



LEVEL 2 Salons, Signature 2 Room and Hospitality Suites



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Session Information

- Thursday, February 8 Morning Sessions
 - 10:15 am 11:00 am
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- Thursday, February 8 Afternoon Sessions
 - 1:15 pm 2:15 pm
 - 2:30 pm 3:30 pm
 - 3:30 pm 4:30 pm Poster Sessions
- Friday, February 9 Morning Sessions
 - 8:30 am 9:30 am
 - 9:45 am 10:45 am (includes extended sessions)
 - 11:00 am 11:45 am
- Friday, February 9 Afternoon Sessions
 - 1:15 pm 2:15 pm (includes extended sessions)
 - 2:30 pm 3:30 pm
 - 4:00 pm 5:00 pm
 - 5:15 pm 6:45 pm Judith Jacobs Lecture
- Saturday, February 10 Sessions
 - 8:30 am 9:30 am
 - 9:45 am 10:30 am
 - 10:45 am 11:30 am

Speaker Index & Proposal Reviewers AMTE Information (links outside this document)

AMTE 2024 Leadership

AMTE Affiliates

History of the Judith E. Jacobs Lecture

Historical Listing of AMTE Presidents

More Information on AMTE.net

2024 Annual Conference Information

Dear AMTE Friends,

Welcome to the Twenty-eighth Annual Conference of the Association of Mathematics Teacher Educators (AMTE) in Orlando, FL at the Rosen Centre Hotel. As our organization turns 32 years old our members have access to expanded services including webinars, a virtual institute, scholarships, awards, and community circles. This year the location for our conference presented challenges. We have worked to create a conference environment that maximizes opportunities for sharing, growing, and learning from each other, while striving to keep everyone safe. Through our conference app we will offer opportunities to asynchronously connect and communicate with colleagues for a 2-week period that includes days before and after the conference. This will include members not attending the conference. We hope you will engage in asynchronous and live session chats with presenters and colleagues. This feature will also allow presenters to share their work more widely as they can reach members beyond those who are able to attend their sessions. Below are some things you can expect over the next few days:

INVITED SPEAKERS

Our opening keynote address Critical Conversations: AMTE Standards for Preparing Teachers of Mathematics In Social and Political Contexts takes place in the Thursday General Session at 8:15 am in the Junior Ballroom. Panel Members include:

- Jenny Bay-Williams, University of Louisville •
- Liza Bondurant, Mississippi State University •
- Yvonne Lai, University of Nebraska-Lincoln
- Richard Velasco, University of Oklahoma •
- Eva Thanheiser, Portland State University (Moderator) •

Dorothy Y. White will give the Judith E. Jacobs Lecture with a talk titled, Navigating Oz: My Journey with Three Essential Companions on Friday afternoon at 5:15 pm in the Junior Ballroom.

Nicole Rigelman, recipient of the AMTE Excellence in Teaching in Mathematics Teacher Education Award, will present a talk titled, Supporting Learners with Seeing the Wonder, Joy, and Beauty of Mathematics on Thursday afternoon at 1:15 pm in Junior Ballroom F.

Megan Wickstrom, recipient of the 2023 Early Career Award will present a talk titled, Empowering Elementary Teachers: Reflections on Task-Design and Dimensions of Equity on Friday morning at 8:30 am in Junior Ballroom G.

Melissa Adams Corral, recipient of the 2023 Dissertation Award will present a talk titled, When We Relate: Towards People-Centered Research on Friday morning at 9:45 am in Junior Ballroom G.

PROGRAM INFORMATION

There are 108 Individual Sessions, 35 Discussion Sessions, 73 Reports, 3 Extended Sessions, 8 Symposium Sessions, and 40 Poster Presentations on the program. There are 582 speakers on this year's program. There were 432 proposals submitted for review. The program committee accepted 62% of the proposals for the program including presentations, discussions and extended sessions, reports, and posters. The program also includes 3 invited presentations, 3 award-winner sessions, 7 AMTE committee sessions, and 3 sessions presented by AMTE Sponsors.

OPENING MINDS TO ADVANCE EQUITY

AMTE continues to have equity and inclusion at the forefront of our work as an organization. Sessions like the Opening Keynote, the Advocacy Lunch, and many others on our program, provide opportunities to engage with issues of equity and social justice. The conference is a great opportunity to connect and create community. Let us use our gathering in Florida to be there, be visible, and be an example of embracing inclusivity to help everyone succeed.

alindo

Enrique Galindo, AMTE President

Than Stoken -

ulue James Julie James. AMTE AVP for Conferences

Shari Stockero, AMTE Executive Director Jennifer Ward, 2024 AMTE AVP for Annual Conference Program

CONFERENCE SCHEDULE

2024 ANNUAL AMTE CONFERENCE

February 8-10, 2024

WEDNESDAY, FEBRUARY 7, 2024

4:30 pm - 7:30 pmAMTE Registration Desk Open8:00 pm - 9:00 pmReception for BIPOC Scholars

THURSDAY, FEBRUARY 8, 2024

7:00 am - 5:00 pm	AMTE Registration Desk Open
10:00 am - 5:00 pm	Exhibits Open
8:15 am - 10:00 am	Opening Session: The AMTE Standards for Preparing Teachers of Mathematics:
	Re-examining the Standards in 2024
10:15 am - 11:00 am	Concurrent Sessions
11:15 am - 12:00 pm	Concurrent Sessions
12:00 pm - 1:15 pm	Advocacy Lunch
1:15 pm - 2:15 pm	Concurrent Sessions
2:30 pm - 3:30 pm	Concurrent Sessions
3:30 pm - 4:30 pm	Poster Session and Snacks
6:00 pm - 7:30 pm	Reception for Graduate Students & Early Career Faculty

FRIDAY, FEBRUARY 9, 2024

7:00 am - 8:15 am	Breakfast and Affiliate Meetings
7:30 am - 4:30 pm	AMTE Registration Desk Open
8:00 am - 5:00 pm	Exhibits Open
8:30 am - 9:30 am	Concurrent Sessions
9:45 am - 10:45 am	Concurrent Sessions
11:00 am - 11:45 am	Concurrent Sessions
11:45 am - 1:15 pm	Lunch and Business Meeting
1:15 pm - 2:15 pm	Concurrent Sessions
2:30 pm - 3:30 pm	Concurrent Sessions
2:30 pm - 3:30 pm 3:30 pm - 4:00 pm	Concurrent Sessions Break
2:30 pm - 3:30 pm 3:30 pm - 4:00 pm 4:00 pm - 5:00 pm	Concurrent Sessions Break Concurrent Sessions

SATURDAY, FEBRUARY 10, 2024

7:00 am - 8:15 am	Breakfast
7:00 am - 8:15 am	VP & AVP Breakfast Meeting
7:30 am - 10:30 am	AMTE Registration Desk Open
8:30 am - 9:30 am	Concurrent Sessions
9:45 am - 10:30 am	Concurrent Sessions
10:45 am - 11:30 am	Concurrent Sessions
11:30 am - 1:00 pm	Lunch and Networking

CONFERENCE INFORMATION

FINDING THE CONFERENCE AREA

Conference session rooms are located in the Junior Ballrooms F-G on the 1st Floor and Salons 11-24 on the 2nd Floor of the Rosen Centre Hotel. Meals will be held in Executive Ballrooms H-I on the 1st Floor. For your convenience, maps are shared in the conference app, <u>in this program</u>, and are also available on the Rosen Center webpage at <u>https://www.rosencentre.com/about-us/hotel-map/</u>. For other questions about hotel facilities, please contact the volunteers at the AMTE Registration Desk, the members of the <u>Conferences Committee</u>, or hotel staff.

CONFERENCE REGISTRATION DESK

Please stop by the AMTE Registration Desk (Rosen Centre Registration Desk 3), located on the 1st Floor hallway outside Junior Ballroom G, 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 - 5:00 PM
FRIDAY	7:30 AM - 4:30 PM
SATURDAY	7:30 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, participant 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 amte2024, and then select Continue.
- 4. Open the Conference Guide.

If you are unable to access the conference Guidebook, please contact <u>amte-support@amte.net</u> for assistance. You can also access the web version of Guidebook at <u>https://guidebook.com/g/amte2024</u>

CANCELLATIONS AND PROGRAM CHANGES

For updated lists of cancellations and other program changes, visit <u>https://amte.net/content/program-updates-2024-annual-amte-conference</u> or the conference app.

SPONSORS AND 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 on the 2nd floor hallway outside the Salons.

EXHIBIT AREA HOURS THURSDAY, FEBRUARY 8 FRIDAY, FEBRUARY 9

10:00 AM – 5:00 PM 8:30 AM – 5:00 PM

WIRELESS INTERNET ACCESS

Conference attendees who are staying at the Rosen Centre Hotel receive complimentary internet access in individual guestrooms for the duration of the conference. Complimentary wireless internet access is provided in the conference/meeting area of the hotel for conference attendees and for AMTE usage throughout the conference. Network: Convention Wireless Password (case sensitive): RCH46

HOTEL PARKING INFORMATION

Valet parking is \$40/day valet, while self-parking is \$14/day (reduced from normal rate of \$28/day).

CONFERENCE PHOTOGRAPHS

AMTE member volunteers will be taking photographs during the conference 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 Executive Director, Shari Stockero, at the conference or via email at <u>executivedirector@amte.net</u>.

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 (Registration Desk 3). Or you can drop off items at the Manager-On-Duty desk located at the front desk in the hotel lobby. AMTE and the hotel are not responsible for items being left in the session rooms and in the conference area.

COMMITTEE MEETINGS & COMMUNITY CIRCLES

AMTE Committees and Community Circles will meet during the conference according to the schedule provided to committee leaders. These meetings will take place in Hospitality Suites 255, 256, 261, & 262 on the 2nd floor. The Hospitality Suites are located on the left just past the Grand Staircase and the Pool Balcony.

AFFILIATE MEETINGS

AMTE Affiliates will meet during breakfast on Friday Morning in Executive Ballrooms H & I. 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 in the hallway space between the Junior and Executive Ballrooms. Please take advantage of this area to share your conference experiences and engage in productive discussions with other conference attendees.

ADDITIONAL SPACES FOR ATTENDEES

The following spaces are available for use by conference attendees. Visit the registration table to request key card access to each space.

- Parents Room: Hospitality Suite 248
- Prayer & Meditation Room: Hospitality Suite 251

Social Media

LIKE AMTE ON FACEBOOK



FOLLOW AMTE ON X (FORMERLY TWITTER)



facebook.com/AMTE.net

@AMTEnews

Use **#AMTE2024** to join public discussion around the conference.

2024 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.

Julie James, (AVP for Conferences), The University of Mississippi, jjames1@olemiss.edu Cynthia Taylor (AVP-Elect), Millersville University, cynthia.taylor@millersville.edu Gabriel Matney, Bowling Green State University, gmatney@bgsu.edu Gail Stewart, University of South Florida, gailstewart@usf.edu Courtney Koestler, Ohio University, <u>koestler@ohio.edu</u> Byungeun Pak, Utah Tech University, <u>B.pak@utahtech.edu</u> Ashley Schmidt,University of Wisconsin - Milwaukee, <u>schmidan@uwm.edu</u> Bethany LaValley, The University of Mississippi, <u>lavalley@olemiss.edu</u> Shari Stockero (AMTE Executive Director), Michigan Technological University, <u>stockero@mtu.edu</u> Farshid Safi (Board Member-At-Large), University of Central Florida, <u>farshid.safi@ucf.edu</u> Derek Sturgill, University of Wisconsin-Stout, sturgilld@uwstout.edu

LOCAL ARRANGEMENTS

Eugenia Vomvoridi-Ivanovic (co-AVP), University of South Florida, <u>eugeniav@usf.edu</u> Sarah van Ingen Lauer (co-AVP), University of South Florida, <u>vaningen@usf.edu</u>

Aline Abassian Sadat Abubakar Lisa Amick Liza Bondurant Amber Brown Josh Hertel Jacqueline Karastamatis Maral Karimi Bailey Kaufman Laura Kent

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ANNUAL CONFERENCE PROGRAM COMMITTEE

Jennifer Ward (AVP for Conference Program), Kennesaw State University, <u>ward.jennifer.k@gmail.com</u> Nirmala Naresh (AVP-Elect), University of North Texas, <u>nirmala.naresh@unt.edu</u> Jeremy Zelkowski (Past AVP), University of Alabama, jzelkowski@ua.edu Lisa Skultety, University of Central Arkansas, <u>lskultety@uca.edu</u> Luke Reinke, University of North Carolina Charlotte, <u>Ireinke@uncc.edu</u> Stefanie Livers, Bowling Green University, <u>slivers@bgsu.edu</u> Casey Hawthorne, Furman University, <u>casey.hawthorne@furman.edu</u> Hartono Tjoe, Pennsylvania State University, Berks, <u>hht1@psu.edu</u> Denise Polojac-Chenoweth, University of South Florida, <u>denisec@mail.usf.edu</u> Montana Smithey, Georgia Southern University, <u>msmithey@gerogiasouthern.edu</u> Sara Donaldson, Wheaton College, <u>donaldson_sara@wheatoncollege.edu</u> Alesia Moldavan, Georgia Southern University, <u>amoldavan@georgiasouthern.edu</u> Jennifer Tobias, Illinois State University, <u>itobias@ilstu.edu</u> Jonathan Watkins, Ball State University, <u>idwatkins@bsu.edu</u> Tonya Bartell, Michigan State University, tbartell@msu.edu

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.

ADVOCACY COMMITTEE SESSION

Session 32: Awareness to Action: Defending Against Attacks on Queer People and Discussions of Racism in School; Thursday, February 8, 1:15-2:15 PM; Junior Ballroom G

AFFILIATE CONNECTIONS COMMITTEE SESSION

Session 66: *Come Network With Other Affiliates to Discover the What, Why, and How;* Friday, February 9, 8:30-9:30 AM; Salon 12

EQUITY COMMITTEE SESSION

Session 145: *Looking Back to Move Forward: Examining Past AMTE Presentations on Equity;* Friday, February 9, 4:00-5:00 PM; Salon 23

GET THE FACTS OUT TASK FORCE SESSION

Session 118: *Get the Facts Out: Transforming the Narrative of the Teaching Profession to Address Teacher Shortage;* Friday, February 9, 1:15-2:15 PM; Salon 12

PROFESSIONAL DEVELOPMENT COMMITTEE SESSION

Session 132: *Discussions of How to Design, Teach, and Assess within Methods of Teaching Courses;* Friday, February 9, 2:30-3:30 PM; Salon 23

PUBLICATIONS DIVISION SESSION

Session 88: *Have an Idea for a Manuscript? Come Chat with AMTE's Publications Editors;* Friday, February 9, 9:45 - 11:45 AM (Extended Session); Salon 19

TECHNOLOGY COMMITTEE SESSION

Session 103: *Emerging Technology: Tips for Utilizing AI in Mathematics Education from the AMTE Technology Committee;* Friday, February 9, 11:00-11:45 AM; Salon 23

2024 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 <u>www.amte.net</u>.

AMTE DISSERTATION AWARD



2024 DISSERTATION AWARD WINNERS

<u>Siddhi Desai</u>, Farleigh Dickinson University



Nina Bailey, Montclair State University

Siddhi and Nina have been invited to speak at the 2025 AMTE Annual Conference in Reno, NV.



2023 DISSERTATION AWARD WINNER PRESENTATION Melissa Adams Corral, University of Texas - Rio Grande Valley Session 79: *When We Relate: Towards People-Centered Research;* Friday, February 9, 9:45-10:45 AM; Junior Ballroom G

EARLY CAREER AWARD



2024 Early Career Award Winner Hyunyi Jung, University of Florida

Hyunyi has been invited to speak at the 2025 AMTE Annual Conference in Reno, NV.



2023 Early Career Award Winner Megan Wickstrom, Montana State University

Session 64: Empowering Elementary Teachers: Reflections on Task-Design and Dimensions of Equity; Friday, February 9, 8:30-9:30 AM; Junior Ballroom G

EXCELLENCE IN TEACHING IN MATHEMATICS TEACHER EDUCATION

2024 Excellence In Teaching in Mathematic Education Award Winner <u>Nicole Rigelman</u>, Portland State University

Session 31: Supporting Learners With Seeing the Wonder, Joy, and Beauty of Mathematics; Thursday, February 8, 1:15-2:15 PM, Junior Ballroom F



NATIONAL TECHNOLOGY LEADERSHIP INITIATIVE FELLOWSHIPS

2024 AMTE NTLI Award WINNERS

Cathrine Maiorca, Oklahoma State University Megan Burton, Auburn University Jessica Ivy, Purdue University Northwest Thomas Roberts, Bowling Green State University



Session 5: Developing Mathematics Lessons and Assessments with Chatbots for Learning in Teacher Education: Innovation and Challenges; Thursday, February 8, 10:15-11:00 AM; Salon 15

2024 MTE OUTSTANDING REVIEWER AWARD



Dan Battey Rutgers, The State University of New Jersey

ELEMENTARY MATHEMATICS SPECIALISTS SCHOLARSHIPS

CONGRATULATIONS TO THE 2023 EMS SCHOLARSHIP RECIPIENTS!

<u>Kelly Lane</u>, Chicago Public Schools, Illinois <u>Molly McEldowney</u>, Berwyn South School District 100, Illinois <u>Amanda Wooten</u>, Jefferson County Public Schools, Kentucky



AMTE would like to thank our founding sponsor of the EMS Scholarships: The Math Learning Center mathlearningcenter.org

SUSAN GAY GRADUATE STUDENT

CONFERENCE TRAVEL SCHOLARSHIP

Congratulations to the 2024 Susan Gay Graduate Student Conference Travel Scholarship Recipients!

Kelly Womack Adams, North Carolina State University Alicia Erwin, Illinois State University Shaimaa Scrivner, University of Houston Seonmi Do, The Pennsylvania State University

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 51, Session 82, and Session 108.

CPM EDUCATIONAL PROGRAM

<u>CPM Educational Program (cpm.org)</u> is a California nonprofit 501(c)(3) serving the secondary mathematics education community with curriculum, professional development, and leadership. <u>CPM University Support</u> is pleased to sponsor AMTE and its <u>STaR Fellows Program</u> 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. <u>CPM University Support</u> provides complimentary curriculum materials to pre-service teacher candidates, mathematics teacher educators, and mathematics curriculum reviewers and researchers.

MATH LEARNING CENTER

<u>The Math Learning Center (MLC)</u> is a nonprofit organization serving the education community. Our mission is to inspire and enable all individuals to discover and develop their mathematical confidence and ability. We offer innovative and standards-based instructional materials, related professional development, and a suite of <u>complementary resources</u>. These resources are available free through the <u>Bridges University Program</u>, which provides college- and university-based teacher educators and their students access to the full contents of *Bridges® in Mathematics PK–5* curriculum, as well as *Bridges Intervention* and *Concept Quests*.

MLC is the founding sponsor of the <u>AMTE Elementary Mathematics Specialist Scholarships</u>. The recipients of these awards receive funding to enhance their mathematics knowledge, teaching, and leadership by enrolling in university coursework to become certified mathematics specialists.

MAIER MATH FOUNDATION

The <u>Maier Math Foundation</u> was created by <u>The Math Learning Center</u>, a nonprofit with a shared mission to inspire and enable all individuals to discover and develop their mathematical confidence and ability. The foundation is named in honor of Math Learning Center cofounder, Professor Gene Maier. 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. With a focus on visual math models and inquiry-based, learner-focused instructional practices, the Maier Math Foundation facilitates collaboration with researchers and other nonprofit organizations to pursue common objectives, including developing a collection of meaningful mathematics routines through <u>Math at Home</u>.

GOLD SPONSOR

SILVER SPONSOR

GOLD SPONSOR

BUDAPEST SEMESTERS IN MATHEMATICS EDUCATION

<u>Summer@BSME</u> 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.

INFORMATION AGE PUBLISHING – IAP

Information Age Publishing – IAP is a social science publisher of academic and scholarly book series, monographs, handbooks, and journals. IAP's goal is to develop a comprehensive program of content that breaks down and defines specific niches in high-level research, in the fields of Education, Psychology, Management, Leadership, Mathematics, Educational Technology and Black Studies. AMTE is proud of our partnership with IAP as they continue to develop new books within the Association of Mathematics Teacher Educators (AMTE) Professional Book Series. IAP has also republished seven (7) monographs that were a part of the AMTE Monograph series, as well as the AMTE Standards. IAP also has an extensive list of products in the field of mathematics and look forward to adding yours to their program. Please click on this link to visit their virtual bookstore and to browse their current mathematics publications, as well as the AMTE monograph.

NCSM – Leadership in Mathematics Education

BRONZE SPONSOR

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.

