on developing teachers' knowledge for teaching content detailed in *Guidelines for Assessment and Instruction in Statistics Education II* (Bargagliotti et al., 2020). We engage participants with activities that facilitate teachers' constructions of that knowledge.

Session 154
Mathematics Content and Curriculum
Individual Session

Nevada 4

Engaging Preservice Teachers with Math Modeling and Assessment through a Twist on Fermi Problems

Amy Brass, *University of New Mexico*
Rose Mary Zbiek*, *Pennsylvania State University*
Gary Kaufman*, *Pennsylvania State University*

Finding time to incorporate math modeling experience and pedagogy in our courses can be challenging. Assessing holistic math modeling is also non-trivial. We will engage participants in an activity that is a twist on a Fermi problem designed to introduce teachers to modeling in limited time. We also share how its assessment is introduced through a teacher-designed rubric that also can be used for other modeling experiences. Secondary school student work and preservice teacher work illustrate how the activity plays out in classrooms. Two activities and a rubric are available for use with your preservice or inservice teachers...and their students.

Session 155
Mathematics Pedagogy
Report Session

Nevada 5

Changing PSTs Mindset Towards Mathematics Methods Courses: From Checklist to Growth Opportunity

Kristy Litster, *Valdosta State University*

The primary goal for this research report is to briefly share results from a mixed methods study that explored how three design based strategies in math methods courses (face to face and fully online) supported a growth mindset for Elementary Education Preservice teachers (PSTs).

The Circulating Phase of Instruction: A Powerful Time for One-on-One Conversations Involving Fraction Story Problems

Heather Lindfors-Navarro, *Northern Arizona University*

Mathematics instruction can work to open or constrain children's opportunities to learn, and the interactive nature of instruction makes it challenging for researchers to identify patterns in high-quality opportunities to learn. While researchers have documented how whole-group discussions and small-group work can contribute to such opportunities, little attention has been given to one-on-one interactions. This study focused on the circulating phase of instruction, where the teacher had one-on-one conversations with individual children as they worked to solve fraction story problems. Analyses suggest these conversations contribute to children's opportunities to learn, presenting implications for methods instructors, coaches, and researchers. This is a created report session.

Session 191
AMTE
Sponsored Sessions - Gold Sponsor

Nevada 6

CPM Educational Program

Strategies and Resources for Critically Consuming Curricula

Lara Jasien, *CPM Educational Program*

Explore complimentary 6-12 curricular resources that can be used in courses and fieldwork! We will investigate how CPM curricula can enhance PSTs' lesson planning, provide tasks for modeling ambitious teaching, share rubric-based curricular-analysis tasks, and collaboratively create PST resources.

Session 156
Professional Development and Coaching
Individual Session

Nevada 7

“Mathifying” the Coaching Cycles with Instructional Coaching for Tech-Enhanced Approaches in Mathematics (iCoachTEAM)

Nicola M. Hodkowski, *Digital Promise Global*
Lauren Hickman McMahon, *Digital Promise Global*

Tarik Buli, *Digital Promise Global*
Latia White, *Digital Promise Global*

iCoachTEAM is designed for coaches working with middle school math teachers to enhance technology-driven instruction for promoting conceptual understanding and conducting formative assessment. iCoachTEAM adapts the widely used, subject agnostic, Impact Cycle to specifically address mathematics instruction for students who are testing below grade level and identify as Black, Latino, and/or low income. This session for coaches, administrators, and teacher educators will provide an overview of our adaptations, our research for “mathifying” coaching cycles, and our coaching tools co-developed with coaches. Participant engagement includes use of and collaboration on how the tools could be used in participants’ settings.

Session 158
Professional Development and Coaching
Individual Session

Crystal 3

Supporting Teachers’ Implementation of Data Investigations in Classrooms: A Collaboration Between Educators and Data Scientists

Gemma Mojica*, *North Carolina State University*
Emily Thrasher, *North Carolina State University*

Michelle Pace, *North Carolina State University*
Bruce Graham*, *North Carolina State University*

We will highlight how mathematics teacher educators can support teachers in implementing data investigation lessons and a model where teachers collaborated with data science education experts and data scientists to co-design lessons. Resources for supporting teachers will be shared.