BRONZE SPONSOR

BRONZE SPONSOR

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**

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**

Visit CPM.org/university

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

CPM Educational Program MORE MATH FOR MORE PEOPLE





The Math Learning Center (MLC) is a nonprofit organization serving the education community. Our mission is to inspire and enable all individuals to discover and develop their mathematical confidence and ability. We offer innovative and standards-based instructional materials, related professional development, and a suite of <u>complementary resources</u>. These resources are available free through the <u>Bridges University Program</u>, which provides collegeand university-based teacher educators and their students access to the full contents of Bridges® in Mathematics PK–5 curriculum, as well as Bridges Intervention and Concept Quests. MLC is the founding sponsor of the <u>AMTE Elementary</u> <u>Mathematics Specialist Scholarships</u>. The recipients of these awards receive funding to enhance their mathematics knowledge, teaching, and leadership by enrolling in university coursework to become certified mathematics specialists.

mathlearningcenter.org/university

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







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maiermathfoundation.org mathlearningcenter.org mathathome.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 inservice 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:

- Spend a summer in Budapest and learn from Hungarian teacher scholars.
- Study the Hungarian pedagogy, based on guided discovery, problem solving, mathematical creativity, and communication.
- Complete a week-long field experience at a mathematics camp for secondary students and obtain first-hand knowledge on how the Hungarian pedagogy is put into practice.
- Participate in small, lively classes taught in English.

bsmeducation.com





Association of Mathematics Teacher Educators

2024 AMTE Conference

Information Age Publishing



Featured Series:

The Association of Mathematics Teacher Educators (AMTE) Professional Book Series Editor: Babette M. Benken, CSU Long Beach

STEM

ORT GEOMETRY LABS

and Tactile

Research in Mathematics Education

Editors: Denisse R Thompson, University of South Florida; Mary Ann Huntley, Cornell University; and Christine Suurtamm, University of Ottawa

The AMTE Monograph Series

Editor: AMTE

Featured Books:



The Mathematics Teacher Education Partnership: The Power of a Networked Improvement **Community to Transform Secondary** Mathematics Teacher Preparation Edited by: W. Gary Martin, Auburn University; Brian R. Lawler, Kennesaw State University; Alyson E. Lischka, Middle Tennessee State University;



Beyond Provincialism: Promoting Global Competencies in Teacher and Educator Preparation

nd Wendy M Smith University of Nebraska - Lincoln

Edited by: Mahmoud Suleiman, California State University, Bakersfield; and Tonya Huber, Texas A&M International University



Mathematics as the Science of Patterns: Making the Invisible Visible to Students Through Teaching





Researching Pedagogy and Practice with Canadian Mathematics Teachers

Edited by: David A Reid, Universitetet i Aader: Christine Suurtamm, University of Ottawa; Annie Savard, McGill University: Elaine Simmt, University of Alberta; Dominic Manuel, University of Alberta; Lisa Lunney Borden, St. Francis Xavier University nd Richard Barwell, University of Ottawa



Problems in Algebra for Teachers By: Alexander Karp, Teachers College, Columbia University; and Julia Viro, Stony Brook University



Facilitator's Guidebook for Use of Mathematics Situations in Professional Learning

Celebrating 50 years (1961-2011)

Edited by: Egan I Chernoff, University of Saskatchewan:

Gale L. Russell, University of Regina; and Bharath Sriraman, University of Montana

Edited by: Rose Mary Zbiek, Pennsylvania State University; Glendon W. Blume, The Pennsylvania State University; and M. Kathleen Heid, The Pennsylvania State University



Building Support for Scholarly Practices in Mathematics Methods



Edited by: Signe E. Kastberg, Purdue University; Andrew M. Tyminski, Clemson University; Alvson E. Lischka, Middle Tennessee State



Special AMTE 2024 Conference Price \$40 for paperback + S/H \$60 for hardcover + S/H Use discount code: AMTE24 at checkout

Standards for Preparing Teachers

of Mathematics

STEM Teacher Preparation and Practice for the 21st Century: **Research-based Insights**

Edited by: Patrick M. Jenlink, Stephen F. Austin State University



Multilevel Modeling Methods with Introductory and Advanced Applications

Edited by: Ann A. O'Connell, Ohio State University; D. Betsy McCoach, University of Connecticut; and Bethany A. Bell, University of Virginia



International Perspectives on Mathematics Teacher Education

Edited by: Denisse R Thompson, University of South Florida; Christine Suurtamm, University of Ottawa; and Mary Ann Huntley, Cornell University

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By: Steve Rhine, Pacific University; Rachel Harrington. Western Oregon University: and Colin Starr, Willamette University

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Visit MTEP-related sessions at AMTE mtep.info/amte2024

EXHIBITORS

AMTE appreciates this year's Exhibitors for providing support for our conference. Please take an opportunity to thank them for their contributions to AMTE by visiting with them in the exhibit area located on the second floor outside Salons 13 through 18.

Exhibitor	Αβουτ Της Εχηιβιτ
CPM EDUCATIONAL PROGRAM	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 <u>booth.cpm.org</u> to learn more about CPM Educational Program and <u>cpm.org/university</u> to request complimentary access to CPM materials.
IAP INFORMATION AGE PUBLISHING – IAP	Information Age Publishing – IAP is a social science publisher of academic and scholarly book series, monographs, handbooks, and journals. IAP's goal is to develop a comprehensive program of content that breaks down and defines specific niches in high-level research, in the fields of Education, Psychology, Management, Leadership, Mathematics, Educational Technology and Black Studies. AMTE is proud of our partnership with IAP as they continue to develop new books within the Association of Mathematics Teacher Educators (AMTE) Professional Book Series. IAP has also republished seven (7) monographs that were a part of the AMTE monograph series, as well as the AMTE Standards. They have an extensive list of products in the field of mathematics and look forward to adding yours to their program. <u>Please click on this link to visit their virtual bookstore</u> and to browse their current mathematics publications, as well as, the AMTE monographs.
MAIER MATH FOUNDATION AND MATH LEARNING CENTER	Visit our shared MLC-MMF booth to learn more about our sponsored sessions, free resources, and the Bridges University Program. 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. 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.

Exhibitor	Αвουτ Τηε Εχηιβιτ		
M T E P P MATHEMATICS TEACHER EDUCATION PARTNERSHIP	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 <u>MTEP Guiding Principles</u> , which are aligned with the <u>AMTE Standards for Preparing Teachers of Mathematics</u> . 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 <u>http://mtep.info/</u> for more information.		
AMTE Membership Committee	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 <u>Community Circles</u> and the <u>Early Career BIPOC</u> <u>Faculty Mentoring Program</u> 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!		
CONTRACTOR OF CO	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.		
AMTE PUBLICATIONS COMMITTEE	The Publications Division of AMTE has three publications: <i>Mathematics Teacher Educator</i> journal (<u>MTE</u>), <i>Contemporary Issues in Technology and Mathematics Teacher Education</i> (<u>CITE-M</u>), and <u><i>Connections</i></u> (AMTE's quarterly publication that provides organizational information and features peer-reviewed articles). The Division also spearheads the <u>Professional Book Series</u> .		
TODOS – Mathematics For ALL!	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 <u>www.todos-math.org</u> for updated information.		

THURSDAY, FEBRUARY 8, 2024

7:30 AM - 8:15 AM

ss

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JUNIOR BALLROOM FOYER

We invite you to enjoy a morning beverage and to join conversations to build and nurture our professional community.

THURSDAY, FEBRUARY 8, 2024

A/M T E

OPENING SESSION

Critical Conversations: AMTE Standards for Preparing Teachers of Mathematics in Social and Political Contexts

Jenny Bay Williams, University of Louisville Liza Bondurant, Mississippi State University Yvonne Lai, University of Nebraska, Lincoln Richard Velasco, University of Oklahoma Eva Thanheiser, Portland State University (moderator)

Much has happened in the world and in mathematics education since the 2017 release of the Standards for Preparing Teachers of Mathematics. How do we (and how might we) leverage these standards to advocate for teachers, teacher educators, practices, programs, and policies at local, state, and national levels? What is missing in these standards that could help us better prepare teachers? How do or how should social and political issues impact that we do in mathematics teacher education? In this session, panelists will address these questions and engage the audience in conversations intended to promote critical consciousness with ourselves and with the teachers of mathematics that we prepare.

JUNIOR BALLROOM F & G

8:30 AM - 10:00 AM







OVERVIEW OF THURSDAY MORNING, FEBRUARY 8, 2024

	10:15 AM - 11:00 AM	11:15 AM - 12:00 PM
Junior Ballroom F		15. Mathematics Pedagogy
Junior Ballroom G		16. Professional Development
Salon 11	1. Teaching and Learning with Technology	17. Equity, Social Justice, and Mathematics Teacher Education
Salon 12	2. Mathematics Pedagogy	18. Mathematics Education Policy and Program Issues
Salon 13	3. Developing Coherence in Mathematics Teacher Education Programs - Nguyen & Munter*	19. Who is Preparing Teachers to be Culturally Responsive: Findings From a 4-year Professional Development - Love-Mitchell & Chauvot
Salon 14	4. Bolstering Mathematics Engagement and Learning Through Gameplay - Hunt	20. Interactive Simulations as Basis for Supporting Preservice Teachers to Effectively Implement Technology in Mathematics Classrooms - Hensberry & Navas
Salon 15	5. Developing Mathematics Lessons and Assessments with Chatbots for Learning in Teacher Education: Innovation and Challenges - Maiorca, Burton, Jackson*, Ivy*, Roberts* & Bush	21. Connecting Community and Equity Issues Through Slow Reveal Graphs With Preservice Teachers - Brass & McCloskey
Salon 16	6. Examining How Mentors Provide Feedback to Teacher Candidates to Support Eliciting Student Thinking in Mathematics - Thomas	22. The Power of Paramount Tasks in Mathematics Teaching and Learning - Buchheister, Taylor & Jackson*
Salon 17	7. Does your Elementary Mathematics Methods Course Include Strategies for Teaching Students With Special Needs? - Karp	23. Preservice Teachers' Mathematics Feedback to Their Math Pals - Disney & Gearing
Salon 18	8. Professional Development	24. Mathematics Pedagogy
Salon 19	9. Collaborations and Partnerships	 25. Teaching Mathematics at a Black Immigrant Church: Implications for Mathematics Teacher Education - Flavin, Flavin, Chung*, Simeon*, Marie* & Solari*
Salon 20	10. Considering Community Events as Practice-Based Learning Spaces for Prospective Elementary Math Teachers - Daley & Lesseig	26. Understanding Learning to Teach for Equity as Developing an Equitable Mathematics Teacher Identity in Practice - Smith
Salon 21	11. Doing the Math: Professional Development With Instructional Assistants - Yoder, Rose*, Alexander* & Sorge*	27. Exploring Preservice Teachers' Analysis of Student Work as Formative Assessment - Nguyen, Eisenreich & Smithey
Salon 22	12. Utilizing Networked Improvement Communities to Enact Change in Mathematics Teacher Education - Lee, Casey, Hudson, Mojica, Thrasher, Kuhlman & Abel	28. Preservice Teachers' Perceptions of Culturally Responsive Teaching: Subsequent Steps for Methods Courses - Cutler, Zhang & Enemodia*
Salon 23	13. Development of Mathematics Teacher Educators	29. Raising Mathematics Teachers' Awareness of the New Principles and Standards of Specific Learning Disability Evaluations - van Ingen Lauer, Allsopp* & McHale-Small*
Salon 24	14. Mathematics Content and Curriculum	30. Mathematics Content and Curriculum

THURSDAY, FEBRUARY 8, 2024

Session 1 **Teaching and Learning with Technology Report Session**

Prospective Teachers' Beliefs About Block Based and Text Based Programming Integration in **Elementary Mathematics Classrooms**

Hyejin Park, Drake University Eric Manley*, Drake University

In this session, we will discuss prospective teachers' learning about block based and text based programming in a mathematics content course. We will explore their beliefs about programming integration in elementary mathematics classrooms, particularly their preferences between two programming environments.

Preservice Elementary Mathematics Teachers Technological Pedagogical Content Knowledge

Seyedehkhadijeh Azimi Asmaroud*, Virginia State University

This study is a longitudinal study that explored the TPACK of a group of elementary mathematics preservice teachers in a Historically Black Colleges and University (HBCU). This paper reports on the primary finding of the first stage of the study.

ZOOMing With Better Norms: Analysis of Inclusive Norms in Synchronous Online Classes

Theresa Wills*, George Mason University Holly Tate, George Mason University

Synchronous online courses typically begin with norms for online success. This research analyzed 32 norms to understand which of these practices illuminate some identities, while deeming others invisible.

Session 2 **Mathematics Pedagogy Report Session**

Salon 11

Bringing Theory to Life Through a Mediated Field Experience for Elementary Mathematics Teachers

Sara Kirschner, George Mason University

This session will discuss the application and impact of a Mediated Field Experience designed to extend coursework for undergraduate elementary teacher candidates during their student teaching internship. Affordances of challenges of the applied Mediated Field Experience model will be shared.

Teaching, Learning, and the Standards for Mathematical Practice: How do Undergraduate Students Connect Them?

Elyssa Stoddard, SUNY Oneonta

This report examines how undergraduate students linked the Standards for Mathematical Practice to other mathematics teaching and learning ideas. Using Toulmin's (1958) notion of warrants, we will explore the source(s) informing student claims about practice-idea linkages.

The Chil'run's Qyah: Black Language in the Mathematics Pedagogy of a Black Male Prospective Teacher

Nickolaus Alexander Ortiz, Georgia State University

This session highlights the way that one Black male prospective teacher embraces Black Language in his pedagogy, how it is used to educate various youth, and how to support the diverse identities that take on the role of mathematics teacher.

Session 3

Salon 13 **Mathematics Education Policy and Program Issues Discussion Session**

Developing Coherence in Mathematics Teacher Education Programs

Phi Nguyen, University of Illinois, Chicago Charles Munter*, University of Missouri

In this session, we introduce a method for investigating (in)coherence in mathematics teacher education programs, and invite participants to use that method to consider incoherence in their respective programs. Then, we will discuss strategies for developing coherence in teacher education.

10:15 ам - 11:00 ам

Salon 12

Session 4 Mathematics Content and Curriculum Individual Session

Bolstering Mathematics Engagement and Learning Through Gameplay

Jessica H Hunt, North Carolina State University

Participants will explore how ModelME, a game-embedded fraction curriculum, can bolster students' engagement in deep mathematical thinking and opportunities for discussion. They will also discuss how teachers can leverage students' gameplay for formative assessment and targeted instructional decisions.

Session 5 Salon 15 Teaching and Learning with Technology Individual Session - NTLI Award Winner

Developing Mathematics Lessons and Assessments with Chatbots for Learning in Teacher Education: Innovation and Challenges

Cathrine Maiorca, Oklahoma State University Megan Burton, Auburn University Christa Jackson*, Saint Louis University Jessica Ivy*, Purdue University Northwest Thomas Roberts*, Bowling Green State University Sarah B Bush, University of Central Florida

Explore ways mathematics teacher educators utilize chatbots to promote critical thinking about elements in the planning process such as creating assessments and lessons. Participants will engage in creating and analysis and will examine teacher candidate work products.

Session 6 Mathematics Pedagogy Individual Session

Salon 16

Salon 14

Examining How Mentors Provide Feedback to Teacher Candidates to Support Eliciting Student Thinking in Mathematics

Casedy Ann Thomas, University of Virginia

This study focuses on seeking a shared vision of ambitious mathematics practices with mentors. The purpose of this work is to understand how mentor teachers support teacher candidates in eliciting student thinking and how they provide feedback on such practices. Session 7 Salon 17 Equity, Social Justice, and Mathematics Teacher Education Discussion Session

Does your Elementary Mathematics Methods Course Include Strategies for Teaching Students With Special Needs?

Karen Karp, Johns Hopkins University

Recent research from mathematics education and special education was synthesized in Assisting Students Struggling with Mathematics: Intervention in the Elementary Grades. The six resulting recommendations that mathematics educators can incorporate in methods courses will be shared and discussed.

The Treehouse Project: Exploring Mathematical Concepts With Families in a Preschool Classroom

Victoria Damjanovic, Northern Arizona University Jennifer Ward, Kennesaw State University

This presentation describes a project to provide early childhood teachers with professional development and pedagogical support during planning to demonstrate how mathematics can be embedded contextually through real-world experiences in the classroom while bringing in families and the local community.

Sustaining Accountability: How Teacher Educators Support Teachers to Continue Justice Oriented Work Beyond a Graduate Course

Candace Joswick, *The University of Texas at Arlington* Melissa Troudt*, *University of Wisconsin, Eau Claire* Lisa Skultety, *University of Central Arkansas*

This presentation explores how teachers continue social justice work and how math teacher educators can facilitate accountability beyond a graduate course. Examples of teacher led projects and findings from interviews will inform strategies to support ongoing learning and classroom practice.

Working Toward a Collegiality Spectrum to Describe Teacher Learning in a Community of Practice

Amy Daniel, *Montclair State University* Youngjun Kim, *Montclair State University* Helene Leonard, *Montclair State University* Victoria Bonaccorso*, *Montclair State University* Joseph DiNapoli, *Montclair State University*

We share empirical findings about collegial dialogue observed among inservice mathematics teachers participating in a research based professional development model. These findings have important implications about how collegial dialogue can be conceptualized as a spectrum and its connection to teacher learning.

Session 9 Collaborations and Partnerships Report Session

Salon 18

Preparing Elementary Preservice Teachers for Inquiry-based Science and Mathematics Instruction Through a Novel Initiative

Tye Campbell, Utah State University

In this session, we describe how one teacher preparation program in Canada partnered with a local elementary school to design a novel initiative that supported elementary preservice teachers in their capacities to use inquiry-based instructional practices for science and mathematics.

Model-Eliciting Problems to Support Elementary Teacher Candidates' STEM Thinking and Identities

Vecihi Serbay Zambak, Monmouth University Michelle Schpakow*, Monmouth University

We report on a study with elementary school teacher candidates whom we engaged in exploring modeleliciting STEM problems within methods courses. We discuss how teacher candidates engage with model-eliciting activities to support their STEM thinking and identities.

Participatory Design-Based Research with Native American-Serving Middle and High Schools

Jeffrey Hovermill, Northern Arizona University

Partnerships with Native American school districts is evolving and have improved impact via participatory design-based research. This report will describe how design-based research principles were applied within two research projects focused on STEM education in Native schools.

Session 10 Salon 20 Practice-Based Experiences for Prospective Teachers Individual Session

Considering Community Events as Practice-Based Learning Spaces for Prospective Elementary Math Teachers

Molly Daley, *Education Service District 112* Kristin Lesseig, *Washington State University*

During math play children direct their own learning. What can prospective teachers learn by facilitating math play at community events? This session will explore the potential of non-formal learning settings as prospective teachers develop their beliefs about students and mathematics.

Doing the Math: Professional Development With Instructional Assistants

Gina Borgioli Yoder, Indiana University - Purdue University at Indianapolis

Kevin Rose*, Indiana University - Purdue University Indianapolis

Ally Alexander*, Indiana University - Purdue University Indianapolis

Brandon Sorge*, Indiana University - Purdue University Indianapolis

Participants will learn about and engage in activities from a professional development innovation with Instructional Assistants designed to support their comfort with math content and representations, ability to listen to student thinking, questioning skills, and knowledge of problem solving strategies.

Session 12 Collaborations and Partnerships Individual Session

Utilizing Networked Improvement Communities to Enact Change in Mathematics Teacher Education

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

Participants will learn principles of improvement science and structuring a networked improvement community for making systemic changes in teacher preparation. A project aiming to transform preparation of secondary teachers for teaching data science and statistics will be used to illustrate.

Salon 22

Development of Mathematics Teacher Educators Report Session

Supporting Teacher Educators' Professional Competence for Argumentation-Oriented, Discourse-Intensive Pedagogy in Mathematics Classrooms

P. Karen Murphy, *The Pennsylvania State University* Gwendolyn M. Lloyd, *The Pennsylvania State University*

Rachel Croninger, *The Pennsylvania State University* Sara Elizabeth Baszczewski, *The Pennsylvania State University*

Amy Voss Farris*, *The Pennsylvania State University* Rachel Wolkenhauer*, *The Pennsylvania State University*

Cory Tondreau*, *The Pennsylvania State University* Yue Tang*, *The Pennsylvania State University*

In this presentation, we describe the implementation of Quality Talk, a student-centered discussion approach and professional development model, to support mathematics teacher educators' implementation of argumentation-oriented, discourse-intensive pedagogies and subsequent effects on preservice teachers' mathematical understandings and argumentation.

Future and Current Mathematics Teacher Educators' Development: Social Justice Mathematics in Doctoral Preparation

Queshonda Juanieka Kudaisi, University of North Texas Cynthia Castro-Minnehan*, University of South Florida

Little research considers mathematics teacher educator preparation to prepare teacher candidates to teach mathematics for social justice. We will present our study that examined 66 current and future mathematics teacher educators' exposure to social justice mathematics in their doctoral preparation.

Supporting Mathematics Teacher Educators' Development of Adaptive Expertise Through Collaborative Inquiry

Terrie McLaughlin Galanti, *University of North Florida* Nicholas Kochmanski, *University of North Carolina at Greensboro*

Jonathan D. Watkins, *Ball State University* Alees Lee, *Weber State University*

This report describes how a collaborative inquiry design organized around a common mathematics task supported four mathematics teacher educators to develop adaptive expertise in the teaching of mathematics methods and content courses for prospective secondary mathematics teachers.

Session 14 Mathematics Content and Curriculum Report Session

Mathematics Standards: Authority or Guidance?

Salon 24

Kate McKenna Webster, Brigham Young University

We report on how teachers use the CCSSM to make decisions about what they teach or do not teach. This has implications for mathematics teacher educators as we help preservice teachers learn to use policy documents to improve student learning.