Session 159
Mathematics Education Policy and Program Issues
Discussion Session

Crystal 4

Unpacking the Joint AMTE Position Statement on Asset Based Perspectives: Implications for Mathematics Teacher Educators

Joleigh Honey*, *National Council of Teachers of Mathematics*
Crystal Lancour*, *Colonial School District*

Kristin Lesseig, *Washington State University Vancouver*
Mike Steele, *Ball State University*

What does an asset-based perspective mean to you? Have you ever been in a conversation centered on what students can’t do? How do you shift discussions and actions to incorporate more asset-based perspectives? In this session, intended for all educators, we will first provide background information and an overview of the recent AMTE/ASSM joint position statement on the importance of asset-based perspectives. Participants will then engage in discussions to unpack asset-based perspectives concerning curriculum, instruction, and assessment. Discussions will focus on how mathematics teacher educators can better support current and future teachers in implementing asset-based perspectives.

Session 160
Professional Development and Coaching
Individual Session

Crystal 5

Examining Instructional Coaching Facilitation Moves for Discussing Equity in Mathematics

Samantha Akridge, *University of Delaware*

This session will focus on the facilitation moves leveraged by an instructional coach when surfacing the topic of equity in mathematics in the context of an equity-focused middle school mathematics instructional coaching program. During the session, participants will examine and discuss transcripts of coaching conversations in which equity is surfaced in order to identify facilitation moves used in these discussions. This session will conclude with a discussion of how these findings can be taken up by mathematics teacher educators to promote the centering of equity in mathematics in the context of instructional coaching and professional learning more broadly.

Session 161

Tahoe (Hyb/Reg)

**Mathematics Education Policy and Program Issues
MTEP Featured Discussion Session*****Navigating the Rapids: How Policy Shifts Impact Mathematics Education Preparation Programs***Margaret J. Mohr-Schroeder, *University of Kentucky*W. Gary Martin, *Auburn University*Marilyn Elaine Strutchens, *Auburn University*

In a rapidly changing educational landscape, policy shifts significantly impact curriculum and mathematics teacher preparation program design. This session will explore how to navigate these shifts, with explicit connections to AMTE's commitment to high-quality mathematics teacher preparation. Participants will leave with a toolkit in hand for advocating for their programs and implementing rapid response measures to keep up with the policy changes.

Session 162

Carson 1 (Hyb)

**Development of Mathematics Teacher Educators
Individual Session*****Developing, Supporting, and Researching Novice Elementary Mathematics Specialists as They Take On Leadership Roles***Nicole René Rigelman, *Portland State University*Chandra Lewis*, *RMC Research Corporation*

This five-year collaborative project across fifteen schools in a large urban district trained and supported 25 elementary mathematics specialists (EMSs) serving in varied classroom- and school-based leadership roles (i.e., generalist teachers, specialist teachers, coaches). Collecting data on shifts in educators' mathematical content, pedagogical, and leadership knowledge and practice, project partners sought to understand (1) how the EMS program prepared EMSs for their roles; (2) the supports and hindrances for these novice EMSs enacting their roles, and (3) relative effectiveness of each EMS role. These findings inform the work of EMSs, EMS teacher educators, and professional development providers.

Session 163

Carson 2 (Hyb)

**Mathematics Pedagogy
Individual Session*****Developing a Thinking Classroom: A High School Mathematics Teacher's Learning Trajectory***Lindsay Keazer, *Sacred Heart University*Brandon Pelter*, *Bridgeport Public Schools*

The publication of *Building Thinking Classrooms* called out the problem of students mimicking procedures, and captured mathematics teachers' attention internationally. This disrupted resistance to change previously seen in secondary mathematics classrooms and created a timely opportunity to study teacher change. We share findings from a study utilizing narrative inquiry to capture the experiences of a first-year teacher engaged in productive struggle to implement thinking-centered practices in an urban high school. We describe the obstacles that surfaced and the strategies that proved essential. We present a teacher learning trajectory situated in this teacher's case, offering representative potential for other teachers' learning.

Session 164
Teaching and Learning with Technology
Extended Session (10:30 – 12:00)

Carson 3

Supporting Prospective Mathematics Teachers to Design MAT-Enhanced Curriculum

Margaret Walton, *Towson University*
Nicholas E. Witt, *The University of Arizona*

Online platforms with mathematical action technology (MAT), like Desmos Activity Builder (DAB), allow teachers to design lessons with dynamic mathematical representations. Prospective math teachers (PMTs) should be prepared to teach with this technology. We introduce two cognitive processes, envisioning and repurposing, that we find useful for understanding how PMTs learn to use MAT-enhanced platforms. Participants will reflect on their own envisioning and repurposing and how the processes apply to methods classes as they engage in a DAB design activity, which, in our research, supported PMT preparation. Participants are encouraged to create DAB accounts before the workshop. No DAB experience required.

Session 165
Equity, Social Justice, and Mathematics Teacher Education
Symposium (10:30 – 12:00)

Carson 4

Empowering Voices, Rehumanizing Spaces: The Rights of the Learner in Mathematics Education

Crystal Kalinec-Craig, *University of Texas at San Antonio*
Jennifer Ann Wolfe, *The University of Arizona*
Aubrey Neihaus*, *Wichita State University*
Imani Masters-Goffney*, *University of Maryland-College Park*
Kathryn Mary Rupe*, *Western Washington University*
Charles Wilkes II, *University of California, Davis*

Our session introduces participants to the Torres' Rights of the Learner (to feel safe and respected; to be confused; to claim a mistake and revise your thinking; to speak, listen, and be heard; and to write, do, and represent what makes sense to you) and to Gutiérrez's rehumanizing mathematics education framework. Our multifaceted presentation will offer participants a selection of three opportunities to engage with five authors about how they leverage Torres' Rights of the Learner as a means of rehumanizing their practice for each and every learner. Implications for teaching, research, and policy will be discussed.

Session 166
Professional Development and Coaching
Individual Session

Nevada 2

Balancing Acts: An Innovative Instructional Routine for Developing Equality and Equivalence in K-12 STEM Education

Steven Greenstein, *Montclair State University*
Nicole Panorkou, *Montclair State University*

The concepts of equality and equivalence are fundamental to advanced mathematics and other STEM subjects. The study of change and variation that underlies them is often neglected in school, even though it is foundational to concepts in elementary, middle, and high school. Without this foundation, students will find themselves unprepared for college-level coursework in mathematics and the natural sciences. In this proposal, we share work that seeks to address this issue. We describe a novel instructional routine called "Balancing Acts," which we are designing to promote student understanding of equality and equivalence within K-12 math and science education.

Session 167
Practice-Based Experiences for Prospective or Practicing Teachers
Individual Session

Nevada 3

Raising the Bar: The Impact of Mediated Field Experience on Teacher Preparation

Valorie Lynn Zonnefeld, *Dordt University*
Ryan Zonnefeld, *Dordt University*

This session outlines a study conducted in elementary and secondary math methods courses which met onsite in elementary and middle schools, incorporating a Mediated Field Experience model. The presentation will delve into the design of these experiences, alongside both quantitative and qualitative data gathered during the courses. Survey results revealed statistically significant increases in mathematics teaching efficacy, supported by a qualitative matched pairs analysis which affirmed the increase. Attendees will have the opportunity to explore how to incorporate similar experiences into their educational programs.

Session 168
Practice-Based Experiences for Prospective or Practicing Teachers
Individual Session

Nevada 4

Noticing and Instructional Vision Through Reflection in Argumentation Focused Discussions

Rachel B. Snider, *The College of New Jersey*
Calli Shekell*, *Thiel College*
Dionne Cross Francis, *University of North Carolina at Chapel Hill*
Pavneet Kaur Bharaj*, *California State University*

In this session, we present findings from a study investigating what PSTs notice when watching video of their own teaching. Secondary PSTs each led a simulated argumentation focused discussion on a task related to unit rates, which was video recorded. PSTs then watched and reflected on their discussions using a framework for argumentation focused discussion. We analyzed their reflections to determine which aspects of argumentation-focused discussions the PSTs noticed and what their noticings reveal about their instructional vision. The session will stimulate discussion about the role of video and reflection frameworks in supporting PSTs' noticing and development of instructional vision.