Elementary Teachers' Mathematics Curricular Reasoning: Connecting Instructional Decisions to Curricular Knowledge, Vision, and Trust

Bima Sapkota, The University of Texas Rio Grande Valley

Doris Fulwider, *Purdue University* Jill Newton, *Purdue University*

We present two elementary teachers' mathematics curricular reasoning and the complexities around how their curricular knowledge, vision, and trust interact with their decision-making processes. Teacher educators will reflect how to enhance preservice teachers' curricular knowledge, vision, and trust.

THURSDAY, FEBRUARY 8, 2024

Session 15 Mathematics Pedagogy Report Session

Junior Ballroom F

Teachers' Talk Moves: How Are They Associated With CCSSM's Standards for Mathematical Practices?

Jung Colen, Bellarmine University Hoyun Cho*, Capital University Jinho Kim, Daegu National University of Education Sheunghyun Yeo*, Daegu National University of Education

Jukyung Park, Seoul Haenghyun Elementary School Yong S. Colen, Indiana University of Pennsylvania

Participants will investigate the connection between each mathematical talk moves and expertise described in SMP 3, pinpointing which talk moves hold greater potential for eliciting SMP 3 engagements in students.

Selecting and Sequencing With Attention to Student Identities and Learning Goals

Carmen Smith, University of Vermont Barbara King, Florida International University Indira Gil, Brown University Elizabeth Forde, SUNY New Paltz Colin Dowd*, The University of Vermont Maxwell Girouard*, The University of Vermont Caroline McClintock*, The University of Vermont Gilli Danenberg*, The University of Vermont

In this session, we will share findings of how preservice teachers attend to student identities and mathematics learning goals when selecting and sequencing student work. We will discuss implications for supporting preservice teachers in facilitating effective and equitable instruction.

Implications of a Teacher's Support for Collective Argumentation Through Display Actions

Jonathan Foster*, *University at Albany, SUNY* AnnaMarie Conner, *University of Georgia* Laura M. Singletary*, *Lee University* Yuling Zhuang*, *Emporia State University* Hyejin Park, *Drake University*

In addition to verbal contributions, teachers may support collective argumentation by visually displaying contributions to the argument. We highlight the implications of a teacher's choices when using display actions in supporting collective argumentation in secondary mathematics classes.

Session 16 Professional Development Report Session

Opportunities to Provide Professional Development for Future Secondary Mathematics Teachers: Noyce Case Study

Danny Hong, University of Iowa Richard Velasco, The University of Oklahoma

This presentation will share the impact of professional development plans for NSF funded Noyce scholarship program. We will share our plans, strategies and experiences among those who have had experience with the Noyce scholarship program.

An Alumni Book Club: Staying Connected and Growing Our Practice

Dana Grosser-Clarkson, University of Maryland

We present an alumni book club created by teacher educators as a way to stay connected and to support alumni to continue to grow their practice. We discuss the structure of the book clubs, initial outcomes, and suggestions for improvements.

Improving Questioning by Observing Peer Teachers

Laura B Kent, University of Arkansas

This session presents the survey results from 50 middle school mathematics teachers who participated in a three-year professional development program focused on problem posing and students' thinking. Qualitative responses showed the importance of classroom embedded sessions to their own practice.

11:15 ам - 12:00 рм

Junior Ballroom G

Session 17 Salon 11 Equity, Social Justice, and Mathematics Teacher Education Report Session

An Investigation Into the Relationship Between Preservice Teachers' Learning Experiences and Teaching Aspirations in Mathematics

Karisma Morton, *The University of North Texas* Brittany Frieson*, *The University of North Texas*

We present findings from a research study that investigates the ways preservice teachers of Color make sense of their racialized experiences as learners of mathematics as children and how this impacts their intentions for their future math teaching.

Mathematics Teacher Educators' and Mathematics Educators' Conceptualization of Space and Place

Hillary Ongoyo Omoze, *Purdue University* Abigail Erskine*, *Purdue University*

Mathematics teaching and learning should be responsive to contextual variables in learning institutions and teachers' and students' backgrounds.

(Re)connecting Theory and Practice: Extending Culturally Responsive Mathematics Teaching to Clinical Field Experience

Wesam M. Salem, The University of Memphis

This research supports the mathematics teacher educators' efforts of (re)thinking their methods courses to develop approaches to clinical mentoring and coaching that aid the development of teacher candidates' teaching practices for equity and social justice.

Session 18

Mathematics Education Policy and Program Issues Report Session

Aligning Secondary Mathematics Teacher Preparation Programs with the AMTE Standards: How are We Doing? (MTEP Session)

W. Gary Martin, *Auburn University* Mariya Rosenhammer, *Auburn University*

The 2017 AMTE Standards provided a "a national vision" for mathematics teacher preparation. This session will detail the progress and challenges of a coalition of 44 secondary mathematics programs in meeting that vision, with particular focus on equity and justice.

Comparing Preservice Teachers' Reactions to Mathematics Education Professional Organizations' Statements on Anti-Black and Anti-Asian Injustice

Chasity Ne'chell Crafton*, Western Kentucky University Daniel Clark, Western Kentucky University

Elementary preservice teachers wrote reactions to three statements on injustice from leading mathematics education organizations: two concerning anti-Black and one concerning anti-Asian racism. A framework will be used to understand, compare, and contrast what preservice teachers took from the statements.

Diversifying Pathways into the Profession

George J. Roy, University of South Carolina Thomas E. Hodges, University of South Carolina

With stagnant and in many cases declining enrollment in mathematics teacher preparation, creating innovative ways into the profession is necessary. In this report, we outline our innovative alternative pathway approach to diversifying the field within rural communities in our state.

Session 19 Professional Development Individual Session

Salon 13

Who is Preparing Teachers to be Culturally Responsive: Findings From a 4-year Professional Development

Morgan Love-Mitchell, *University of Houston* Jennifer B. Chauvot, *University of Houston*

This presentation is to share findings from a descriptive study that revealed mathematics and science teachers' perceptions of their preparedness to be culturally responsive and what they felt contributed to their preparedness after four years of professional development.

Salon 12

Session 20 Teaching and Learning with Technology Individual Session

Interactive Simulations as Basis for Supporting Preservice Teachers to Effectively Implement Technology in Mathematics Classrooms

Karina K. R. Hensberry, *University of South Florida* Kelly Navas, *University of South Florida*

We engaged preservice teachers with PhET interactive simulations; modeled and discussed research based practices for implementation; and examined their perspectives about sims as instructional tools. Implications focus on supporting preservice teachers to effectively implement sims and other technologies in their classrooms.

Session 21 Mathematics Content and Curriculum Individual Session

Connecting Community and Equity Issues Through Slow Reveal Graphs with Preservice Teachers

Amy Brass, *The Pennsylvania State University* Andrea McCloskey, *The Pennsylvania State University*

This session will share results of using slow reveal graphs focused on community issues with preservice teachers. Participants will engage in a slow reveal graph and discuss affordances, limitations, and considerations of their use in classrooms.

Session 22 Mathematics Pedagogy Individual Session

Salon 16

Salon 15

The Power of Paramount Tasks in Mathematics Teaching and Learning

Kelley Woolford Buchheister, University of Nebraska, Lincoln

Cynthia E. Taylor, *Millersville University of Pennsylvania* Christa Jackson*, *Saint Louis University*

In this presentation we describe the role of paramount tasks in mathematics education and provide specific guidelines to support teachers in developing effective tasks from literature that situate mathematical investigations within surrounding community events or social issues.

Session 23 Salon 17 Practice-Based Experiences for Prospective Teachers Individual Session

Preservice Teachers' Mathematics Feedback to Their Math Pals

Andria Disney, *Utah Valley University* Nicole Venuto Gearing, *Utah Valley University*

We will share our findings from examining patterns in our preservice teachers' feedback about mathematics tasks to elementary students, who were their Math Pals. Participants will consider how to apply these findings in their own teaching contexts.

Session 24 Mathematics Pedagogy Report Session

Salon 18

What Small-Scale Visioning Activities Reveal About Preservice Elementary Teachers' Visions for Math Teaching

Michael Lawson, *Kansas State University* Sherri Martinie, *Kansas State University* Tegan William Nusser, *Bradley University*

We report findings from the implementation of two small-scale visioning activities in an elementary math methods course, unpacking how math teacher educators can understand preservice elementary teachers' visions for teaching math and how these activities capture changes in their visions.

Measuring and Understanding Teachers' Mindset Beliefs Related to Mathematics Teaching and Learning

Erica Slate, *Appalachian State University* Sarah Roller Dyess, *The University of Alabama in Huntsville*

Kathy Sun, Santa Clara University

We share a new, validated survey instrument for measuring educators' beliefs about teaching and learning mathematics related to growth mindset. We discuss ways mathematics teacher educators might utilize this survey to better support teachers to teach mathematics for growth mindset. *Using Journaling as a Space to Reflect on (Anti)Racist Practices in Mathematics Education*

Robin Anderson, North Carolina State University

How do teachers avoid reinforcing White supremacy culture? This presentation will report on one strategy, journaling, as a way to interrogate normative, racist practices that teachers have experienced, or are practicing, within their classrooms and ways they imagine change.

Salon 14

Session 25 **Collaborations and Partnerships** Individual Session

Teaching Mathematics at a Black Immigrant Church: Implications for Mathematics Teacher Education

Eunhye Flavin, Stonehill College Matthew Thomas Flavin, Northwestern University Moon Young Chung*, Stonehill College Marianie Simeon*, STEM For All Brockton Rachel Olivia Marie*, Stonehill College Marissa Solari*, Stonehill College

This study explores the notion of anti-deficit noticing practices in the context of mathematics teacher education (Louis et al., 2021). We analyzed white elementary preservice teachers' practices in a community oriented course at a Haitian immigrant church in New England.

Salon 20 Session 26 Equity, Social Justice, and Mathematics Teacher Education Individual Session

Understanding Learning to Teach for Equity as Developing an Equitable Mathematics Teacher Identity in Practice

Brian A. Smith, University of Michigan

This session shares preliminary findings of a study utilizing a critical and situated framework of teacher learning. Using these findings as a starting point, participants will imagine features of programs that benefit the development of equitable mathematics teacher identities.

Session 27 **Mathematics Content and Curriculum** Individual Session

Salon 21

Salon 19

Exploring Preservice Teachers' Analysis of Student Work as Formative Assessment

Ha Nguyen, California State University, Dominguez Hills Heidi Eisenreich. Georgia Southern University Montana Smithey, Georgia Southern University

We share student work, preservice teachers' annotations and interactions with peers on the work, and how we used that to inform our teaching. Additionally, we share next steps and encourage participants to identify ways they can implement a similar activity.

Session 28 Salon 22 Equity, Social Justice, and Mathematics Teacher Education Individual Session

Preservice Teachers' Perceptions of Culturally Responsive Teaching: Subsequent Steps for Methods Courses

Carrie S. Cutler, University of Houston Linda Zhang, Louisiana State University, Shreveport Roseline O. Enemodia*, University of Houston

This research to practice session describes our investigation of preservice teachers' perceptions and implementation of culturally responsive teaching in field placements. We offer subsequent suggestions for supporting their teaching of diverse students through modeling and promoting equitable teaching in methods courses.

Session 29

Salon 23 Mathematics Education Policy and Program Issues Individual Session

Raising Mathematics Teachers' Awareness of the New Principles and Standards of Specific Learning Disability Evaluations

Sarah van Ingen Lauer, University of South Florida David Allsopp*, University of South Florida Monica McHale-Small*, Temple University

An interdisciplinary team of co-authors presents the Learning Disability Association's new Principles and Standards of Specific Learning Disability Evaluations. We discuss how awareness of these principles and standards can improve mathematics teachers' equitable instruction and advocacy for students with exceptionalities.

Session 30 Mathematics Content and Curriculum Report Session

Teaching Spatial Reasoning in Early Childhood: How Current Practices Can Inform Future Instructional Routines

Salon 24

Robyn Pinilla, The University of Texas at El Paso

Spatial reasoning is critical for mathematics learning, and young children are ready to engage with its comprising skills, yet its representation in early grades educational standards is sparse. This case study report offers examples of K-2 educators teaching spatial reasoning.

STEM Habits of Mind: Preparing Elementary School Teachers for Integrating STEM in Elementary School Mathematics

Mohammad Al-younes, *Marquette University* Marta T. Magiera, *Marquette University*

We present the design of our intervention addressing STEM integration in a mathematics content course for prospective elementary school teachers. We engage participants in examining activities and discussing strategies for preparing prospective teachers to integrate STEM into elementary school mathematics.

Approaches to Integration: How Are We Preparing Preservice Teachers to Teach STEM?

Jenifer Hummer, West Chester University Byungeun Pak, Utah Tech University Derek Joseph Sturgill, University of Wisconsin, Stout Rebecca S. Borowski*, Western Washington University

Students' engagement in STEM activities can support their understanding of mathematics. To better understand how preservice teachers are prepared to implement integrated STEM lessons, this report shares updates from our STEM syllabi analysis and reports on new findings from follow-up interviews

NETWORKING LUNCH

EXECUTIVE BALLROOM H

AMTE provides a buffet lunch for registered conference attendees. Please join your colleagues for lunch and good conversation before the Thursday afternoon sessions.

ADVOCACY LUNCH

EXECUTIVE BALLROOM I

Join with other colleagues for lunch and programming provided by the Advocacy Committee.

Visit http://bit.ly/AMTEMenuInfo24 or scan the QR code for more information about menu items.


OVERVIEW OF THURSDAY AFTERNOON, FEBRUARY 8, 2024

	1:15 PM – 2:15 PM	2:30 PM – 3:30 PM	
Junior Ballroom F	31. Supporting Learners with Seeing the Wonder, Joy, and Beauty of Mathematics - Rigelman	47. Elevating Teacher Voice in Mathematics Teacher Education: Innovations in Professional Development Contexts - Steele, Johnson*, Wager, Caldwell, Vescio, Harrington & Brown	
Junior Ballroom G	ior Om G 32. Awareness to Action: Defending Against Attacks on Queer People and Discussions of Racism in School - AMTE AMTE		
Salon 11	33. Codesigning and Enacting Justice Oriented Community-based Mathematical Modeling Tasks to Develop Math Teachers' Criticality - Suh, Tate & Roscioli	49. An Instructional Coaching Model to Support Shifting Toward More Equitable Mathematics Instruction - Litke*, Wilson, Akridge & Booth*	
Salon 12	34. So Many Measures! Choosing the Right Measure for Your Teacher Education Program Evaluation - Gallagher, Walkowiak, Folger*, Bostic & Zelkowski	<i>50. Noticing With Respect To</i> - Stockero, Van Zoest, Leatham & Peterson	
Salon 13	 35. Is a Fulbright in Your Future? Discussion on Engaging in Mathematics Teacher Education Globally - Dick & Chao* 51. Strategies and Resources for Critically Curricula - Jasien 		
Salon 14	on 14 36. Supporting Elementary Mentor Teachers to Reflect on Their Positioning of Student Teachers - Partridge, Webel & Nguyen 52. An Expert Mathematics Teacher Ed Noticing of Preservice Teachers' Math Pedagogical Thinking - Warren		
Salon 15	Salon 1537. Learning From Technology Using Secondary Math Teachers - McCulloch & Lovett53. A Comprehensive Analysis of Teach Practices: A Large-Scale Survey Study Copur-Gencturk, Atabas & Park		
Salon 16	38. Critical Design Features of Professional Development and Links to Long-term Teacher Learning - Koellner, Placa & Seago*	54. Professional Noticing: What Differences Do We See in Analyzing Interrelated Noticing Skills Versus Individual Skills? - Teuscher & Switzer	
Salon 17	39. Do Well-Known Statements About Relative Difficulty of Word Problems Withstand Empirical Inquiry? - Schoen & Whitacre	55. Emergent Activists: Prospective Teachers' Reimagined Socially Just Futures - Claiborne & Cordero-Siy	
Salon 18	40. Say It Loud: Black Language, Linguistic Justice and Teacher Empowerment in Mathematics Education Training - Rivera & Harris	56. Using Artificial Intelligence Such as ChatGPT as a Metacognitive Assistant for Novice Mathematics Teachers - Gurl, Artzt & Markinson	
Salon 19	41. Community and Learning for Teacher Candidates With Diagnostic Labels - Westby	57. Journeying Through Mathematics Content Courses: Snapshots of Prospective Teachers' Perceptions of Themselves as Mathematics Teachers - Taylor & Breiding	
Salon 20	42. Problem Posing and Geometry Standards: Building From Preservice Elementary Teachers' Initial Efforts - Max*, Suazo-Flores & Kastberg58. Statistical Literacy and Communicati Implications for Teachers - Burrill		
Salon 21	43. Ethnomodeling: Embodying the Recommendations From NCTM's Catalyzing Change in Teacher Preparation Programs - Desai, Wilkerson & Safi	59. Supporting Preservice Teachers' Positive Mathematical Dispositions in Elementary Math Methods - Hood	
Salon 22	44. Identifying Elementary Preservice Teachers' Mathematical Wounds: Planning for Healing in Teacher Preparation Programs - Gerardo, Skultety, Bajwa* & Poetzel*	60. First-Year Teachers' Sophisticated Views of Equitable Mathematics Instruction - Rupe & Woods	
Salon 23	45. Enhancing Critical Conversations in Mathematics T Building a Learning Community - Gonzalez, Moldavan	Teacher Education Using Intersectional Equity Cases: & George-Puskar*	
Salon 24	46. Elementary Prospective Teachers' Perspectives: Integer Multiplication, Student Invented Strategies, and Integer Curriculum - Carpenter & Wessman-Enzinger	61. Comparing One Page Documents, Social Posts, and Videos as Delivery Formats for Instructional Nudges - Otten, Wambua*, Stewart & Vahle*	

THURSDAY, FEBRUARY 8, 2024		1:15 ам – 2:15 Рм
Session 31 AMTE AMTE Excellence in Teaching Aw	Junior Ballroom F ard Winner	Session 34 Salon 12 Mathematics Education Policy and Program Issues Discussion Session
Supporting Learners With Seeing and Beauty of Mathematics	the Wonder, Joy,	So Many Measures! Choosing the Right Measure for Your Teacher Education Program Evaluation
Nicole René Rigelman, <i>Portland Sta</i> <i>Math Learning Center</i> Selecting and implementing meanin that empower learners is critical to t wonder, joy, and beauty of mathema we will explore ways teacher educa development of this knowledge, skil	ate University & The gful tasks in ways hem seeing the atics. In this session, tors can support I, and mindset.	Melissa Ann Gallagher, <i>University of Houston</i> Temple Walkowiak, <i>North Carolina State University</i> Timothy Donald Folger*, <i>Bowling Green State University</i> Jonathan David Bostic, <i>Bowling Green State University</i> Jeremy Zelkowski, <i>The University of Alabama</i> Evaluating teacher education programs requires using measures to assess candidate preparedness. The purpose of this session is to share: (a) information on
Session 32 AMTE Committee Sessions	Junior Ballroom G	validity evidence and score reliability, (b) a Measure Selection Framework, and (c) a repository of 200+ relevant measures.
Awareness to Action: Defending Queer People and Discussions of AMTE Advocacy Committee Engage with members of the advoc specifically identifying concrete plan partners for taking action in defense teachers, and colleagues affected b attacks on LGBTQ+ people and the in schools.	Against Attacks on f Racism in School acy committee, as and accountability of students, y conservative discussion of racism	Session 35Salon 13Professional Development Discussion SessionIs a Fulbright in Your Future? Discussion on Engaging in Mathematics Teacher Education GloballyLara Dick, Bucknell University Theodore Chao*, The Ohio State University
Session 33 Equity, Social Justice, and Mathe Education Individual Session	Salon 11 matics Teacher	share their experiences applying for, receiving and completing Fulbright Scholar awards. Attendees will discuss what it means to engage in global scholarship from a humanizing perspective as a means of professional development.
Codesigning and Enacting Justic Community-based Mathematical Develop Math Teachers' Criticalit Jennifer M. Suh, George Mason Universit Holly Tate, George Mason Universit Kate Roscioli, George Mason Universit	e Oriented Modeling Tasks to y iversity y rsity	Session 36 Salon 14 Practice-Based Experiences for Prospective Teachers Discussion Session Supporting Elementary Mentor Teachers to Reflect
Presenters detail professional learn implemented while codesigning just Community-based Mathematical Mo teachers to address issues in their I Participants will engage in these de	ing activities ice oriented odeling tasks with ocal communities. signed activities and	Eric Partridge, University of Missouri Corey Webel, University of Missouri Phi Nguyen, University of Illinois, Chicago

learn how they supported the development of

mathematics teachers' criticality.

In this session we share an emerging framework for how student teachers are positioned in their work with mentor teachers. We use data to discuss how the framework can be used to support mentors in their work.

Session 37 Teaching and Learning with Technology Individual Session

Learning From Technology Using Secondary Math Teachers

Allison McCulloch, *University of North Carolina at Charlotte*

Jennifer N. Lovett, Middle Tennessee State University

Come learn how expert secondary teachers make decisions about using technology in their classrooms. Participants will engage with data from interviews with 20 expert teachers and consider how we might use it to support teacher learning about teaching with technology.

Session 38	
Professional Development	
Discussion Session	

Salon 16

Salon 15

Critical Design Features of Professional Development and Links to Long-Term Teacher Learning

Karen Koellner, *Arizona State University* Nicora Placa, *Hunter College* Nanette Seago^{*}, *WestEd*

We will briefly share findings from our work and then engage participants in video analysis and discussion related to the design of professional development and the subtle nature of how design features appear to be linked to long-term teacher learning.