Session 169
Mathematics Education Policy and Program Issues
Report Session

Nevada 5

Census of Mathematics Content and Methods Courses in Kentucky's Elementary Teacher Preparation Programs

Daniel L. Clark, *Western Kentucky University*

Publicly available information was gathered from Kentucky's elementary teacher preparation program websites regarding their mathematics content and methods courses. Similarities, differences, and uniqueness of program structures will be discussed. While most programs address a wide range of mathematical content and pedagogy issues, no programs meet established standards for the mathematical preparation of elementary teachers with respect to the number and type of courses offered. Reasons for and implications of this disconnect between the programs and the standards will be discussed. This session would be of particular interest to teacher preparation program leaders and standards authors.

Picturing the Phenomenon of Being a Teacher

Tara Heikila, *Washington State University*
Kristin Lesseig, *Washington State University Vancouver*

This session presents the preliminary results of a hermeneutic phenomenological research study focusing on the phenomenon of being a mid-career middle school mathematics educator in 2024. Using photovoice methodology, teachers shared their lived experiences through interviews and photographs that culminated in a community photo gallery. We present an alternative approach to thinking about the wicked problem of teacher retention and invite you to join us in this exploration.

Session 170
Teaching and Learning with Technology
Report Session

Nevada 6

Integrating Video Feedback in the Classroom: Preservice and Inservice Math Teachers' Perspectives

Michele Cudd, *Morehead State University*
Jenna Menke, *Ball State University*
Stacey C. Zimmerman, *Western Carolina University*
Elyssa Stoddard, *State University of New York at Oneonta*

This study examined the use of video feedback by four mathematics teacher educators at different institutions teaching courses for preservice and inservice teachers. The results of a pre- and post-survey suggest the experience of receiving video feedback has positively influenced pre- and inservice teachers' perceptions of receiving video feedback in general. Additionally, there was an increase in the percentage of pre- and inservice teachers indicating they would consider implementing video feedback in their (future) classrooms.

Preparing Preservice Teachers to Evaluate Fraction Digital Math Games

Allison Leatrice Roxburgh, *Idaho State University*

This report session will present findings from a study that examined how elementary preservice teachers evaluated the fraction content and design features in digital math games. It will also explore implications for integrating digital math games into teacher preparation integration and propose recommendations for future research.

Session 171
Mathematics Pedagogy
Individual Session

Nevada 7

Preservice Teachers' Learning of Teaching Mathematics Through Problem Posing in Elementary Mathematics Methods Courses

Jermaine R. Howell, *Michigan State University*
Ahmad Wachidul Kohar, *Michigan State University*

This session will focus on the implementation of the problem posing learning instructional model in elementary mathematics methods courses for mathematics teacher educators to support preservice teachers' learning and instructional practices. The session will also showcase key aspects of creating problem scenarios rooted in social justice issues and predicting mathematical problems that preservice teachers pose from real-world contexts. Our approach draws inspiration from Cai's (2022) problem posing-based learning instructional model, emphasizing the integration of social justice themes into mathematical problem scenarios while prioritizing attainable mathematical and social justice objectives.

Session 172
Teaching and Learning with Technology
Individual Session

Crystal 2

A Mile Wide and an Inch Deep: Artificial Intelligence as a Mathematics Curriculum Development Tool

Amanda Gantt Sawyer, *James Madison University*
Zareen Aga*, *James Madison University*
Marcus Wolfe*, *James Madison University*

Come learn about an investigation into 191 ChatGPT text responses, each corresponding to an elementary Common Core mathematical standard. You will have the opportunity to become aware of the characteristics of ChatGPT's responses, their level of cognitive demand, and how to address these issues with preservice teachers using Mathematics Education Prompt Engineering.

Session 173
Professional Development and Coaching
Individual Session

Crystal 3

Exploring Equitable Teaching: Insights Into the Relationships Between Talk, Task, Doing, and Teacher Identity

Ayanna Perry, *Knowles Teacher Initiative*

We share the curriculum and experiences of early career secondary mathematics teachers, examining the relationship between talk, task, and doing in their classrooms, aligned with Common Core mathematical practices. We share how investigating these relationships coupled with identity reflections, in a professional development setting, influenced conceptions of equitable math practices for inservice teachers. From this discussion, coaches, instructors, and administrators can gain new approaches encouraging introspective identity exploration and new ideas for discussing equitable teaching with current or prospective teachers. In addition, participants can glean insights from our shared successes and hurdles in advancing equitable teaching practices through practitioner inquiry.

Mathematics Teacher Educators' Reflections on Preservice Teachers' Fraction Multiplication Think-alouds

Tegan Nusser, *Bradley University*
Bona Kang, *Ohio Wesleyan University*
Brooke Krejci*, *University of Wisconsin - River Falls*

How preservice teachers (PSTs) learn to represent fraction multiplication with subdivision visually is an ongoing area of research. We describe instructional task design implications from PSTs' think-alouds of two non-unit fraction multiplication tasks. PSTs began to internalize the unit reference, emphasizing "of," but continued their explanations using procedural reasoning by not mentioning the second fraction as the unit of reference in their subsequent descriptions. We emphasize the importance of engaging PSTs in contextual problems and using those contexts to help them internalize the unit of reference when reasoning with fraction area models.

Understanding Elementary Teachers' Mathematics Curricular Reasoning: Navigating Multiple Resources, Student Needs, and Institutional Expectations

Bima Sapkota, *The University of Texas Rio Grande Valley*
Doris Fulwider, *Purdue University*
Asenath Odoni, *Purdue University*

In this session, we present the similarities and differences in two elementary teachers' curricular reasoning using Breyfogle and colleagues' (2010) curricular reasoning framework, which proposes curricular knowledge, vision, and trust as components. We found that teachers working within a common curricular context (i.e., same school and set of resources) may possess similar curricular knowledge but exhibit different curricular visions and levels of trust in those resources. We suggest activities that teacher educators might consider incorporating into mathematics methods courses and professional development programs to help both pre-service and in-service teachers reflect on their curricular knowledge, vision, and trust.

Engaging in Partnership: Findings From a Systematic Literature Review on Research Partnership Processes in Mathematics Education

Megan Che*, *Clemson University*
Colleen McLean Eddy, *University of North Texas*
Trena Wilkerson*, *Baylor University*

We share findings from a systematic literature review of research partnership processes in mathematics education, how research partnerships are characterized and operationalized in math education literature, and our framework for inquiry with research partnership processes in mathematics education. We also connect this inquiry framework to our systematic literature review findings.

Session 176
Mathematics Pedagogy
Discussion Session

Tahoe (Hyb/Reg)

How to Use Children's Literature in the Work of Preparing Prospective Teachers of Mathematics

Mahtob Aqazade, *Illinois State University*
 Laura Bofferding, *Purdue University*

In this hybrid discussion session, our goals are to explore and share our experiences of teaching and learning mathematics using children's literature and build an AMTE community circle for future collaborations. Drawing from the mathematical exploration lens, we will engage the participants in the open notice and wonder reads, focused math lens reads, and idea investigations with different children's literature, and discuss the challenges and benefits of mathematizing children's literature with elementary students and elementary prospective teachers.

Session 177
Equity, Social Justice, and Mathematics Teacher Education
Individual Session

Carson 1 (Hyb)

Why Queer Education IS Math Teacher Education: Our Obligation to Use Data For Justice

Courtney Koestler, *Ohio University*
 Kyle S. Whipple, *University of Wisconsin-Eau Claire*

Alexa Lee-Hassan, *University of Illinois Chicago*
 Brette Garner*, *University of Denver*

LGBTQ+ issues are an important, necessary, and integral part of mathematics teacher education and teacher preparation more broadly. MTEs must be knowledgeable and stay up to date on these issues so that they can be inclusive of and teach aspiring and practicing teachers to support LGBTQ+ students and students with LGBTQ+ families. In this session we will explore the GLSEN School Climate Survey, engage in a few sample tasks related to survey data, and develop relevant tasks to our individual contexts to engage students and teachers in critical learning about LGBTQ+ issues within their schools and communities.

Session 178
Practice-Based Experiences for Prospective or Practicing Teachers
Individual Session

Carson 2 (Hyb)

Stop Preachin' and Let'em Teach! Using Agape to On-Ramp Teachers Toward Desired Mathematics Teaching Practices

Joel Amidon, *University of Mississippi*
 Candies Winfun-Cook*, *University of Mississippi*

Angela Harris, *University of Mississippi*
 Kathryn Amidon*, *University of Mississippi*

Preparing teachers on how to teach mathematics can involve lectures, demonstrations, or other methods, which may be informative, but not effective toward changing practice. And to challenge teachers to exhibit teaching practices informed by agape, or unconditional love, can be even more challenging when teachers lack tangible examples. Instead, why not allow teachers to practice using pedagogy shaped by agape in small groups that allows for feedback from instructional leaders and their peers on how to improve. Participants in the session will hear research findings and experience a collaborative structure that has been refined in an elementary mathematics methods classroom.