Session 39 Mathematics Content and Curriculum Individual Session

Salon 17

Do Well-Known Statements About Relative Difficulty of Word Problems Withstand Empirical Inquiry?

Robert C. Schoen, *Florida State University* Ian Whitacre, *Florida State University*

Join us to discuss our recently published synthesis of research on word-problem difficulty and validity of rules-of-thumb statements about relative problem difficulty. Using data from 4,000 students, we'll compare the performance of Common-Core-era first graders with their parents and grandparents.

Session 40 Salon 18 Development of Mathematics Teacher Educators Discussion Session

Say It Loud: Black Language, Linguistic Justice and Teacher Empowerment in Mathematics Education Training

Amelia Quonyelle Rivera, North Carolina State University Charlese B. Harris, North Carolina State University

Black language speaking mathematics teachers generated recommendations for mathematics teacher educator programs with regard to improvements in the dismantling of the Anti-Black Linguistic Racism embedded in many of the beliefs and practices of many mathematics teachers.

Session 41 Salon 19 Equity, Social Justice, and Mathematics Teacher Education Individual Session

Community and Learning for Teacher Candidates With Diagnostic Labels

Kathryn R. Westby, Michigan State University

We will describe the outcomes and design of a professional development for disabled teacher candidates about inclusive pedagogies and professional sustainability. The relationships built supported the candidates' integration of disparate learning across their programs with their own developing professional identity.

Session 42 Mathematics Pedagogy Discussion Session

Problem Posing and Geometry Standards: Building From Preservice Elementary Teachers' Initial Efforts

Salon 20

Brooke Max*, *Purdue University* Elizabeth Suazo-Flores, *University of North Dakota* Signe Kastberg, *Purdue University*

This session focuses on elementary preservice mathematics teachers' posed problems aligned with geometry standards. Problem-posing provides opportunities to connect mathematics and mathematics for teaching. Mathematics teacher educators will analyze preservice teachers' posed problems and discuss building upon that knowledge base. Session 43 Salon 21 Equity. Social Justice. and Mathematics Teacher Education **Discussion Session**

Ethnomodeling: Embodying the Recommendations from NCTM's Catalyzing Change in Teacher **Preparation Programs**

Siddhi Desai, Fairleigh Dickinson University Trena L. Wilkerson, *Baylor University* Farshid Safi, University of Central Florida

We discuss the integration of ethnomodeling framework in teacher preparation, which afforded us the opportunity to embody recommendations from *Catalyzing Change* as we delved deeper into attending to students' cultures and identities AND maintaining a focus on rigorous mathematical content.

Session 44 Salon 22 Mathematics Education Policy and Program Issues Individual Session

Identifying Elementary Preservice Teachers' Mathematical Wounds: Planning for Healing in **Teacher Preparation Programs**

Juan Manuel Gerardo, University of Cincinnati Lisa Skultety, University of Central Arkansas Neet Priya Bajwa*, Illinois State University Adam Poetzel*, University of Illinois

In this session, we share our survey instrument for identifying elementary preservice teachers' mathematical wounds. Participants will discuss how such survey data may be used by mathematics teacher educators to better support their preservice teachers throughout their programs.

Session 45 **Mathematics Pedagogy** Extended Session (1:15 pm - 3:15 pm)

Enhancing Critical Conversations in Mathematics Teacher Education Using Intersectional Equity Cases: Building a Learning Community

Monica Gonzalez, East Carolina University Alesia Mickle Moldavan, Georgia Southern University Annie George-Puskar*, Fordham University

Participants will build a learning community to examine resources auiding the design of intersectional equity-oriented cases to enhance critical conversations about equity in mathematics teacher education. Opportunities will be available to contribute to a shared repository of cases.

Session 46

Salon 24

Mathematics Content and Curriculum Individual Session

Elementary Prospective Teachers' Perspectives: Integer Multiplication, Student Invented Strategies, and Integer Curriculum

Camilla Hope Carpenter, Illinois State University Nicole Wessman-Enzinger, George Fox University

In this session we will share a task for elementary prospective teachers on negative integer multiplication. They solved integer multiplication problems (e.g., -2 x -4), created representations (e.g., number lines), made sense of children's thinking, and analyzed curriculum.

THURSDAY, FEBRUARY 8, 2024

Session 47 Junior Ballroom F Development of Mathematics Teacher Educators Symposium

Elevating Teacher Voice in Mathematics Teacher Education: Innovations in Professional Development Contexts

Mike Steele, National Science Foundation Kate R. Johnson*, Brigham Young University Anita Wager, Vanderbilt University Brittany Caldwell, Vanderbilt University Jamie Vescio, Vanderbilt University Rachel A. Harrington, Western Oregon University Karie Christine Brown, Georgia State University

How can we elevate teacher voice in the work of mathematics teacher professional development? This symposium brings together three projects that have taken innovative approaches to elevating teacher voice in the planning and enactment of teacher learning.

Session 48 AMTE President Exchange

Junior Ballroom G

Advocating for Equity Issues in the Current Climate

Enrique Galindo, *Association of Mathematics Teacher Educators*

Lisa Ashe, Association of State Supervisors of Mathematics

Shelly M. Jones, *Benjamin Banneker Association* Katey Arrington, *NCSM: Leadership in Mathematics Education*

This presidential panel will explore the challenges teachers and educators are facing advocating for equity issues as well as strategies for members to advocate for equity. Organizational presidents from ASSM, BBA, and NCSM will lead the panel. Session 49 Professional Development Individual Session

An Instructional Coaching Model to Support Shifting Toward More Equitable Mathematics Instruction

Erica Litke*, *University of Delaware* Jonee Wilson, *University of Virginia* Samantha Lyn Akridge, *University of Delaware* Samantha Booth*, *Harvard University*

In this session, we share a coaching model focused on supporting teachers to shift toward more equitable instruction. The model integrates an equity focused classroom observation instrument with coaching routines, providing structure for instructional improvement efforts tied to equitable teaching practices.

Session 50 Mathematics Pedagogy Individual Session

Salon 12

Noticing With Respect To

Shari L. Stockero, *Michigan Technological University* Laura R. Van Zoest, *Western Michigan University* Keith Leatham, *Brigham Young University* Blake Peterson, *Brigham Young University*

The common practice of focusing on noticing a singular event is too simplified to account for teachers' noticing during responsive teaching. We unpack the complexity of noticing WRT (with respect to) during responsive teaching and the iterative noticing it entails.

Session 51 AMTE Sponsored Sessions Salon 13

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.

2:30 рм - 3:30 рм

Session 52	Salon 14
Development of Mathematics	Teacher Educators
Individual Session	

An Expert Mathematics Teacher Educator's Noticing of Preservice Teachers' Mathematical and Pedagogical Thinking

Michael Warren, Baylor University

This presentation investigates an expert mathematics teacher educator's noticing of preservice teachers' mathematical and pedagogical thinking, shedding light on skills that foster the development of effective preservice mathematics teachers.

Session 53 Mathematics Pedagogy Individual Session

Salon 15

A Comprehensive Analysis of Teachers' Feedback Practices: A Large-Scale Survey Study

Yasemin Copur-Gencturk, *University of Southern California* Sebnem Atabas, *University of Southern California* Daniel Park, *University of Southern California*

This study provides a comprehensive analysis of the nature of teachers' feedback on written student work (i.e., incorrect or partially correct) by using large-scale data collected from 989 elementary and middle school teachers across different states in the United States.

Session 54 Salon 16 Practice-Based Experiences for Prospective Teachers Individual Session

Professional Noticing: What Differences Do We See in Analyzing Interrelated Noticing Skills Versus Individual Skills?

Dawn Teuscher, Brigham Young University John Matt Switzer, Texas Christian University

Noticing activities are abundant in teacher education. We will discuss an implicit methodology used by many that may mask key details about teachers' professional noticing skills. We will engage in two activities to demonstrate the importance of interrelating noticing skills.

Session 55 Salon 17 Equity, Social Justice, and Mathematics Teacher Education Individual Session

Emergent Activists: Prospective Teachers' Reimagined Socially Just Futures

Brit Claiborne, *Boston University* Eric Cordero-Siy, *Boston University*

How can teacher education create a more just world? This session unpacks a course designed to help prospective teachers reimagine mathematics and teacher agency. Join us to explore how they view their own potential as transformative agents of change.

Session 56 Mathematics Pedagogy Individual Session

Salon 18

Salon 19

Using Artificial Intelligence Such as ChatGPT as a Metacognitive Assistant for Novice Mathematics Teachers

Theresa Gurl, *Queens College, CUNY* Alice Artzt, *Queens College, CUNY* Mara P. Markinson, *Queens College, CUNY*

ChatGPT, game on! Learn how ChatGPT can be a metacognitive assistant for your teacher candidates when planning lessons. Ideas about prompt engineering, and strengths and limitations of ChatGPT will be shared. Please have ChatGPT ready on your device.

Session 57 Mathematics Content and Curriculum Individual Session

Journeying Through Mathematics Content Courses: Snapshots of Prospective Teachers' Perceptions of Themselves as Mathematics Teachers

Christine Taylor, Indiana State University Alison L. Breiding, Indiana State University

In this session we will 1. Discuss our experiences teaching mathematics content courses for prospective elementary teachers 2. Share our before and after prospective teachers' reflections on teaching math, 3. and Discuss our challenges and future work in these courses.

Session 58	Salon 20
Mathematics Pedagogy	
Discussion Session	

Statistical Literacy and Communication: Implications for Teachers

Gail Burrill, Michigan State University

Communication is vital in this data-driven world, but little attention is given learning to communicate effectively in writing. This session will consider characteristics of a good statistical/mathematical story and strategies to help learners develop skills to communicate data-based information.

Session 59 Mathematics Pedagogy Individual Session

Salon 21

Supporting Preservice Teachers' Positive Mathematical Dispositions in Elementary Math Methods

Christine E. Hood, University of Denver

I intersect practice and research by sharing a mixed methods study focused on graduate students in an elementary math methods course. This study was two-fold; I examine my co-teaching and the elementary preservice teachers' mathematical dispositions through innovative design principles.

Session 60 Professional Development Individual Session

First-Year Teachers' Sophisticated Views of Equitable Mathematics Instruction

Kathryn Mary Rupe, *Western Washington University* Dawn Woods, *Oakland University*

This session will share findings from an induction program for first-year K-8 mathematics teachers, including ways in which their views of equitable mathematics instruction evolved over their first year teaching. Connections to participants' contexts, voices, and experiences will be made.

Session 61 Professional Development Discussion Session

Salon 24

Comparing One Page Documents, Social Posts, and Videos as Delivery Formats for Instructional Nudges

Samuel Otten, University of Missouri, Columbia Mitchelle M. Wambua*, University of Missouri, Columbia Maria Nielsen Stewart, University of Missouri, Columbia Courtney Paige Vahle*, University of Missouri, Columbia

Drawing from a multi-year project involving incremental suggestions for instructional improvement, we consider the affordances and constraints of different delivery formats and ask which resonate with teachers and which are most likely to be shared so the suggestions can spread.

THURSDAY, FEBRUARY 8, 2024

3:30 PM - 4:30 PM

POSTER SESSION & REFRESHMENTS **EXECUTIVE BALLROOM H & I** Session 62 Join us for the 9th 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 3:30 PM - 4:30 PM Poster presentations 4:35 PM Presenters remove posters Refreshments are available in the Executive Ballroom. Visit http://bit.ly/AMTEMenuInfo24 or scan the QR code for more information about menu items.



OVERVIEW OF POSTER SESSION, THURSDAY, FEBRUARY 8, 2024

	3:30 PM - 4:30 PM		
	P01.Academic Parenthood in Mathematics Teacher Education: An International Study - Oduro-Boamah*,Abubakar*, Vomvoridi-Ivanovic	P12. EQUIPped to Notice: Exploring Mathematics Endorsement Students' Noticing of Racial Phenomena Through Reflections of Practice - Castanheira, Cannon, Johnson*, Osarumen Ugiagbe	
	<i>P02.A Critical and Situated Framework for Mathematics Teacher Identity -</i> Smith	P13. Experiencing Online Inquiry Oriented Mathematics Professional Learning: A Tale of Two Teachers - Apraiz, Dana*, Griffin*, Ulrich*	
	P03. Analyzing Preservice Teachers' Mathematical Understanding within an Equity Focused Lesson in Elementary Methods Courses – Gupta, Montgomery, Eddy, Morton	P14. Fostering Elementary Students' Positive Mathematical Identities with Multidisciplinary Learning - Barber	
	P04. An Analysis of the History of Mathematics and its Significance in Mathematics Education - Rosenhammer	P15. Improving Preservice Teachers' Mathematical Knowledge for Teaching Fractions - Kara	
Executive Ballroom	P05.Becoming Familiar with Middle School Students' Life Experiences as a Bridge For Engagement and Motivation – Sutcliffe, Hernandez-Zavaleta	P16. Increasing the Professional Capacity of Middle Grades Mathematics Teachers to Teach Statistics - Schoen	
	P06. Cracking the Egg: A Self-Study into Mathematics Teacher Educators' Knowledge - Gustaveson, Habib	P17. Instructional Practices in Linguistically Diverse Classrooms: A Case Study of Teacher Observations and Discussions - Acevedo	
	P07. Developing Elementary Preservice Teachers' Mathematical Practice: Attending to Precision - Pate	<i>P18. Learn About the AMTE STaR Program - A</i> MTE STaR Program Committee	
	P08. Early Opportunities to Authentically Practice Teaching Increased First Year Undergraduates' Interest a Mathematics Teaching Career - De la Cruz	P19. Learning to Learn, Acknowledging Anxiety, and Interrogating Identity: Collaboratively and Deeply Reflecting on Math - Reid, Reid	
	P09. Ecological Approaches in Mathematics and Science Teacher Education - Weston	P20. Learning to Teach Social Justice Mathematics: The Nature of Mathematics Teacher Candidates' Challenges and Resolutions Abstract - Kudaisi	
	P10. Empowering Teachers to Empower Students: A Framework for Fostering Mathematical Proficiency – Bainter, De Araujo, De Leon Alejandro, Engledowl, Wonsavage,	P21. Math Teachers for Tomorrow: An Innovative Partnership for Mathematics Teacher Preparation - Bryant Hare*, Wilson	
	P11. Engaging in Authentic Practices in Mathematics and Science: Influence on Student and Teacher Agency - McComas, Dingman, Kent	P22. Multi-Year Collaboration with Nonprofit to Prepare Preservice Teachers to Teach with Social Emotional Learning - O'Dell, Frauenholtz, Hoffman*, Bender*	
	P23. Opportunities for Collaborative Teacher Learning with Evidence of Student Mathematical Thinking - Moloney	P32. Teacher Questioning through a Virtual Teaching Simulator: Pre-Service Teachers Attending to Students' Thinking - Ataide Pinheiro, Kaur Bharaj, Park Rogers*, Howell, Mikeska	
	P24. Preservice and Beginning Teachers' Perspectives on Equity - Lapat*,Fernandes McGraw*,	P33. The Connection of Teacher Professional Identity and Teacher Retention of Veteran Math Secondary Educators - Gooden, Smith	

	3:30 PM	- 4:30 PM
	P25. Preservice Teachers' Development of Knowledge for Teaching with Online Tools through Planning and Peer Teaching - Fernandez, Schreiber*, Kollie*	P34. The Four Corners Activity: Building Preservice Teachers' Understanding of Concepts Related to Additive Reasoning - Knurek, Whitmore*
	P26. Recruit and Retain: Insights into Attracting and Keeping Secondary Mathematics Education Majors - Zimmerman	P35. The Impact of Deaf Culture on Math Teacher Discourse Practices Within the Secondary Classroom - Smith, Gooden
	P27. Reflective Journaling as A Tool for Understanding Teacher Learning - Kurutas	P36. Tracing Teachers' Beginning Questioning Practices Across Dot and Number Talks - Joswick, Conner, McMillan
-	P28. Researched Strategies for Minimizing Bias Sources to Improve Equitable Assessment of Mathematical Problem Solving Skills - Matney*, Fan*, Koskey*, Hutson*, Klein*, May*, Bostic	P37. Transforming Clinical Experiences through Purposeful Focus on Equitable Mathematics Teaching Practices (MTEP Session) - Hammonds*, Conway
	P29. Role of Reflective (Re)Constructions in Prospective Secondary Mathematics Teachers' Identity Development - Bloodworth	P38. Understanding Elementary Preservice Teachers' Use of Children's Literature in a Mathematics Methods Course - Rich
	P30. Scaling Teacher Professional Development: Developing Mathematics Teacher Leaders and Virtual Professional Learning Communities - Nazir Welji	P39. Understanding Preservice Teachers' Mathematics Teaching Efficacy: What Criteria are They Using? - Krejci
	P31. Supporting Elementary Teachers' Innovative Use of Information Communications Technology in Mathematics Classrooms - Lee	P40. What Did You Say?: Teacher Responses and Language Variation in the Early Elementary Mathematics Classroom - Womack-Adams

THURSDAY, FEBRUARY 8, 2024

Session 62 AMTE

Executive Ballroom

Poster Session

P01. Academic Parenthood in Mathematics Teacher Education: An International Study

Gabriel Oduro-Boamah*, University of South Florida Sadat Abubakar*, University of South Florida Eugenia Vomvoridi-Ivanovic, University of South Florida

In this poster session, we will present preliminary findings from a qualitative exploratory study whose purpose is to gain a global, multinational understanding of the experiences of university based Mathematics Teacher Educators who became parents in early careers.

P02. A Critical and Situated Framework for Mathematics Teacher Identity

Brian A Smith, University of Michigan

This poster will outline a framework for mathematics teacher identity that combines elements of Wenger's (1998) social ecology of identity and Helms' (1990, 1995) White racial identity development. Poster will include implications for mathematics teacher education research and practice.

P03. Analyzing Preservice Teachers' Mathematical Understanding within an Equity Focused Lesson in **Elementary Methods Courses**

Dittika Gupta. Midwestern State University Mark S Montgomery, Stephen F. Austin State University Colleen McLean Eddy, University of North Texas Karisma Morton, The University of North Texas

The presentation shares a lesson focused on engaging preservice teachers with Torres' Rights of Learner Framework within the context of area and non-standard units of measurement using research-based practices to support their understanding of content and issues of equity and access.

P04. An Analysis of the History of Mathematics and its Significance in Mathematics Education

Mariya Rosenhammer, Auburn University

How mathematics has been taught rests on the knowledge of a history of mathematics. In my poster, I will analyze the different stories that a history of mathematics has provided and how it has been reflected in mathematics education.

P05.Becoming Familiar with Middle School Students' Life Experiences as a Bridge For Engagement and Motivation

Kayla Sutcliffe, University of Florida Jesus Enrique Hernandez-Zavaleta*, University of Florida

Emerging themes in middle school student lived experiences interviews will be shared. Discussion will center on how this informs the decisions we should make to connect social justice concepts with mathematics education, specifically in the creation of mathematical modeling tasks.

P06. Cracking the Egg: A Self-Study into Mathematics Teacher Educators' Knowledge

Anna Gustaveson, University of North Carolina at Chapel Hill

Kathryn Habib*, University of North Carolina at Chapel Hill

Mathematical Knowledge for Teaching (MKT) and Mathematical Knowledge for Teaching Teachers (MKTT) in the noun form, can create a dichotomy of who has knowledge. In this self-study, we examine teacher preparation considering knowledge in verb form as a process.

P07. Developing Elementary Preservice Teachers' Mathematical Practice: Attending to Precision

Kaleigh Pate, University of Alabama

This research examines the development of elementary preservice teachers' ability to attend to precision through a series of professional learning seminars, written mathematical tasks, and micro teaching demonstrations.

P08. Early Opportunities to Authentically Practice Teaching Increased First Year Undergraduates' Interest a Mathematics Teaching Career.

Jessica de la Cruz, Assumption University

To increase the University's capacity to recruit, retain, and graduate mathematics education students, the Teaching Leadership Program engaged incoming undergraduates in a year long experiential learning program, including cohort based course work, training, planning, and teaching practice.

3:30 рм – 4:30 рм

P09. Ecological Approaches in Mathematics and Science Teacher Education

Tracy L. Weston, Middlebury College

This research synthesis resulted from recent research that suggests shifting teacher noticing conceptualizations from cognitive to ecological models. To understand the possibility and implications of ecological models of teacher noticing, teacher educators must first understand what is meant by "ecological."

P10. Empowering Teachers to Empower Students: A Framework for Fostering Mathematical Proficiency

Taylor Bainter, Lastinger Center at The University of Florida

Zandra de Araujo, *University of Florida* Jose David de Leon Alejandro, *University of Florida* Christopher Engledowl, *University of Florida* F. Paul Wonsavage, *University of Florida*

Students need to develop mathematical proficiency and teachers need to have adequate pedagogical knowledge amidst changing standards. This poster presents a framework with five components of mathematical practices for teacher educators to use when designing professional learning opportunities.

P11. Engaging in Authentic Practices in Mathematics and Science: Influence on Student and Teacher Agency

Kim McComas, University of Arkansas Shannon Dingman, University of Arkansas Laura B Kent, University of Arkansas

This poster provides results from a study of preservice and novice teachers that explores the development of teacher and student agency related to their involvement in STEM-related clubs that promote authentic practices in the disciplines of mathematics and science.