Session 179
Practice-Based Experiences for Prospective or Practicing Teachers
Individual Session

Nevada 1

Learning to Notice in Video Clubs: Preservice Teacher Noticing during Mathematics Instruction

Sandi Cooper, *Baylor University*
 Margeaux Smith, *Baylor University*

Andrea Gayle Martinez*, *Baylor University*
 Blaire Thornton*, *Baylor University*
 Shelby Taylor*, *Baylor University*

This session will focus on the implementation of video clubs within an elementary mathematics methods courses to engage preservice teachers in noticing. The presenters will share data analysis with results and lead a discussion of the implications for teacher education.

Session 180

This session has been moved to Saturday, February 8, 8:15 - 9:15 AM in Crystal 2, at the request of the presenters. [Click here to be redirected to the session description.](#)

Session 181
Teaching and Learning with Technology
Individual Session

Nevada 3

Making Math Meaningful: Empowering Preservice Mathematics Elementary Teacher to Create Model Eliciting Activities Using AI

Cathrine Maiorca, *California State University, Northridge*
Megan Burton, *Auburn University*
Jacob Martin, *Oklahoma State University*

Jessica Ivy*, *Purdue University Northwest*
Daniel Edelen, *Georgia State University*
Craig Schroeder*, *Fayette County Public Schools*
Thomas Roberts*, *Bowling Green State University*

Explore ways mathematics teacher educators utilize Artificial Intelligence (AI) with preservice elementary mathematics teachers to promote the creation of model-eliciting activities in elementary mathematics methods courses. Participants will engage in the creation and analysis of model eliciting activities created by elementary preservice teachers using AI as a collaborative partner.

Session 182
Practice-Based Experiences for Prospective or Practicing Teachers
Individual Session

Nevada 4

Opportunities for Job Embedded Teacher Learning through Collaborative Engagement with Student Data

Danielle Moloney Gallagher, *North Carolina State University*
Temple Walkowiak, *North Carolina State University*

In this session, we will present current research about opportunities for elementary teacher learning through interactions with student data in mathematics professional learning communities. We will engage participants in discussion of specific discourse moves that can support rich opportunities for teacher learning in collaborative spaces.

Session 183
Professional Development and Coaching
Discussion Session

Nevada 5

Leveraging Artificial Intelligence to Scale Up Professional Development and Teacher Education

Yasemin Copur-Gencturk, *University of Southern California*
Ahreum Han, *University of Southern California*
Jingxian Li*, *University of Southern California*

In this discussion, we explore the integration of AI into online professional development and teacher education for both pre-and in-service teachers. Our interactive session demonstrates how our AI-driven system enhances the teaching of proportional reasoning through interaction and personalized feedback. This session highlights the system's capabilities in supporting teachers' development in both content knowledge and pedagogical content knowledge. We will discuss the advancements in AI technology and their potential to overcome challenges in teacher training. The session invites mathematics teacher educators, professional development coordinators, and school/district administrators to consider how AI can enhance and scale up high-quality learning opportunities.

Session 184
Collaborations and Partnerships
Individual Session

Nevada 6

Reporting on a Four Year Collaboration with Nonprofit Preparing Teachers with Emotional Intelligence for the Classroom

Todd Frauenholtz, *Bemidji State University*
Jenna O'Dell*, *Bemidji State University*
Rebecca Hoffman*, *Bemidji State University*

This presentation shares a study exploring the impact of three years of socioemotional learning (SEL) training with preservice and new teachers. Data were collected in interviews and a survey at the end of their student teaching and first year of teaching.