P12. EQUIPped to Notice: Exploring Mathematics Endorsement Students' Noticing of Racial Phenomena Through Reflections of Practice

Brittney Castanheira, *Mercer University* Susan Cannon, *University of Georgia* Ahkillah Johnson*, *Mercer University* Uyiosa Osarumen Ugiagbe, *University of Georgia*

In this presentation we share: one way EQUIP was integrated into a Mathematics Endorsement course sequence and fieldwork, and an exploration of how in-service teachers noticed and discussed (or not) racial phenomena as they implemented EQUIP in their elementary classrooms.

P13. Experiencing Online Inquiry Oriented Mathematics Professional Learning: A Tale of Two Teachers

Kristen Apraiz, University of Florida Nancy Fichtman Dana*, University of Florida Cynthia C Griffin*, University of Florida Tracy Ulrich*, University of Florida

This poster will explicate the culminating inquiries of two participants from different contexts and different levels of engagement in an online professional development for fourth grade teachers; and will interest mathematics teacher educators engaged in developing online professional development.

P14. Fostering Elementary Students' Positive Mathematical Identities with Multidisciplinary Learning

Krystal Barber, SUNY Cortland

Students need to explore and discuss math from multiple perspectives to see themselves as both math learners and math doers. This presentation will display multidisciplinary learning activities designed to promote positive math identities in a diverse, urban after-school setting.

P15. Improving Preservice Teachers' Mathematical Knowledge for Teaching Fractions

Melike Kara, Towson University

Preservice teachers (PSTs) often struggle with fractions, which can hinder their readiness for teaching this topic. The purpose of this study is to investigate PSTs' understanding of fractions using a novel approach that involves teaching fractions in a measurement context.

P16. Increasing the Professional Capacity of Middle Grades Mathematics Teachers to Teach Statistics

Robert C Schoen, Florida State University

Emphasis on statistics in the official mathematics curriculum continues to increase, but opportunities for teacher learning of statistics are few. Come learn about an intervention designed to support teacher enactment of statistics standards and its impact on teaching and learning.

P17. Instructional Practices in Linguistically Diverse Classrooms: A Case Study of Teacher Observations and Discussions

Carlos Ivan Acevedo, Texas State University

We discuss the importance of spreading awareness on effective and equitable practices to support Emergent Bilinguals in their mathematics learning. We explore teacher observations and discussions on small video clips that dive into certain teaching practices in linguistically diverse classrooms.

P18. Learn About the AMTE STaR Program

AMTE STaR Program Committee

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.

P19. Learning to Learn, Acknowledging Anxiety, and Interrogating Identity: Collaboratively and Deeply Reflecting on Math

Steven Reid, Queen's University Mary Reid, University of Toronto

This session will focus on key findings of a collaborative self study involving two math methods instructors and three teacher candidates. They work to uncover their experiences and learning in the math methods course, as well as their practicums.

P20. Learning to Teach Social Justice Mathematics: The Nature of Mathematics Teacher Candidates' Challenges and Resolutions Abstract

Queshonda Juanieka Kudaisi, University of North Texas

In this session, I present about the challenges and resolutions secondary mathematics teacher candidates experienced as they learned to teach mathematics for social justice.

P21. Math Teachers for Tomorrow: An Innovative Partnership for Mathematics Teacher Preparation

Emily Bryant Hare*, *Guilford County Schools* Holt Wilson, *University of North Carolina - Greensboro*

We share our district-university partnership's efforts to implement a program to recruit, prepare, and retain secondary mathematics teachers, including: key program features, evidence of success, lessons learned for establishing cross-organizational collaborations that align structures, resources, and systemic support for novice teachers.

P22. Multi-Year Collaboration with Nonprofit to Prepare Preservice Teachers to Teach with Social Emotional Learning

Jenna R O'Dell, *Bemidji State University* Todd Frauenholtz, *Bemidji State University* Rebecca Hoffman*, *Bemidji State University* Stacy Bender*, *Bemidji State University Partner*

This report will share our three-year collaboration with a local non-profit to help prepare preservice mathematics teachers to teach all students, especially those from high need backgrounds. Our presentation includes our analysis of interviews with the preservice teachers.

P23. Opportunities for Collaborative Teacher Learning with Evidence of Student Mathematical Thinking

Danielle Moloney, North Carolina State University

This poster presents research on how elementary teachers interact with student data in professional learning communities, with a focus on their engagement with evidence of student mathematical thinking and the role of this evidence in instructional design.

P24. Preservice and Beginning Teachers' Perspectives on Equity.

Loella E Lapat*, University of North Carolina at Charlotte Anthony Fernandes, University of North Carolina-Charlotte

Rebecca McGraw*, University of Arizona

This report is part of a larger study focusing on equity related knowledge, beliefs, and practice across 68 individuals and five teacher preparation programs. We seek to unpack ways these teachers think about equity and focus on culturally responsive teaching.

P25. Preservice Teachers' Development of Knowledge for Teaching with Online Tools through Planning and Peer Teaching

Maria Lorelei Fernandez, *Florida International University* Cristian Florian Schreiber*, *Florida International University*

Melvin Moses Kollie*, Florida International University

PSTs' learning to teach with online technologies through a cooperative peer-teaching project will be discussed, including analysis of PSTs' reflections on their own learning and development of TPACK, as well as changes from their initial to final revised lesson plans.

P26. Recruit and Retain: Insights into Attracting and Keeping Secondary Mathematics Education Majors

Stacey C. Zimmerman, Western Carolina University

We will explore results from our study with in-service teachers, school counselors, and undergraduate mathematics majors regarding interest in and barriers to teaching that provide insights into establishing pathways and partnerships for successful recruitment and retention of secondary mathematics teachers.

P27. Reflective Journaling as A Tool for Understanding Teacher Learning

B. Sumeyye Kurutas, University of Delaware

The goal of this study is to investigate how teachers reflect on their learning, and what aspects of teaching they reflect on within the context of using reflective journaling as part of their professional learning.

P28. Researched Strategies for Minimizing Bias Sources to Improve Equitable Assessment of Mathematical Problem Solving Skills

Gabriel Matney*, Bowling Green State University Yiyun Fan*, Drexel University Kristin L.K. Koskey*, Drexel University Turea Michelle Hutson*, Drexel University Michael Klein*, Drexel University Toni May*, Drexel University Jonathan David Bostic, Bowling Green State University

We share research on item bias types found in problem solving. Five themes of sources potentially leading to item bias in problem solving items emerged from expert panels' open-ended descriptions. Implications for mathematics teacher educators are discussed.

P29. Role of Reflective (Re)Constructions in Prospective Secondary Mathematics Teachers' Identity Development

Anna Bloodworth, The University of Georgia

Interviews with prospective secondary mathematics teachers revealed connections they made between past and current experiences and future teaching. We found that teacher educators can leverage mathematical tasks in pedagogy and content courses to support the development of professional identity.

P30. Scaling Teacher Professional Development: Developing Mathematics Teacher Leaders and Virtual Professional Learning Communities

Shaffiq Nazir Welji, University of Georgia

The Global Mathematics Professional Learning Network is a virtual, teacher-led professional development group. This poster presents its efforts to develop teacher leaders and views the project through multiple perspectives on scaling-up professional development, including Prediger and colleagues' (2019) Three-Tetrahedron model.

P31. Supporting Elementary Teachers' Innovative Use of Information Communications Technology in Mathematics Classrooms

Yi-Jung Lee, University of Arkansas

In this study, we interviewed 11 elementary teachers to explore their incorporation of educational technology to teach mathematics in the post-COVID era. We identified the features of the adopted technologies and invited them to discuss the relevant challenges they encountered.

P32. Teacher Questioning through a Virtual Teaching Simulator: Pre-Service Teachers Attending to Students' Thinking

Weverton Ataide Pinheiro, *Texas Tech University* Pavneet Kaur Bharaj, *University Bakersfield* Meredith Park Rogers*, *Indiana University* Heather Howell, *ETS* Jamie Mikeska, *ETS*

This study examines how preservice elementary education teachers engage with students' thinking. The study utilizes a combination of two frameworks to guide its approach. The findings reveal that preservice teachers encountered challenges attending to their students' thinking.

P33. The Connection of Teacher Professional Identity and Teacher Retention of Veteran Math Secondary Educators.

Chalandra Gooden, *The University of Alabama* Felicia Smith, *The University of Alabama*

This study aims to address math teacher retention issues by exploring the teacher professional identity of veteran secondary mathematics teachers working in hard-to-staff schools. Additionally, examine how their identity contributes to their decision to remain at their current school.

P34. The Four Corners Activity: Building Preservice Teachers' Understanding of Concepts Related to Additive Reasoning

Robert Knurek, University of Colorado Denver Kristin A Whitmore*, University of Colorado Denver

We present student work samples from an activity that we implemented with preservice teachers enrolled in an elementary math content course. The activity incorporated concrete manipulatives and figural representations to highlight concepts related to additive reasoning.

P35. The Impact of Deaf Culture on Math Teacher Discourse Practices Within the Secondary Classroom

Felicia Smith, The University of Alabama Chalandra Gooden, The University of Alabama

Research on Deaf and Hard of Hearing students is scarcely seen in math education research. To address this gap, this study focuses on discourse strategies to support Deaf and Hard of Hearing students in mathematics learning using American Sign Language.

P36. Tracing Teachers' Beginning Questioning Practices Across Dot and Number Talks

Candace Joswick, *The University of Texas at Arlington* Kimberly Conner, *University of Northern Iowa* Brandon McMillan, *Brigham Young University*

We describe how twelve 4th – 8th grade teachers, who are all new to Number Talks, take up this practice through looking at their questions posed during their first Dot Talk and two subsequent Number Talks.

P37. Transforming Clinical Experiences through Purposeful Focus on Equitable Mathematics Teaching Practices (MTEP Session)

K. Elizabeth Hammonds*, *Columbus State University* Basil Conway, *Columbus State University*

Join us to learn how a field-based observation tool has encouraged open dialogue around the equitable mathematics teaching practices and the standards for mathematical practice. Participants will receive a copy of the tool to use or adapt to their setting.

P38. Understanding Elementary Preservice Teachers' Use of Children's Literature in a Mathematics Methods Course

Erin Rich, University of Alabama

Research in progress explores how the integration of children's literature into an elementary mathematics methods course influences preservice teachers' efficacy beliefs.

P39. Understanding Preservice Teachers' Mathematics Teaching Efficacy: What Criteria are They Using?

Brooke Krejci, University of Wisconsin - River Falls

This poster is a presentation of qualitative results analyzing mathematics teacher efficacy in a secondary methods course. Results highlight a need to examine measures used by preservice teachers to ensure increases in mathematics teacher efficacy is aligned with student-centered instruction.

P40. What Did You Say?: Teacher Responses and Language Variation in the Early Elementary Mathematics Classroom

Kelly Womack-Adams, North Carolina State University

The goal of this study is to better understand the use of language and language variations (dialects) within the early elementary mathematics classroom. This poster presents findings of teacher responses to language variations used by students while learning mathematics content.

THURSDAY, FEBRUARY 8, 2024

RECEPTION FOR GRADUATE STUDENTS & EARLY CAREER FACULTY

Pool Deck

Graduate Students and early career faculty in their first three years are invited to join the AMTE Board of Directors and leadership on the Pool Deck for a reception. Refreshments will be served.

Visit http://bit.ly/AMTEMenuInfo24 or scan the QR code for more information about menu items.



FRIDAY, FEBRUARY 9, 2024

7:00 AM - 8:15 AM

A/M T E

BREAKFAST & AFFILIATE MEETINGS EXECUTIVE BALLROOM H & I

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

Visit http://bit.ly/AMTEMenuInfo4 or scan the QR code for more information about menu items.



OVERVIEW OF FRIDAY MORNING, FEBRUARY 9, 2024

	8:30 AM - 9:30 AM	9:45 AM - 10:45 AM	11:00 AM - 11:45 AM
Junior Ballroom F	63. Culturally Responsive STEAM Teacher Education: Navigating Competing Priorities in the Classroom - Jones, Keazer & Jung	78. Mathematics Teacher Educators Rethinking Grading: Affordances and Challenges in Alternative Grading Systems - Hertel, Broaddus, Hawley & Corven	
Junior Ballroom G	64. Empowering Elementary Teachers: Reflections on Task-Design and Dimensions of Equity - Wickstrom	79. When We Relate: Towards People-Centered Research - Adams Corral	94. Equity, and Social Justice
Salon 11	65. Expanding Equity Oriented Professional Development Opportunities in Clinical Experiences: Leveraging Assets and Perspectives Through CoLearning - Stafford, Fink, Heaton, Knapp* & Goffney*	80. Unveiling Narrative Identities in the Preservice Teacher Education Context: Perspectives from International Mathematics Educators - Aga, Yilmaz, Naresh, Atabas, Kanbir*, Zolfaghari* & Lee	
Salon 12	66. Come Network with Other Affiliates to Discover the What, Why, and How - AMTE	81. One-on-one Mathematics Coaching: What We Know and What We Wonder - Saclarides, Cobb*, Gillespie, Kochmanski, & Sevgi*	95. Am I Being Inclusive toward Students with Disabilities? - Romero Castro
Salon 13	67. Mathematical Writing to Scaffold Elementary Preservice Teacher Learning - Ozgun-Koca, Nazelli & Zopf	82. Developing a Vision for Equitable and Effective Mathematics Teaching Practices Through Engagement with Curriculum Materials - Rigelman	96. Programs and Opportunities for Mathematics Teacher Educators at the National Science Foundation - Alvarez, Hjalmarson, Khalil, McAlister-Shields, & Waller
Salon 14	68. Are Current K-5 State Mathematics Standards really the Common Core in Disguise? - Schmidt & Bush	83. Leveraging a Reflection Guide to Recognize Equity Teaching Practices in Diverse Picture Book Mathematics Tasks - Moldavan & Dias*	97. Technology as a Tool to Foster Reciprocal Family Connections and Showcase Children's Mathematical Knowledge - Ward & Damjanovic
Salon 15	69. Black Fugitive Pedagogies in Mathematics Education: Enunciating Subversive Practices of Mathematics Teacher Educators - Caro-Rora, Payne*, Flowers, Jr.*, Stewart & Turner	84. Applying Principles From the Science of Learning to Develop Fraction Sense in Struggling Math Students - Dyson	98. Moving Mathematics Methods Off Campus: Embedding Clinical Experiences - Harbour & Livers
Salon 16	70. A Beginning Conversation about Days After Pedagogy in Mathematics Teacher Education - Crespo, Orr & Howell	85. Interpreting Teachers' Attributions of Mathematical Success through Multiple Lenses - Willey*, Cross Francis*, Franklin, Gustaveson, Pierce & Yavuz	99. Enhancing Mathematics Teachers' Curricular Reasoning through Professional Development - Dingman & Teuscher
Salon 17	71. Cultivating Experienced Teachers' "Buy in" to the Core Tenets of Responsive Math Teaching: Challenges and Supports - Goldsmith-Markey & Valerio	86. Taking Up Space: An Interaction Geography Perspective for Analyzing Teachers' Movement - Metts, Garner, Shapiro* & Smith	100. A Discussion of Preservice and Inservice Teacher Noticing of Students' Errors: United States and China - Huang, Winters & Kimmins

	8:30 AM - 9:30 AM	9:45 AM - 10:45 AM	11:00 AM - 11:45 AM
Salon 18	72. Let's Say Gay: Queer and Queer-Allied Mathematics Teacher Educators Coming Together for Art and Action - Lee-Hassan, Garner, Koestler & Whipple	87. A Multifaceted Approach to Examining Participatory Equity: Juxtaposing Teachers', Students', and Our Own Perspectives - Fink	101. Modifying Tasks to Deepen Prospective Elementary Teachers' Understanding of Three Levels of Units with Fractions - Tobias, Erwin & Kimball*
Salon 19	73. "There isn't Enough Time!": Tensions and Opportunities for Integrating Mathematics Content in Methods Courses - Kang & Kirschner	88. Have an Idea for a Manuscript? Publications Editors - AMTE	Come Chat with AMTE's
Salon 20	74. Reflecting on Prospective Teachers' Responses to Understand Task Effectiveness and Inform Task Modifications - Olanoff*, Welder, Bajwa* & Tobias	89. Researching Equity in K-12 Mathematics: Navigating Political, Cultural Tensions through a Mutualistic Partnership for Inquiry - Baker, Crawford*, Bolyard, Edwards* & Varier*	102. Practice-Based Experiences for Prospective Teachers
Salon 21	75. Using a Graduate Profile to Center Career Long Learning: A Planning and Accountability Resource for MTEs - Amick & Jasien	90. A Framework for Selecting, Modifying, and Implementing Existing Teaching Math for Social Justice Lessons - Roman & Thanheiser	
Salon 22		91. Let Them Tell Us! Affective Focused Teaching, Learning to Expand Student Voices in the Math Classroom - Vancini & Paolucci*	
Salon 23	76. Nudging Teachers and Tasks to Enhance Students' Mathematical Engagement and Understanding - Candela, de Araujo, Stewart, Wonsavage, Otten, Baah & Wambua*	92. Balancing Dual Roles in Math Coaching: Context Expert and Thinking Partner - Carson, Choppin & Callard	103. Emerging Technology: Tips for Utilizing AI in Mathematics Education from the AMTE Technology Committee - AMTE
Salon 24	77. Engaging in Interinstitutional Research to Cultivate Positive Mathematics Identities: Current Analysis and Next Steps - Woods, Sweet, Johnson*, Bay-Williams, Rupe & Cutler	93. Promoting Growth Through Critical Transformative Pedagogies of Practice - Bondurant, Howell, Benoit, Young*, Jacobson, Wilburne, Franz, Barno* & O'Dwyer*	

FRIDAY, FEBRUARY 9, 2024

Session 63	Junior Ballroom F
Equity, Social Justice, and	d Mathematics Teacher
Education	
Symposium	

Culturally Responsive STEAM Teacher Education: Navigating Competing Priorities in the Classroom

Shelly M Jones, *Central Connecticut State University* Lindsay Keazer, *Sacred Heart University* Hyunyi Jung, *University of Florida*

Mathematics focused STEAM projects vary in the ways they integrate disciplines, utilize mathematics, and the contexts for exploring the disciplines. This multifaceted presentation brings together different perspectives on critical considerations for the design and implementation of culturally responsive STEAM projects.

Session 64 Junior Ballroom G AMTE AMTE Early Career Award Winner

Empowering Elementary Teachers: Reflections on

Task-Design and Dimensions of Equity

Megan Wickstrom, Montana State University

When teachers experience mathematics in ways that are creative, joyful, and purposeful, it is more likely they will cultivate these kinds of experiences in their classrooms. Megan will reflect on facets of task design in empowering teachers as mathematical thinkers.

Session 65	Salon 11
Professional Development	
Individual Session	

Expanding Equity Oriented Professional Development Opportunities in Clinical Experiences: Leveraging Assets and Perspectives Through CoLearning

Taylor Elsa Stafford, *University of Washington* Heather McGinnis Fink, *Portland State University* Ruth Heaton, *Teachers Development Group* Melinda Knapp*, *Oregon State University Cascades* Imani Goffney*, *University of Maryland-College Park*

We focus on mentor teachers' and teacher candidates' use of professional development tools designed to support co-learning about equity oriented mathematics instruction. We share and discuss rich examples of co-learning to demonstrate the possibilities for leveraging each participant's assets and perspectives. Session 66 AMTE Committee Sessions

Come Network with Other Affiliates to Discover the What, Why, and How

AMTE Affiliate Connections Committee

A time to network with state affiliates. A spreadsheet of data will be shared with a goal to connect with other affiliates that will support what you need in your own state.

Session 67 Mathematics Content and Curriculum Individual Session

Mathematical Writing to Scaffold Elementary Preservice Teacher Learning

S. Asli Ozgun-Koca, *Wayne State University* Christopher Dennis Nazelli, *Wayne State University* Deborah A. Zopf, *Henry Ford College*

We share how writing and exchanging mathematical journals created learning opportunities for both parties involved in the peer-review process and evolved into rich mathematical conversations. We identify four opportunities to learn with evidence of growth observed in our students' work.

Session 68 Salon 14 Mathematics Education Policy and Program Issues Individual Session

Are Current K-5 State Mathematics Standards really the Common Core in Disguise?

Ashley Schmidt, *University of Wisconsin-Milwaukee* Sarah B Bush, *University of Central Florida*

Mathematics standards guide what is taught in classrooms across the United States. Since 2012, states are disassociating from the Common Core and creating "new" standards. This session shares findings from a qualitative study which examined changes to K-5 standards from 2012-2022.

Salon 12

Session 69 Salon 15 Equity, Social Justice, and Mathematics Teacher Education Discussion Session

Black Fugitive Pedagogies in Mathematics Education: Enunciating Subversive Practices of Mathematics Teacher Educators

Domonique Lamar Caro-Rora, *Florida State University* Rolonda L. Payne*, *University of Maryland-College Park* Charles Flowers, Jr.*, *University of Tennessee -Knoxville* Karon Dolores Stewart, *Illinois State University* Blake O'Neal Turner, *Marguette University*

In this session, we build on Givens' (2021) work on "Fugitive Pedagogy" to create a fugitive space for mathematics teacher educators to discuss subversive practices that support Black learners, doers, and teachers in mathematics education.

Session 70 Salon 16 Development of Mathematics Teacher Educators Discussion Session

A Beginning Conversation about Days After Pedagogy in Mathematics Teacher Education

Sandra Crespo, *Michigan State University* Sheila Orr, *Michigan State University* Jermaine R. Howell, *Michigan State University*

This session focuses on "Days After Pedagogy" as a framework that supports asset-based and justice-oriented mathematics education. They will also engage with teaching artifacts to together unpack the components of enacting days after pedagogy in the context of mathematics education.

Session 71 Professional Development Individual Session

Cultivating Experienced Teachers' "Buy in" to the Core Tenets of Responsive Math Teaching: Challenges and Supports

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

The extent to which teachers embrace core tenets of responsive teaching impacts their adoption of responsive practices. This qualitative study describes a continuum of buy-in and identifies mediating factors and supports that help teachers move along this continuum.

Session 72 Salon 18 Equity, Social Justice, and Mathematics Teacher Education Individual Session

Let's Say Gay: Queer and Queer-Allied Mathematics Teacher Educators Coming Together for Art and Action

Alexa W.C. Lee-Hassan, University of Illinois at Chicago Brette Garner, University of Denver Courtney Koestler, Ohio University Kyle S Whipple, University of Wisconsin Eau Claire

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 73 Mathematics Pedagogy Discussion Session

Salon 19

"There isn't Enough Time!": Tensions and Opportunities for Integrating Mathematics Content in Methods Courses

Bona Kang, Ohio Wesleyan University Sara Kirschner, George Mason University

This session will engage elementary mathematics teacher educators in a discussion of how they have navigated time-related tensions in teaching their math methods courses and an opportunity to share and brainstorm strategies for productively integrating math content and methods.

Session 74 Mathematics Content and Curriculum Individual Session

Reflecting on Prospective Teachers' Responses to Understand Task Effectiveness and Inform Task Modifications

Dana Olanoff*, *Widener University* Rachael M Welder, *University of Nevada, Reno* Neet Priya Bajwa*, *Illinois State University* Jennifer M. Tobias, *Illinois State University*

We will engage participants in multiple versions of a task designed to develop specialized content knowledge of multiplication using array models, share prospective teachers' work, and discuss the rationale behind modifications we made to the original task based on responses.

Session 75 Professional Development Individual Session Salon 21

Salon 20

Using a Graduate Profile to Center Career Long Learning: A Planning and Accountability Resource for MTEs

Lisa Amick, University of Kentucky Lara Jasien, CPM Educational Program

We share a "Graduate Profile" created to guide the design of a practitioner inquiry program that centers teachers as producers of knowledge and as lifelong learners. Mathematics Teacher Educators will explore modifying the profile for use in their contexts.

Session 76 Mathematics Pedagogy Discussion Session

Nudging Teachers and Tasks to Enhance Students' Mathematical Engagement and Understanding

Amber G Candela, University of Missouri - St. Louis Zandra de Araujo, University of Florida Maria Nielsen Stewart, University of Missouri-Columbia F. Paul Wonsavage, University of Florida Samuel Otten, University of Missouri - Columbia Faustina Baah, University of Missouri - Columbia Mitchelle M. Wambua*, University of Missouri-Columbia

In this interactive session we will explore small meaningful suggestions for instructional improvement related to instructional tasks and teachers' engagement with students. We will explore examples, the development of these practices, and their use in professional development.

Session 77 Salon 24 Equity, Social Justice, and Mathematics Teacher Education Discussion Session

Engaging in Interinstitutional Research to Cultivate Positive Mathematics Identities: Current Analysis and Next Steps

Dawn Woods, Oakland University Ross Sweet, Simpson College Cheryll Crowe Johnson*, Asbury University Jennifer Bay-Williams, University of Louisville Kathryn Mary Rupe, Western Washington University Carrie S Cutler, University of Houston

We implemented an identity survey and related interview protocol to understand emerging and practicing teachers' mathematical identities. Join us to explore data, discuss strategies cultivating their (and their students) identities, and to participate in addressing Standard C.4.2.

FRIDAY, FEBRUARY 9, 2024

Session 78 Junior Ballroom F **Development of Mathematics Teacher Educators Symposium**

Mathematics Teacher Educators Rethinking Grading: Affordances and Challenges in Alternative Grading Systems

Joshua Hertel, University of Wisconsin-La Crosse Angela Broaddus, Benedictine College Lisa A Hawley, Grand Valley State University Julien Corven, Illinois State University

This symposium will create a space for attendees to discuss, examine, and analyze alternative approaches to grading and assessment. We will present multiple examples of alternative grading systems and facilitate small group discussion focused on equity, opportunities, and challenges.

Session 79 Junior Ballroom G AMTE

AMTE Dissertation Award Winner

When We Relate: Towards People-Centered Research

Melissa Adams Corral, University of Texas - Río Grande Valley

Together, we will explore how to make classroom-based research explicitly people-centered through shifts in what we think research is going to produce and do, who we do research for, and what we think the role of the researcher is.

Session 80 Equity, Social Justice, and Mathematics Teacher Education Symposium (9:45 am - 11:00 am)

Unveiling Narrative Identities in the Preservice **Teacher Education Context: Perspectives from** International Mathematics Educators

Zareen Gul Aga, James Madison University Zuhal Yilmaz, Louisiana State University Nirmala Naresh. University of North Texas Sebnem Atabas, University of Southern California Sinan Kanbir*, University of Wisconsin-Stevens Point Maryam Zolfaghari*, Kent State University Yi-Jung Lee, University of Arkansas

Learn about the influence of multifaceted identities on promoting equitable teaching practices in teacher education. The panel discussion will share findings from a collaborative self-study. Seven international mathematics teacher educators (IMTEs) analyzed the role of identities in math teacher education.

Session 81 **Professional Development** Symposium

Salon 12

One-on-one Mathematics Coaching: What We Know and What We Wonder

Evthokia Stephanie Saclarides, University of Cincinnati Paul Cobb*, Vanderbilt University Ryan Gillespie, University of Idaho Nicholas Kochmanski, University of North Carolina at Greensboro Sevim Sevgi*, Erciyes Universiti

This multifaceted presentation brings together three research studies examining one-on-one mathematics coaching. Participants will learn about how coaches can productively engage teachers in one-on-one coaching, and how coaches might be supported to learn how to effectively implement one-on-one coaching.

9:45 AM - 10:45 AM

Session 82 AMTE **Sponsored Sessions**

Developing a Vision for Equitable and Effective Mathematics Teaching Practices Through **Engagement with Curriculum Materials**

Nicole René Rigelman, Portland State University | The Math Learning Center

Learning to enact ambitious teaching practices through curriculum materials is a high-leverage practice for mathematics teacher educators. Investigate ways to use freely available resources to support teacher learning across the professional continuum, whether teaching courses or supporting fieldwork.

Session 83	Salon 14
Mathematics Pedagogy	
Discussion Session	

Leveraging a Reflection Guide to Recognize Equity **Teaching Practices in Diverse Picture Book** Mathematics Tasks

Alesia Mickle Moldavan, Georgia Southern University Laurel Dias*, Utah Valley University

Participants will engage in an interactive discussion about equity-based teaching practices in the context of elementary mathematics tasks referencing diverse picture books and how a reflection guide can be used with preservice teachers to recognize and develop such practices.

Session 84 Mathematics Content and Curriculum Individual Session

Salon 15

Applying Principles From the Science of Learning to **Develop Fraction Sense in Struggling Math Students**

Nancy Dyson, University of Delaware

This session will present the findings of the first two cohorts of an efficacy trial of a fraction intervention. The intervention consists of 24 animated PowerPoint lessons which employ principles derived from research in the cognitive and learning sciences.

Session 85 Equity. Social Justice, and Mathematics Teacher Education **Discussion Session**

Interpreting Teachers' Attributions of Mathematical Success through Multiple Lenses

Craig Willey*, Indiana University Purdue University Indianapolis Dionne Cross Francis*, University of North Carolina Jeffery Franklin, Indianapolis University Purdue University Indianapolis Anna Gustaveson, University of North Carolina at Chapel Hill Sheniqua Pierce, Georgia State University Selim Yavuz, Indiana University

Teachers draw from a variety of experiences to make sense of why some children succeed in mathematics while others struggle. In this session, we present examples of teachers' explanations that seem straightforward, but, when scrutinized, these explanations reveal complicated sense-making.

Session 86

Salon 17

Teaching and Learning with Technology **Discussion Session**

Taking Up Space: An Interaction Geography Perspective for Analyzing Teachers' Movement

Elizabeth Metts, Vanderbilt University Brette Garner, University of Denver Ben Rydal Shapiro*, Georgia State University Jessica Lynn Smith, Vanderbilt University

Explore classroom data using an open-sourced visualization tool, the Interaction Geography Slicer. Participants will explore classroom data and consider the often-overlooked spatial dimensions of teaching and explore the ways the Interaction Geography Slicer can contribute to teaching analyses and teacher education.

Salon 13

Session 87 Salon 18 Equity, Social Justice, and Mathematics Teacher Education Individual Session

A Multifaceted Approach to Examining Participatory Equity: Juxtaposing Teachers', Students', and Our Own Perspectives

Heather McGinnis Fink, Portland State University

We will examine how various pieces of data add to (and complicate) the story of how four students experienced a small group math task, while addressing the question: To what extent, in what ways, and from whose perspective was participation equitable?

Session 88 AMTE Committee Sessions Extended Session (9:45 am - 11:45 am)

Have an Idea for a Manuscript? Come Chat with AMTE's Publications Editors

AMTE Publications Division

Come pitch an idea to AMTE publication editors and receive feedback! All AMTE publications (Mathematics Teacher Educator, Contemporary Issues in Technology and Teacher Education-Math, Connections, Professional Book Series) will be represented. Editors will also share differences among the publications.

Session 89 Collaborations and Partnerships Individual Session

Salon 20

Salon 19

Researching Equity in K-12 Mathematics: Navigating Political, Cultural Tensions through a Mutualistic Partnership for Inquiry

Courtney Baker, *George Mason University* Deborah J Crawford*, *George Mason University* Johnna Bolyard, *West Virginia University* Katherine Comey Edwards*, *George Mason University* Divya Varier*, *George Mason University*

We share experiences of a school-university partnership (SUP) seeking to emphasize equitable avenues for deeper mathematical learning and de-emphasize standardized assessments. The partnership integrates the K-12 partners' agenda as it explores systems of influence to inform mathematics teaching and leadership. Session 90 Salon 21 Equity, Social Justice, and Mathematics Teacher Education Discussion Session

A Framework for Selecting, Modifying, and Implementing Existing Teaching Math for Social Justice Lessons

Kathryn E. Roman, *Portland State University* Eva Thanheiser, *Portland State University*

In this presentation, we will introduce a framework for selecting, modifying, and implementing existing teaching math for social justice lessons and share one example of how we used the framework. Participants will then apply this framework for their own context.

Session 91 Professional Development Individual Session

Salon 22

Let Them Tell Us! Affective Focused Teaching, Learning to Expand Student Voices in the Math Classroom

Sam Vancini, *University of Florida* Catherine Paolucci*, *WestEd*

This interactive session focuses on a multiyear research program aimed to support affective development in mathematics education. We highlight an innovate tool that teachers can use to leverage students' diverse values and experiences.

Session 92 Salon 23 Development of Mathematics Teacher Educators Individual Session

Balancing Dual Roles in Math Coaching: Context Expert and Thinking Partner

Cynthia Carson, *University of Rochester* Jeffrey Choppin, *University of Rochester* Cynthia Callard, *University of Rochester*

Content-focused coaches have dual roles; a content expert and thinking partner. Coaches struggle with knowing how to leverage their own expertise and how to draw from teachers' expertise. This session will explore this tension through our findings and group discussions. Session 93 Salon 24 Equity, Social Justice, and Mathematics Teacher Education (MTEP Session) Symposium (9:45 am - 11:00 am)

Promoting Growth Through Critical Transformative Pedagogies of Practice

Liza Bondurant, *Mississippi State University* Heather Howell, *ETS* Gregory Benoit, *Boston University* Jamaal Rashad Young*, *Texas A&M University* Erik Jacobson, *Indiana University* Jane M Wilburne, *Penn State Harrisburg* Dana Pomykal Franz, *Mississippi State University* Erin Barno*, *Boston University* Eowyn Prabha O'Dwyer*, *Educational Testing Service*

In this 75-minute symposium, we share work that reimagines pedagogies of practice as supportive spaces to engage math educators in iterative cycles of growth that are critically transformative with respect to those educators' views on and ability to support equity.

FRIDAY, FEBRUARY 9, 2024

Session 94 Junior Ballroom G Equity, Social Justice, and Mathematics Teacher Education Report Session

Disrupting the Expectation of Grades in Mathematics Teacher Education

Brandon Samples, Georgia College & State University

This report describes the implementation of an ungrading assessment approach in preservice mathematics teacher education courses. We will discuss the effects that ungrading has on mathematical knowledge for teaching and future practice including a model for other teacher educators.

Examining the Detrimental Impacts of the Model Minority Myth in Math Classrooms

Mary Reid, University of Toronto Steven Reid, Queen's University

This session will focus on key findings of a mixed methods study that amplifies and legitimizes the lived realities of approximately 1000 Asian students in grades 7-12 who experienced negative impacts of the model minority myth in math class.

Session 95 Salon 12 Equity, Social Justice, and Mathematics Teacher Education Individual Session

Am I Being Inclusive toward Students with Disabilities?

Offir Romero Castro, Western Michigan University

Does our intent to be inclusive match our impact? This session focuses on perceptions toward students with disabilities, sharing current research, and providing opportunities to engage in activities that will increase attendees' understanding of what it means to be inclusive. Session 96 Salon 13 Equity, Social Justice, and Mathematics Teacher Education Individual Session

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

James Alvarez, National Science Foundation Margret Hjalmarson, National Science Foundation Deena Khalil, National Science Foundation Leah McAlister-Shields, , National Science Foundation Patrice Waller, National Science Foundation

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 97

Salon 14

Teaching and Learning with Technology Individual Session

Technology as a Tool to Foster Reciprocal Family Connections and Showcase Children's Mathematical Knowledge

Jennifer Ward, *Kennesaw State University* Victoria Damjanovic, *Northern Arizona University*

In this presentation, we highlight how technology was used to cultivate reciprocal communication with families around children's mathematical knowledge. Technology helped to position children as co-constructors in the mathematics classroom opening two way dialogue around children's mathematical progress.

Session 98 Salon 15 Practice-Based Experiences for Prospective Teachers Individual Session

Moving Mathematics Methods Off Campus: Embedding Clinical Experiences

Kristin E. Harbour, University of South Carolina Stefanie D. Livers, Bowling Green State University

Site-based, embedded methods courses are positioned as a way to bridge the theory to practice divide often noted within preparation programs. We present elementary case models that engage in this critical work and ways to adapt models for different contexts.

11:00 ам – 11:45 ам

Session 99 Mathematics Content and Curriculum Individual Session

Enhancing Mathematics Teachers' Curricular Reasoning through Professional Development

Shannon Dingman, *University of Arkansas* Dawn Teuscher, *Brigham Young University*

Mathematics teachers rely heavily on their curricular reasoning (CR) when making decisions regarding curriculum. In this session, we highlight the Instructional Pyramid model for CR and discuss approaches teacher educators can use to enhance teachers' CR.

Session 100 Mathematics Pedagogy Individual Session

Salon 17

A Discussion of Preservice and Inservice Teacher Noticing of Students' Errors: United States and China

Rongjin Huang, *Middle Tennessee State University* Jeremy J Winters, *Middle Tennessee State University* Dovie Louise Kimmins, *Middle Tennessee State University*

Participants will engage in a discussion of a survey of preservice and inservice teachers in China and the United States. We will share differences between cultures and teacher experience. Implications for methods courses and professional development will be explored.

Session 101 Mathematics Content and Curriculum Individual Session

Salon 18

Modifying Tasks to Deepen Prospective Elementary Teachers' Understanding of Three Levels of Units with Fractions

Jennifer M. Tobias, *Illinois State University* Alicia Erwin, *Illinois State University* Kyle Kimball*, *Illinois State University*

We will engage participants in examining preservice teachers' strategies when solving fraction tasks requiring coordinating three levels of units. The purpose will be to consider how analyzing preservice teachers' thinking coupled with task modifications can support their specialized content knowledge. Session 102 Salon 20 Practice-Based Experiences for Prospective Teachers Report Session

Connections Prospective Teachers Make Between Mathematics and Social Justice in their Methods Courses

Zareen Gul Aga, James Madison University

The presentation describes the connections three prospective teachers made between mathematics and social justice. Participants will consider their own experiences as similar and different to the three case studies and explore actionable steps to support equitable teaching practices.

Addressing the Methods Course and "Real Classroom" Disconnect Through Case Based Lesson Planning

Mark Causapin, *Concordia College* Mona Ibrahim, *Concordia College*

What practical solutions could teacher educators implement to address the problems of new teachers abandoning reform oriented teaching principles and the disconnect between university and school classrooms? This presentation is about the case method and case-based lesson planning, and its benefits.

Positioning Prospective Teachers as Experts in a Collaborative Professional Development

Cyndi Edgington, North Carolina State University Luke B. Carman, North Carolina State University Charlese B Harris, North Carolina State University Robin Anderson, North Carolina State University

In this session, we present a model of professional development that promotes shared learning of prospective teachers, mentor teachers, and university personnel and highlight ways the PD positioned prospective teachers as experts.

Session 103 AMTE Committee Sessions

Salon 23

Emerging Technology: Tips for Utilizing AI in Mathematics Education from the AMTE Technology Committee

AMTE Technology Committee

This session will explore emerging AI technologies and strategies for helping pre- and in-service teachers navigate the affordances and constraints of different uses of AI tools in mathematics education.

11:45 PM - 1:15 PM

AMTE LUNCH & BUSINESS MEETING EXECUTIVE BALLROOM H & I Please join us for lunch, organizational updates, and official AMTE proceedings. Image: Comparison of the two proceedings of the two proceedings of two

OVERVIEW OF FRIDAY AFTERNOON, FEBRUARY 3, 2024

	1:15 PM - 2:15 PM	2:30 PM - 3:30 PM	4:00 PM - 5:00 PM
Junior Ballroom F	104. Empowering Mathematics Learr in K-12 Classrooms and Teacher Edu & Desai		
Junior Ballroom G	105. A Survey Instrument to Raise Aw Equity Beliefs: Foundations and Appl Valdivia* & Yavuz		
Salon 11	106. Using Sustainable Online Professional Learning Communities to Support Early Career Teachers - Condon, Ebby*, Remillard & Hess*	 120. Effective Strategies to Support Professional Growth in the Teaching and Learning of Data and Statistics Mojica, Thrasher, Lee, Kuhlman & Graham 	134. Feeding Forward from Simulations: What Preservice Teachers' Take from Feedback - Shaughnessy, Claiborne, Okun*, Boerst & Garcia
Salon 12	107. Diversifying and Sustaining the Math Teacher Pipeline Through Mentorship, Myth Busting, and Immersive Experiences - Valerio & Carl*	121. Engaging K-8 Teachers in Social Justice Oriented Mathematical Modeling Tasks - Wickstrom & Jung	
Salon 13	108. Responding to Student Thinking through Curriculum Materials - Drake & Wallus	122. Engaging Prospective Middle Level Teachers with Data Analysis Through an Authentic Anthropology Problem - Zbiek, Johnson & Peters	135. Past, Present, and Future of Mathematics Specialist Research Agenda - Livers, Harbour, Hjalmarson*, Baker & Edwards*
Salon 14	109. Launching Coaching Conversations: Exploring How Mathematics Coaches Initiate Planning and Debriefing Conversations with Teachers - Kruger	123. Leveraging Professional Development to Support Scholarship and Mentorship: Sharing Ideas and Strategies - Barlow, Watson, Lischka & Hartland*	136. Professional Development of Mathematics Teacher Educators: Insights from Research - Naresh, DuCloux, Cavey, Roberson* & Hopkins*
Salon 15	 110. Mathematics Instructional Leaders' Visions of Equitable Instruction - Wilson, Adefope*, McCulloch, Schwartz, Mawhinney* & Stephan 	124. The Promise of Mathematical Making in Teacher Preparation - Greenstein & Akuom*	137AND Inclusion: What Are We Doing To Prepare Our Teachers? - Harrington, Rhine, Sellers* & Driskell
Salon 16	111. "but is that what we're looking for?": Leveraging Collective Doubt for Collaborative Learning - Donaldson & Karp	125. Curriculum Analysis Rubric: Using Black Feminist Mathematics Pedagogies to Support Noticings for Equity - Eanes*, Jasien, Lolkus* & Dietiker*	138. Teacher Learning about Disability in Mathematics, Statistics, and Mathematics Education Classrooms - Green & Westby
Salon 17	112. The Panorama of Meanings of Productive Struggle - Kamlue, Arciaga & Van Zoest	126. Implementing a New Model for Student Engagement: Veteran Math Teachers' Pedagogical Problem Posing and Solving - Cavanna, Staples, Cardetti & Frazee	139. Data Storytelling in a K-8 Preservice Mathematics Methods Course - Elrod & Barker
Salon 18	113. Student Teachers' Professional Noticing in Written Justifications Compared to Researchers' Analysis of the Same Video Instances - Switzer	127. Equitably Noticing Multilingual Learners' Thinking - Jensen, Gallagher & Scrivner	140. Supporting Progress in Preservice Elementary Teachers' Geometric Discourse - Kamaldar, Caro-Rora & Whitacre

	1:15 PM - 2:15 PM	2:30 PM - 3:30 PM	4:00 PM - 5:00 PM
Salon 19	114. Preparing Prospective Teachers to Design and Deliver High Quality Instruction Through Practice Based Experiences - Ideus & Pace*	128. What Do We Mean When We Describe a Mathematical Task as "Open?" - Mainzer & McCloskey	141. Elementary Mathematics Specialists Policy, Preparation, and Practice: Advocacy, Development, Impact, and Needed Support - Rigelman, Fennell & Swars Auslander
Salon 20	115. Supporting Reading Data Visualizations: Going Beyond Notice and Wonder - Weiland & Sundrani*	129. Impact of Real-Time Coaching In Early Field Teaching Experiences - Do & Arbaugh	142. "Things Didn't Go Exactly as We Planned": Learning to Teach Responsively in a Math-Methods Course - Jarry-Shore
Salon 21	116. The Black Woman's Toolkit: Stories of Persistence in Undergraduate Mathematics Courses - Oriowo	130. Utilizing Swivl to Support Rural Elementary Preservice Teachers in Eliciting and Interpreting Student Mathematical Thinking - Byrd & Allday	143. The Challenges of Implementing the Mathematical Practices: Identifying Approaches to Support Pre- and Inservice Teachers - Aforismo, Hogan & Casa
Salon 22	117. The Struggle is Real! Facilitating Preservice Teachers' Engagement in Productive Struggle Through Various Course Activities - Anthony & Howse*	131. Defining "Community" to Support Preservice Mathematics Teachers to Use Community Cultural Wealth - Carman & Sundrani*	144. Mathematics and Identity: Lived Experiences of a Black Woman Prospective Teacher - Burgess, Johnson*, Gómez Marchant*, Aguilar*, Sanchez Gutierrez* & Baniahmadi*
Salon 23	118. Get the Facts Out: Transforming the Narrative of the Teaching Profession to Address Teacher Shortage - AMTE	132. Discussions of How to Design, Teach, and Assess within Methods of Teaching Courses - AMTE	145. Looking Back to Move Forward: Examining Past AMTE Presentations on Equity - AMTE
Salon 24	119. Program Transformation: Working Smarter (Not Harder) Toward Meeting the AMTE Standards for Partnerships and Equity - Lischka, Smith, Lai & Franz	133. Efforts to Increase the Number and Diversity of Mathematics Teachers Across North Carolina - Chandler, Grady*, Edgington, Slate & Rhodes*	146. Mindfulness for Addressing Math Anxiety in Mathematics Courses for Preservice Elementary and Middle School Teachers - Welder, Champion & Burton

FRIDAY, FEBRUARY 9, 2024

Session 104 Junior Ballroom F Mathematics Content and Curriculum Extended Session (1:15 pm - 3:15 pm)

Empowering Mathematics Learners through Mathematical Modeling in K-12 Classrooms and Teacher Education Programs

Aline Abassian*, *University of Central Florida* Daniel Edelen, *Georgia State University* Siddhi Desai, *Fairleigh Dickinson University*

Together, we will explore how mathematical modeling process and tasks:enrich mathematical knowledge; helps develop content knowledge for teaching; centers, leverages, allows learners to analyze community and global context for mathematical situations, and expands the narrative of who belongs in mathematics education.