Session 185
Professional Development and Coaching
Individual Session

Nevada 7

Using Video to Support Equitable Noticing: A Focus on Video Selection and Facilitation

Elizabeth A. van Es, *University of California, Irvine*
Tara Barnhart, *Chapman University*
Julie Amador, *University of Idaho*

Sarah Larison*, *Northwestern University*
Miriam Sherin*, *Northwestern University*
Jennifer Richards*, *Northwestern University*

Presenters will expand research on the productive use of video for teacher learning. Through collaborations with mathematics teacher leaders, we generated features of critical events of video to expand elementary and secondary teachers' noticing toward issues of equity in practice. We also consider how facilitators enacted practices to focus teachers' noticing on these features. We discuss how these features and practices coordinate to support mathematics teachers and teacher leaders expanding their noticing for responsive, affirming, and equitable instruction. We offer frameworks to support teacher educators' and mathematics coaches' integration of video in professional learning contexts.

Session 186
Teaching and Learning with Technology
Individual Session

Crystal 2

Design of a Technology Based Geometric Thinking Framework to Support Teachers' Noticing of Students' Thinking

Karen Hollebrands, *North Carolina State University*
Michael Hoyes, Jr., *North Carolina State University*

Kayla Chandler, *East Carolina University*
Ruby Ellis, *North Carolina State University*

This session will summarize frameworks and theories that have been used to describe geometric thinking (e.g., Geometric Habits of Mind, Van Hiele levels). We will highlight similarities and differences and offer a new framework to characterize geometric thinking when students are using technology. This framework aims to assist teachers and mathematics teacher educators (MTEs) in identifying and describing students' geometric thinking. We will illustrate the framework by engaging participants in technology-based geometry tasks that could be used in a content or pedagogy-focused course for middle or high school teachers.

Session 187
Professional Development and Coaching
Individual Session

Crystal 3

Creating Research Informed Instructional Nudges for Elementary Teachers

Eric Partridge, *University of Missouri*
Samuel Otten, *University of Missouri*

This individual session focuses on a research project exploring instructional nudges as a model of professional development for elementary teachers. The development of instructional nudges (i.e., bite-sized pedagogical actions presented digitally and asynchronously) was based upon observations of ten teachers' typical mathematics instruction. The research then focused on the factors that influenced these teachers' selection of nudges to try out and teachers' experience with nudges as a model of professional development. Attendees will learn about the process of nudge development, receive access to the presented nudges, hear findings about teacher preferences, and identify connections to their work.

Session 188
Professional Development and Coaching
Individual Session

Crystal 4

Using Reciprocal Peer Coaching to Improve Mathematics Teaching and Build Community Within a High School

Amanda Jansen, *University of Delaware*
Thomas Matthew Becker*, *MOT Charter School*
Samantha Anne Kasehagen*, *MOT Charter School*

A university-based mathematics teacher educator and two high school mathematics teachers will share the history and context of reciprocal peer coaching at their school, as well as benefits and challenges of reciprocal peer coaching reported by teachers in interviews.

Session 189
Practice-Based Experiences for Prospective or Practicing Teachers
Individual Session

Crystal 5

Secondary Student Teacher's Use of Curricular Reasoning in Making Decisions During Planning

Erika Crystal, *Brigham Young University*
Dawn Teuscher, *Brigham Young University*

The Curricular Reasoning Model explains how teachers reason about the role of the four classroom elements: mathematics, curriculum, teacher, and students. Data collected from secondary mathematics student teachers gives insight into how the Curricular Reasoning Model and accompanying self-assessment survey assist them in making intentional decisions during planning. Novice and preservice teachers benefit from reflecting on which curricular reasoning aspects they engage with and which ones they overlook during planning. The Curricular Reasoning Model also provides teachers with an organizing structure to prioritize their decisions during planning.

Session 190

Session 190 is on Friday, February 7, 2025, 2:45-3:45 PM in Carson 3. [Click here to be redirected to the session description.](#)

Session 191

Session 191 is on Saturday, February 8, 2025, 9:30-10:15 AM in Nevada 6. [Click here to be redirected to the session description.](#)

SATURDAY, FEBRUARY 8, 2025

12:15 PM - 1:30 PM



NETWORKING LUNCH

SUMMIT PAVILION

Please join us for lunch and a feedback session.

[Click here to access the menu.](#)



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When you see any of these individuals at our AMTE conference, we hope that you will take the time to express your own gratitude for their dedication to the organization and to the success of the 2025 conference.

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