Session 105 Junior Ballroom G Equity, Social Justice, and Mathematics Teacher Education Extended Session (1:15 pm - 3:15 pm)

A Survey Instrument to Raise Awareness of Mathematics Teacher Equity Beliefs: Foundations and Applications

Erik Jacobson, *Indiana University* Naomi Jessup, *Georgia State University* Dubravka Svetina Valdivia*, *Indiana University* Selim Yavuz, *Indiana University*

This workshop introduces a new instrument that explores connections between deficit discourses and attribution beliefs and fosters understanding of harmful assumptions. Attendees will discuss results and how to frame, deliver, and debrief use of the instrument in their own contexts. Session 106 Professional Development Discussion Session

Using Sustainable Online Professional Learning Communities to Support Early Career Teachers

Lara Condon, *University of Pennsylvania* Caroline Ebby*, *University of Pennsylvania* Janine Remillard, *University of Pennsylvania* Brittany Hess*, *University of Pennsylvania*

The session focuses on how an online video feedback inquiry group can provide opportunities for novice teachers to continue to develop responsive teaching practices. Attendees will engage in reflective conversations about other strategies for establishing similar formats for networked learning communities.

Session 107 Salon 12 Mathematics Education Policy and Program Issues Individual Session

Diversifying and Sustaining the Math Teacher Pipeline Through Mentorship, Myth Busting, and Immersive Experiences

Jennifer Lynn Valerio, *University of Pennsylvania* Nicole C Carl*, *University of Pennsylvania*

Using qualitative analysis of focus group and questionnaire data, we describe barriers students of color experience that make them less likely to pursue and sustain a career in science and math teaching. Implications presented include ways to mediate these barriers.

Session 108 AMTE Sponsored Sessions Salon 13

Responding to Student Thinking through Curriculum Materials

Corey Drake, *The Math Learning Center* Mike Wallus, *The Math Learning Center*

Curriculum materials are often viewed as constraints, limiting teachers' capacity to respond to children's mathematical thinking and support them in developing positive mathematics identities. We will share ways to use curriculum materials as tools for responsive teaching through strengths-based differentiation.

1:15 рм – 2:15 рм

Session 109 Salon 14 Development of Mathematics Teacher Educators Individual Session

Launching Coaching Conversations: Exploring How Mathematics Coaches Initiate Planning and Debriefing Conversations with Teachers

Jennifer S Kruger, *University of Rochester*

In this session, we will present the methods and findings from our empirical examinations of how coaches launch coaching conversations and engage in discussions focused on the characteristics of productive conversation launches.

Session 110 Salon 15 Equity, Social Justice, and Mathematics Teacher Education Individual Session

Mathematics Instructional Leaders' Visions of Equitable Instruction

Holt Wilson, University of North Carolina - Greensboro Olufunke Adefope*, East Carolina University Allison McCulloch, UNC Charlotte Catherine Stein Schwartz, East Carolina University Katherine Mawhinney*, Appalachian State University Michelle Stephan, University of North Carolina at Charlotte

In this session, we share findings from a study of mathematics instructional leaders' visions of equitable mathematics teaching, its relationship to their visions of high quality instruction, and discuss implications for mathematics teacher educators.

Session 111 Professional Development Individual Session

Salon 16

"...but is that what we're looking for?": Leveraging Collective Doubt for Collaborative Learning

Sara Donaldson, *Wheaton College* Karen Karp, *Johns Hopkins University*

This interactive session centers an exploration of a five phase social learning framework that positions moments of collective doubt as opportunities for collaborative, practice based learning and the development of a cohesive vision for transformative mathematics teaching and learning.

Session 112 Mathematics Pedagogy Discussion Session

The Panorama of Meanings of Productive Struggle

Nitchada Kamlue, *Western Michigan University* Yaronn James Arciaga, *Western Michigan University* Laura R Van Zoest, *Western Michigan University*

What exactly is productive struggle? This discussion session will consider how productive struggle has been described, generate definitions of productive struggle, test out the generated definitions against video clips of students struggling, and identify key features of productive struggle.

Session 113 Salon 18 Practice-Based Experiences for Prospective Teachers Individual Session

Student Teachers' Professional Noticing in Written Justifications Compared to Researchers' Analysis of the Same Video Instances

John Matt Switzer, Texas Christian University

We will discuss findings from employing a methodology to study student teachers interrelated professional noticing skills, differences in findings when studying professional noticing as individual skills, and share implications for developing preservice mathematics teacher educators professional noticing.

Session 114 Mathematics Pedagogy Discussion Session

Preparing Prospective Teachers to Design and Deliver High Quality Instruction Through Practice Based Experiences

Aaron Ideus, *North Carolina State University* Michelle Murphy Pace*, *North Carolina State University*

This discussion session will explore the ways in which teacher preparation programs seek to infuse practice-based learning experiences in their programs for prospective teachers. Preliminary findings from our own Task-Based Instruction Boot Camp will be shared to start this conversation.

Session 115 Mathematics Content and Curriculum Individual Session

Supporting Reading Data Visualizations: Going **Beyond Notice and Wonder**

Travis Weiland, University of Houston Anita Sundrani*, Northwestern University

We share results of two iterations of design research with teachers in building humble theories and instructional resources to support teachers in creating activities to support students reading of data visualizations beyond just noticing and wondering, building on prior frameworks.

Session 116 Salon 21 Equity, Social Justice, and Mathematics Teacher Education Individual Session

The Black Woman's Toolkit: Stories of Persistence in Undergraduate Mathematics Courses

Olanrewaju Oriowo, University of North Carolina at Charlotte

The researcher will engage participants in discussion and potential implications surrounding the preliminary findings from a dissertation study that seeks to illuminate the capital that Black women, who are future secondary mathematics educators, leveraged to persist towards licensure.

Session 117 Mathematics Content and Curriculum Individual Session

Salon 22

Salon 20

The Struggle is Real! Facilitating Preservice Teachers' Engagement in Productive Struggle **Through Various Course Activities**

Monica Anthony, Georgia Gwinnett College Tashana Howse*, Georgia Gwinnett College

The purpose of this presentation is to examine and explore how mathematics teacher educators can leverage pre-service teachers' productive struggle in mathematics content courses to better prepare PSTs to support their future students' productive struggle.

Session 118 AMTE **Committee Sessions**

Get the Facts Out: Transforming the Narrative of the Teaching Profession to Address Teacher Shortage

AMTE Get That Facts Out Committee

"Join the AMTE Get the Facts Out task force in discussing successes and challenges in communicating the benefits of becoming a mathematics teacher. Participants will share their knowledge and strategies for preservice teacher recruitment, as well as learn from others."

Session 119

Salon 24 Mathematics Education Policy and Program Issues **Discussion Session (MTEP Session)**

Program Transformation: Working Smarter (Not Harder) Toward Meeting the AMTE Standards for Partnerships and Equity

Alyson E. Lischka, *Middle Tennessee State University* Wendy M Smith. University of Nebraska-Lincoln Yvonne Lai, University of Nebraska-Lincoln Dana Pomykal Franz, *Mississippi State University*

The work of program transformation to meet AMTE Standards is most effective when aligned with other expectations for MTEs' work. We will facilitate discussion and share research on how MTEs navigate expectations, policy, and equity efforts to enact program transformation.

Friday, February 9, 2024

Session 120	
Professional Development	
Individual Session	

Salon 11

Salon 13

Effective Strategies to Support Professional Growth in the Teaching and Learning of Data and Statistics

Gemma Foust Mojica, North Carolina State University Emily Thrasher, North Carolina State University Hollylynne Lee, North Carolina State University Adrian Kuhlman, North Carolina State University Bruce M Graham, North Carolina State University

Participants will identify aspects of effective professional development that develop secondary teachers' data science and statistics teaching practices. We will share our online professional learning platform and research based strategies to support teachers in building data science and statistics teaching expertise.

Session 121 Salon 12 Equity, Social Justice, and Mathematics Teacher Education Individual Session

Engaging K-8 Teachers in Social Justice Oriented Mathematical Modeling Tasks

Megan Wickstrom, *Montana State University* Hyunyi Jung, *University of Florida*

In this session, we share our research developing and enacting social justice-oriented modeling tasks. We explore how teachers draw on their mathematical knowledge, express ideas related to their identities, and explore and wrestle with societal constructs.

Session 122 Mathematics Content and Curriculum Individual Session

Engaging Prospective Middle Level Teachers with Data Analysis Through an Authentic Anthropology Problem

Rose Mary Zbiek, *The Pennsylvania State University* Matthew M Johnson, *The Pennsylvania State University* Susan A Peters, *University of Louisville*

We will share a collaborative math and science effort that challenged prospective teachers to identify a mystery specimen through authentic anthropology data. You will engage in an activity and see student work. The activity can be adapted for your students. Session 123 Salon 14 Development of Mathematics Teacher Educators Discussion Session

Leveraging Professional Development to Support Scholarship and Mentorship: Sharing Ideas and Strategies

Angela T. Barlow, *University of South Alabama* Lucy Watson, *Belmont University* Alyson E. Lischka, *Middle Tennessee State University* Kristin Hartland*, *James Clemens High School*

Join us as we discuss the various ways in which mathematics teacher educators can leverage their professional development projects to support both production of scholarship and opportunities for mentoring early career scholars and graduate students.

Session 124 Mathematics Pedagogy Individual Session

Salon 15

The Promise of Mathematical Making in Teacher Preparation

Steven Greenstein, *Montclair State University* Denish Akuom*, *Montclair State University*

Attendees will realize the benefits of their participation in a Mathematical Making Experience that has been shown to promote epistemic and pedagogical shifts toward inquiry-oriented creative and participatory practices that support teaching and learning mathematics with joy and understanding.

Session 125 Salon 16 Equity, Social Justice, and Mathematics Teacher Education Individual Session

Curriculum Analysis Rubric: Using Black Feminist Mathematics Pedagogies to Support Noticings for Equity

Marlena Eanes*, Vanderbilt University Lara Jasien, CPM Educational Program Michael Lolkus*, CPM Educational Program Leslie Dietiker*, Boston University

We share a curriculum analysis rubric that translates the Black Feminist Mathematics Pedagogies framework (Joseph, 2021) into a tool for prospective and practicing mathematics teachers to gauge how curricula (mis)align with race-conscious goals for educational equity.

2:30 рм - 3:30 рм

Session 126	
Professional Development	
Individual Session	

Implementing a New Model for Student Engagement: Veteran Math Teachers' Pedagogical Problem Posing and Solving

Jillian M. Cavanna, University of Hartford Megan Staples, University of Connecticut Fabiana Cardetti, University of Connecticut Leah M Frazee, Central Connecticut State University

In this session, we share pedagogical dilemmas, and reflections, of veteran math teachers in one state's high needs districts as they worked in small collaborative learning groups to advance their practice and enhance engagement and student learning.

Session 127 Salon 18 Equity, Social Justice, and Mathematics Teacher Education Discussion Session

Equitably Noticing Multilingual Learners' Thinking

Jess Jensen, *California Polytechnic State University* Melissa Ann Gallagher, *University of Houston* Shaimaa Scrivner, *University of Houston*

Participants will notice multilingual learners' thinking through video analysis using the Equitably Attending to and Interpreting Student Thinking Framework as a lens. We will then examine prospective teachers' noticing to consider ways to better support equitable noticing of student thinking.

Session 128 Mathematics Pedagogy Individual Session

Salon 19

Salon 17

What Do We Mean When We Describe a Mathematical Task as "Open?"

Emily Amanda Mainzer, *The Pennsylvania State University* Andrea McCloskey, *The Pennsylvania State University*

Participants will discuss the use of the term "open" in describing mathematical tasks. Participants will brainstorm ways tasks can be open and examine specific tasks. We will share existing frameworks for classifying tasks and present a potential updated framework.

Session 129 Salon 20 Practice-Based Experiences for Prospective Teachers Discussion Session

Impact of Real-Time Coaching In Early Field Teaching Experiences

Seonmi Do, *The Pennsylvania State University* Fran Arbaugh, *Pennsylvania State University*

We engaged in real-time coaching (RTC) during secondary PSTs' teaching episodes in an early field experience. In this session, we present findings from and engage in discussions about, a study of the PSTs' perspectives on how RTC benefited their learning.

Session 130 Mathematics Pedagogy Individual Session

Salon 21

Utilizing Swivl to Support Rural Elementary Preservice Teachers in Eliciting and Interpreting Student Mathematical Thinking

Kelly Overby Byrd, *University of South Alabama* R. Allan Allday, *University of South Alabama*

We will share how technology was used to provide performance feedback to elementary preservice teachers at a rural school. Through quantitative data and email-specific performance feedback, preservice teachers increased students' opportunities to respond to content-related mathematics prompts in the classroom.

Session 131 Salon 22 Equity, Social Justice, and Mathematics Teacher Education Individual Session

Defining "Community" to Support Preservice Mathematics Teachers to Use Community Cultural Wealth

Luke B. Carman, *North Carolina State University* Anita Sundrani*, *Northwestern University*

In this session, we present a sequence of learning for preservice teachers that supported them to better understand the assets of their communities and students while teaching mathematics, and discuss ways to better promote asset based pedagogies across programs and contexts.

Session 132 AMTE Committee Sessions	Salon 23	Session 133 Mathematics Education Policy and Program Discussion Session	Salon 24 Issues
Discussions of How to Design, Teach, and A within Methods of Teaching Courses	lssess	Efforts to Increase the Number and Diversit Mathematics Teachers Across North Carolin	y of na
AMTE Professional Development Committee		Kayla C Chandler, East Carolina University	
Are you building or rethinking your mathematics course? This session will provide a review of to	s methods pics	Maureen Grady [*] , <i>East Carolina University</i> Cyndi Edgington, <i>North Carolina State Universi</i> Erica Slate, <i>Appalachian State University</i>	ity

presented at the November virtual institute related to mathematics methods course design (curriculum, pedagogy, technology, and assessment), followed by small group discussions.

In this session, we will share our group's work and have discussions. The goal of the session is to engage in conversation about how mathematics education programs are addressing the recruitment and retention of diverse teacher candidates across our nation.

Ginger Rhodes*, University of North Carolina Wilmington

FRIDAY, FEBRUARY 9, 2024

3:30 PM - 4:00 PM

AMIE

AFTERNOON BREAK

JUNIOR BALLROOM FOYER

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

Visit http://bit.ly/AMTEMenuInfo24 or scan the QR code for more information about menu items.


FRIDAY, FEBRUARY 9, 2024

Session 134 Salon 11 Practice-Based Experiences for Prospective Teachers Individual Session

Feeding Forward from Simulations: What Preservice Teachers' Take from Feedback

Meghan Shaughnessy, *Boston University* Brit Claiborne, *Boston University* Ada Okun*, *Boston University* Timothy Boerst, *University of Michigan* Nicole Garcia, *University of Michigan*

We focus on PSTs' learning through engagement in formative assessment of their teaching practice. TEs will leave with enhanced thinking about formative assessment in teacher education and how simulations might be used to support formative assessment.

Session 135	Salon 13
Professional Development	
Discussion Session	

Past, Present, and Future of Mathematics Specialist Research Agenda

Stefanie D. Livers, *Bowling Green State University* Kristin E. Harbour, *University of South Carolina* Margret Hjalmarson*, *National Science Foundation* Courtney Baker, *George Mason University* Katherine Comey Edwards*, *George Mason University*

This discussion session will synthesize mathematics specialist research to develop an understanding of the methodological considerations. Our goal is to leverage our findings to raise questions and engage in discussion around methodological decisions and the dissemination of existing research. Session 136 Salon 14 Development of Mathematics Teacher Educators Individual Session

Professional Development of Mathematics Teacher Educators: Insights from Research

Nirmala Naresh, *University of North Texas* Kanita DuCloux, *Western Kentucky University* Laurie Cavey, *Boise State University* Lee Roberson*, *Colorado State University* Theresa M Hopkins*, *University of Tennessee*

Have you considered the various models used in mathematics teacher educator professional development? In this session, we will briefly share findings from our literature review of the related research and invite participants to reflect with us about the significance and implications.

Session 137 Collaborations and Partnerships Discussion Session

Salon 15

...AND Inclusion: What Are We Doing To Prepare Our Teachers?

Rachel A Harrington, *Western Oregon University* Steve Rhine, *Pacific University* Cristy Sellers*, *Pacific University* Shannon O. Driskell, *University of Dayton*

Join us to discuss the ways that the fields of Special Education and General Mathematics Education can work together to prepare teachers to facilitate the rightful presence (inclusion) of all learners in opportunities to learn rich mathematics.

Session 138 Professional Development Individual Session

Salon 16

Teacher Learning about Disability in Mathematics, Statistics, and Mathematics Education Classrooms

Jennifer L Green, *Michigan State University* Kathryn R. Westby, *Michigan State University*

We will discuss a professional development about inclusion and antideficit, antiableist teaching for mathematics, statistics, and mathematics education doctoral student teaching assistants, offering strategies for inter-program collaboration and developing anti-deficit and anti-ableist approaches to mathematics teacher and teacher educator development.

4:00 рм - 5:00 рм

Session 139 Teaching and Learning with Technology Individual Session

Data Storytelling in a K-8 Preservice Mathematics Methods Course

Emily Elrod, *Elon University* Heather Allmond Barker, Elon University

Data stories created by K-8 preservice teachers using Common Online Data Analysis Platform, will be shared. Findings from analysis highlight preservice teachers' abilities to develop data stories for student data explorations. Participants will create data stories to use with preservice teachers.

Session 140 Mathematics Content and Curriculum **Individual Session**

Salon 18

Salon 17

Supporting Progress in Preservice Elementary Teachers' Geometric Discourse

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

We present findings from a teaching experiment with elementary preservice teachers focused on hierarchical geometric relationships. In contrast with perspectives in the literature, we conceptualize this learning process in terms of discursive change, using the commognitive theoretical framework.

Session 141 Salon 19 Mathematics Education Policy and Program Issues **Discussion Session**

Elementary Mathematics Specialists Policy, Preparation, and Practice: Advocacy, Development, Impact, and Needed Support

Nicole René Rigelman, Portland State University | The Math Learning Center Francis (Skip) Fennell, McDaniel College Susan Swars Auslander, The University of Alabama

Discuss the policies influencing the preparation and practice of elementary mathematics specialists (EMSs) along with the necessary advocacy and support for their impactful use. The 2022 joint position and newly drafted AMTE EMS standards will guide this interactive session.

Session 142 Salon 20 Practice-Based Experiences for Prospective Teachers Individual Session

"Things Didn't Go Exactly as We Planned": Learning to Teach Responsively in a Math-Methods Course

Michael Jarry-Shore, North Carolina State University

Responsive teaching is demanding, especially for those new to the profession. Little work, however, has systematically examined the challenges prospective teachers encounter in teaching responsively. In this session, attendees will examine such challenges while viewing video of prospective teachers' rehearsals.

Session 143

Salon 21

Mathematics Content and Curriculum Individual Session

The Challenges of Implementing the Mathematical Practices: Identifying Approaches to Support Preand Inservice Teachers

Heidi L. Aforismo. University of Connecticut Keshia S. Hogan, University of Connecticut Tutita M. Casa, University of Connecticut

This session will focus on how mathematics teacher educators can support elementary teachers to incorporate mathematical practices. Attendees will identify practical strategies to use during university courses and professional development and help teachers implement these practices when using curriculum resources.

Session 144 Equity, Social Justice, and Mathematics Education	Salon 22 Teacher	Session 145 AMTE Committee Sessions	Salon 23
Mathematics and Identity: Lived Experie Black Woman Prospective Teacher	nces of a	Looking Back to Move Forward: Examin AMTE Presentations on Equity	ing Past
Chandel Burgess, University of Texas at Au Amy Rae Johnson*, The University of Texas Carlos Nicolas Gómez Marchant*, The Univ Texas at Austin Alexandra Aguilar*, University of Texas at A Gerardo Sanchez Gutierrez*, University of	stin s at Austin versity of ustin Texas at	AMTE Equity Committee The Equity Committee will present an analy equity-related presentations from prior AM Conferences. The goal is to shed light on a research that have been presented at past to plan for areas of future research and col	vsis of FE reas of conferences laborations.
Austin Mona Baniahmadi*, University of Texas at A This presentation will opgage mathematics	Austin	Session 146 Mathematics Content and Curriculum	Salon 24

This presentation will engage mathematics teacher educators in exploring their identity. Attendees will hear a Black woman prospective teacher's story about how her experiences influenced her to become a teacher and engage in an activity about their own lived experiences.

Individual Session

Mindfulness for Addressing Math Anxiety in Mathematics Courses for Preservice Elementary and Middle School Teachers

Rachael M Welder, University of Nevada, Reno Joe Champion, Boise State University Megan Burton, Auburn University

We will report initial findings from the implementation of a Mindfulness-Based Intervention (MBI) in mathematics courses for K-8 PTs in an effort to mitigate the effects of stress and anxiety on PTs as learners of mathematics for teaching.

FRIDAY, FEBRUARY 9, 2024

M

5:15 PM - 6:45 PM

JUDITH E. JACOBS LECTURE

JUNIOR BALLROOM F & G

Navigating Oz: My Journey with Three Essential Companions

Dorothy Y. White, University of Georgia

Using The Wiz, I share my road to becoming a justice-oriented mathematics teacher educator, the triumphs and challenges, and the importance of intellect, compassion, and courage. I end with paths for the field to reimagine a more humanizing mathematics education.



SATURDAY, FEBRUARY 10, 2024

7:00 AM - 8:15 AM



OVERVIEW OF SATURDAY, FEBRUARY 10, 2024

	8:30 AM – 9:30 AM	9:45 AM - 10:30 AM	10:45 AM - 11:30 AM
Junior Ballroom F	148. Leveraging Practiced Based Experiences to Meet the Needs of Beginning Teachers - Kirwan, Ko, Barker* & Winsor*	164. Mathematics Pedagogy	179. Forging Equitable Bidirectional Partnerships to Transform Secondary Mathematics Education - Strutchens, Qazi*, Martin, Lawler, Clarke, Warner*, Epps & Anthony
Junior Ballroom G	149. Recruiting, Retaining Teachers, and Diversifying the Teacher Pipeline in the Current Climate - Galindo	<i>165. Development of Mathematics Teacher Educators</i>	180. Equity, Social Justice, and Mathematics Teacher Education
Salon 11	150. How Professional Development Influenced Mathematics Teachers' Views of Mistakes - Watson, Barlow, Barlow, Duncan*, Gerstenschlager*, Strayer* & Willingham	166. Collaborations and Partnerships	181. Introducing Prospective Teachers to Children's Mathematical Thinking via Elementary and Middle School Family Math Nights - Siegfried
Salon 12	151. Worthwhile Problems: Viewing Contextual Algebra Tasks Through the Eyes of Secondary Teachers - Patterson & Acevedo	167. Equity, Social Justice, and Mathematics Teacher Education	182. To What do Elementary Preservice Teachers Attend while Implementing Number Talks in a Field Placement? - Raymond & Campbell
Salon 13	152. Promoting Visions of High Quality Mathematics Instruction with Beginning Teachers through Self Reflection - Brown	168. Creating Opportunities for Negotiating Mathematical Authority with Students in Group Work - Underwood & Smith	183. Professional Development for Statistics and Data Science: Models for Collaboration with States - Bargagliotti, LaLonde* & Franklin
Salon 14	153. Facilitating Content Focused Coaching Cycles: A Comprehensive and Coherent Framework to Support Intentional Coaching - Gillespie, Kruger & Callard	169. Math Pals: Using Technology to Connect Mathematical Discourse and Feedback - Gearing	184. Reimagining Teacher Induction Mentorship in Alternative Certification: Mutual Learning Opportunities to Expand Pedagogical Practice - Keazer & Pelter*
Salon 15	154. Supporting Students with Individualized Education Plans in Inclusive Mathematics Classrooms - Forbringer	170. Advanced Perspectives of High School Mathematics – Lessons from Year 1 - Ilaria & Hummer	185. K-8 Preservice Mathematics Teachers Writing to Learn - Eisenreich, Disney & Nguyen
Salon 16	155. Engaging In Math to Make Sense of One's Identity - Thanheiser	171. Data Science Curriculum for Preservice Secondary Mathematics Teachers - Gallivan, Weber, Butters* & Tucker*	186. Democratizing Access to High Quality, Mathematics Focused Professional Development Through an Asynchronous, Online Platform - Knotts
Salon 17	156. Building a Teacher Pipeline: Collaborating on High School Recruitment Practices - Dyess & Lee	172. Preparing Preservice Elementary Teachers for Inclusive Mathematics Classrooms - Thompson	187. Preservice Elementary Teachers' Geometric Reasoning with Static and Dynamic Diagrams - Nirode
Salon 18	157. Why before What: Using Street Data to understand Principles to Actions - Anderson & Lai		188. Mathematics Content and Curriculum
Salon 19	158. How Prospective Elementary Teachers Evaluate Students' Written Work - Corven	173. Mathematical Authority in Classrooms: Teachers' Beliefs and Tensions Faced When Positioning Students as Mathematical Authorities - Hamilton	189. Mathematics Pedagogy

	8:30 AM – 9:30 AM	9:45 AM - 10:30 AM	10:45 AM - 11:30 AM
Salon 20	159. Supporting Video Club Facilitators to Take an Anti-Deficit Lens - Walton & Turner	174. Reimagining Secondary Mathematics Methods and Practicum Courses: Coordinated Practice Based Experiences through Immersive Learning - Gatza & Hancock	190. Bridging Theory and Practice: Intersecting Standards for Mathematical Practice and Equitable Mathematics Teaching Practices - Wrightsman & Ellis
Salon 21	160. Are the Fraction Waters Being Inadvertently "Muddied" for Our Students - Sullivan & Barnett*	175. Go Beyond Reporting Strategies in Number Talks! Comparing Strategies Is An Answer But How? - Pak	191. Teacher Candidates' Use of Tools to Support Mathematical Discussions - Bacak & Colonnese
Salon 22	161. Early Career Mathematics and Science Teachers Paths Toward Equitable Teaching Practices - Kulp	176. Practice-Based Experiences for Prospective Teachers during a Mediated Field Experience - Colonnese & Imoberstag	192. Developing Underrepresented Prospective Teachers' Pedagogical Content Knowledge for Teaching Diverse Students in High-Needs Schools - Lu
Salon 23	<i>162. Lesson Planning is Hard:</i> <i>Different Types of Lessons, Different</i> <i>Types of Lesson Plans</i> - Edenfield & Menke	177. Mathematics Content and Curriculum	193. Teaching and Learning with Technology
Salon 24	163. Mathematics Teacher Educators Learning to Promote Building Thinking Classrooms Thin Slicing - Frazee, Cardetti, Cavanna & Staples	178. Professional Development	194. Practice-Based Experiences for Prospective Teachers

SATURDAY, FEBRUARY 10, 2024

Session 148 Junior Ballroom F Practice-Based Experiences for Prospective Teachers Symposium

Leveraging Practiced Based Experiences to Meet the Needs of Beginning Teachers

J Vince Kirwan, *Kennesaw State University* Yi-Yin (Winnie) Ko, *Indiana State University* David Barker*, *Illinois State University* Matthew Winsor*, *Illinois State University*

In this symposium, we share the influence of mathematics teaching practice on the perspectives and knowledge held by preservice and beginning in-service teachers. We also discuss how this might be more purposefully incorporated into mathematics teacher preparation coursework.

Session 149 AMTE President Exchange

Recruiting, Retaining Teachers, and Diversifying the Teacher Pipeline in the Current Climate

Junior Ballroom G

Enrique Galindo, Association of Mathematics Teacher Educators

George Hurlburt, American Mathematical Association of Two-Year Colleges

Latrenda Knighten, National Council of Teachers of Mathematics

Margaret Mohr-Schroeder, School Science and Mathematics Association

This presidential panel will explore the challenges faced throughout the US recruiting, retaining teachers, and diversifying the teacher pipeline, as well as possible strategies to address these problems. Organizational presidents from AMATYC, NCTM, and SSMA, will lead the panel. Session 150 Professional Development Individual Session

How Professional Development Influenced Mathematics Teachers' Views of Mistakes

Lucy Watson, *Belmont University* Angela T. Barlow, *University of South Alabama* Elizabeth Barlow, *Auburn University* Matthew Duncan*, *Middle Tennessee State University* Natasha Gerstenschlager*, *Imagine Learning* Jeremy Strayer*, *Middle Tennessee State University* James Willingham, *James Madison University*

Attending to mistakes to support learning has not been a common occurrence in classrooms. We engaged K-8 teachers in activities that focused on expecting, respecting, and inspecting mistakes. We will share these activities along with their influence on teachers' views.

Session 151 Mathematics Content and Curriculum Individual Session

Worthwhile Problems: Viewing Contextual Algebra Tasks Through the Eyes of Secondary Teachers

Cody Patterson, *Texas State University* Carlos Ivan Acevedo, *Texas State University*

We share an activity in which inservice teachers review contextual algebra tasks and evaluate their suitability for classroom use. We will discuss what we have learned about the values and professional commitments that shape teachers' evaluations of contextual problems.

Session 152 Professional Development Individual Session

Salon 13

Promoting Visions of High Quality Mathematics Instruction with Beginning Teachers through Self Reflection

Amber N Brown, Purdue University

Learn about a recent longitudinal collective case study on the evolution of beginning teachers' instructional visions to teach elementary mathematics. Engage in discussion and practice using a self-reflection tool designed to help beginning teachers develop visions of high quality mathematics instruction.

8:30 ам - 9:30 ам

Salon 11

Session 153 Salon 14 Development of Mathematics Teacher Educators Individual Session

Facilitating Content Focused Coaching Cycles: A Comprehensive and Coherent Framework to Support Intentional Coaching

Ryan Gillespie, *University of Idaho* Jennifer S Kruger, *University of Rochester* Cynthia Callard, *University of Rochester*

In this session, we will share a comprehensive content-focused coaching cycle framework. We designed the framework to support mathematics coaches learning to facilitate all three parts of a coaching cycle (planning, co-teaching, and debriefing) with intentionality and coherence.

Session 154 Salon 15 Equity, Social Justice, and Mathematics Teacher Education Individual Session

Supporting Students with Individualized Education Plans in Inclusive Mathematics Classrooms

Linda L Forbringer, *Southern Illinois University, Edwardsville*

Mathematics teacher educators must prepare teachers to meet the needs of all students in their classrooms, including those with disabilities. This presentation will share simple research based practices that increase accessibility for students who require special education support.

Session 155 Salon 16 Equity, Social Justice, and Mathematics Teacher Education Individual Session

Engaging In Math to Make Sense of One's Identity

Eva Thanheiser, Portland State University

In this session I share a personal example of engaging in mathematics to make sense of one's identity followed by audience engagement in making sense of their identity and discussion on how to bring this into our classes.

Session 156 Collaborations and Partnerships Discussion Session

Building a Teacher Pipeline: Collaborating on High School Recruitment Practices

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

Participants reflect on best practices to recruit high school students into the teaching profession, and discuss their own recruitment efforts with others. We share a student-facing Get the Facts Out presentation and lessons learned from presenting to high school students.

Session 157 Mathematics Pedagogy Discussion Session

Salon 18

Salon 19

Why before What: Using Street Data to understand Principles to Actions

Frances Anderson, *University of Nebraska at Omaha* Yvonne Lai, *University of Nebraska-Lincoln*

We share how to structure readings from Street Data so as to crosswalk the ideas with teaching practices in Principles to Actions. Participants engage with preservice secondary mathematics teachers' reflections on the connections between Street Data and Principles to Actions.

Session 158 Mathematics Pedagogy Individual Session

How Prospective Elementary Teachers Evaluate Students' Written Work

Julien Corven, Illinois State University

I report results of a research study investigating the criteria elementary prospective teachers used to evaluate students' written solutions to a division story problem. I also share a framework that can be used to help prospective teachers evaluate student work.

Session 159 Salon 20 Development of Mathematics Teacher Educators Discussion Session

Supporting Video Club Facilitators to Take an Anti-Deficit Lens

Margaret Walton, *University of Maryland* Blake O'Neal Turner, *Marquette University*

We will lead a discussion about supporting video club facilitators to learn about anti-deficit noticing so that they can teach teachers to notice in more equitable ways.

Session 160 Mathematics Content and Curriculum Individual Session

Salon 21

Are the Fraction Waters Being Inadvertently "Muddied" for Our Students

Patrick Lane Sullivan, *Missouri State University* Joann Barnett*, *Missouri State University*

The challenges 3rd grade through university-level students face with fractions is often rooted in dominant part-whole conceptions. In this session we will explore why this is problematic and instructional recommendations to minimize the potential of these conceptions becoming dominant.

Session 161 Salon 22 Equity, Social Justice, and Mathematics Teacher Education Discussion Session

Early Career Mathematics and Science Teachers Paths Toward Equitable Teaching Practices

Kelly Kulp, University of Georgia

This session focuses on the equitable and inclusive teaching practices of three early career teachers in diverse schools. Participants can expect to discuss preservice program changes and inservice development to guide teachers through inclusive teaching to equitable teaching. Session 162 Mathematics Pedagogy Individual Session

Lesson Planning is Hard: Different Types of Lessons, Different Types of Lesson Plans

Kelly Edenfield, *University of Georgia* Jenna Menke, *Ball State University*

Despite an emphasis on high-cognitive demand task lesson plans, teacher educators must also prepare preservice teachers to plan lessons that develop procedural skills, use technology, and use manipulatives. We present and discuss a lesson plan portfolio designed for this purpose.

Session 163 Mathematics Content and Curriculum Individual Session

Mathematics Teacher Educators Learning to Promote Building Thinking Classrooms Thin Slicing

Leah M Frazee, *Central Connecticut State University* Fabiana Cardetti, *University of Connecticut* Jillian M. Cavanna, *University of Hartford* Megan Staples, *University of Connecticut*

Participants will analyze teacher-generated thin-sliced tasks and learn about our lessons learned for supporting teachers' design of such tasks using variation theory. Participants will then engage in a generative discussion for improving content and methods courses to better support teachers.

SATURDAY, FEBRUARY 10, 2024

Session 164 Mathematics Pedagogy Report Session

Junior Ballroom F

Elementary Preservice Teachers' Assessment of and Instructional Decisions for Mathematical Writing

Erin Smith, *University of Nevada, Las Vegas* Alex Smith, *University of Nevada, Las Vegas*

Mathematical writing plays a critical role in advancing students' learning. Yet, little is known about teachers' mathematical writing instruction. In our presentation, we share findings of preservice teachers' evaluations of students' mathematical writing and related instructional decisions.

Preservice Teachers Assessment of a Task: Stances and Misconceptions

Valerie N Long, *Indiana University of Pennsylvania* Kate Meredith Raymond, *University of Oklahoma*

Participants in this session will analyze the findings of research regarding how pre-service elementary teachers approached assessing the quality of a 2nd grade place value mathematics task and the misconceptions uncovered in their justifications.

How do Non-Traditional Grading Practices Promote Student Learning? Perspectives from Two Mathematics Teacher Educators

Montana Smithey, Georgia Southern University Shelli L Casler-Failing, Georgia Southern University

This session shares the experiences of two mathematics teacher educators as they embedded non-traditional grading practices (focused on feedback, not grades) into their "traditionally-graded" methods courses. Attendees will be provided strategies for implementing feedback-focused grading practices into their courses. Session 165 Junior Ballroom G Development of Mathematics Teacher Educators Report Session

Understanding Mathematics Coaches' Engagement with Equity While Doing the Math

Evthokia Stephanie Saclarides, *University of Cincinnati* Juan Manuel Gerardo, *University of Cincinnati*

This presentation explores mathematics coaches' opportunities to engage with equity while doing the math during their own district-sponsored professional development. Implications for mathematics coaches and administrators will be discussed.

Using Clinical Interviews to Foster Teacher Leaders' Understanding of Students' Mathematical Thinking

Nicora Placa, Hunter College

This session describes how student interviews were used as a tool to develop teacher leaders' knowledge so they in turn can support teachers. Findings will be discussed and implications for how to support teacher educators will be highlighted.

Coaches' Experiences Learning to Engage in In-the-Moment Coaching

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

This report shares findings from a study examining coaches' experiences transitioning from observational models of coaching to an in the moment coaching model. This report will be of relevance to MTEs interested in learning about or implementing in the moment coaching.

9:45 ам - 10:30 ам

Session 166 Collaborations and Partnerships Report Session

Insights from a Systematic Literature Review of Partnership in Mathematics Education; Implications for Mathematics Teacher Educators

Salon 11

Trena L. Wilkerson, *Baylor University* Megan Che, *Clemson University* Colleen McLean Eddy, *University of North Texas* Lianne Jones, *Baylor University* Karen Enderle, *Clemson University*

We share our tentative and emergent findings from a systematic literature review of partnership processes in mathematics education research. Guiding questions for the study, literature review protocol and process, and findings will be shared along with implications for MTEs.

A University District Partnership: Exploring Teachers' Perceptions of Quality Mathematics Instruction and Students' Mathematics Capabilities

Mollie Appelgate, *Iowa State University* Isaac Rodenberg, *Des Moines Public Schools*

We report how teachers implementing a high-quality curriculum with contrasting levels of student centered, equity focused instruction differ in their views of quality math instruction and student capabilities. District curriculum staff share implications for supporting inservice teachers.

Data Explorers: A Collaborative Effort to Broaden Participation in Mathematical Modeling and Modeling Challenges

Ruby Ellis, North Carolina State University Taryn Shelton*, North Carolina State University Jerome Amedu, North Carolina State University

We will discuss three organizations' collaborative efforts to provide teachers in rural districts, whose primary student population consists of historically marginalized and underrepresented students, with professional development and support to engage students in data science and mathematical modeling activities.

Session 167 Salon 12 Equity, Social Justice, and Mathematics Teacher Education Report Session

Acknowledging Deficit Narratives and Secondary Mathematics Teachers' Racialized Beliefs

Tia C Madkins, *University of Texas at Austin* Yasmiyn Irizarry, *University of Texas at Austin* Chandel Burgess, *University of Texas at Austin* Allyson Taylor Cameron*, *Duke University*

Educators must acknowledge, confront, and reject deficit thinking about minoritized learners and communities. We illuminate teachers' deficit narratives and highlight inclusive teaching practices used with minoritized learners to gain a better understanding on how to create transformative mathematics learning environments.

White Teachers' Caring in Racially Diverse Mathematics Classes

Drew Nucci, University of Washington

This session provides MTEs with insight into how white teachers can productively grapple with whiteness and learn about the experiences of students of color in schools to develop pedagogically supportive caring relations in racially diverse mathematics classes.

Intent Versus Impact: Teacher Influence on Mathematics Identities of Black Girls

Kyalamboka Brown, Stanford University

This study examines the ways in which high school mathematics teachers shape mathematics identities of Black girls. Findings suggest that positive intent of teacher practices is not a precursor of positive teacher impact on mathematics identities.

Session 168	Salon 13
Equity, Social Justice, and Mathematics	Teacher
Education	
Individual Session	

Creating Opportunities for Negotiating Mathematical Authority with Students in Group Work

Karen Underwood, Vanderbilt University Jessica Lynn Smith, Vanderbilt University

This presentation discusses research on collaborative group work in mathematics classrooms. Maximizing opportunities for students to have equitable intellectual authority within group work necessitates an indepth look into teacher group dynamics that have gone under researched.

Session 169 Salon 14 Teaching and Learning with Technology Individual Session

Math Pals: Using Technology to Connect Mathematical Discourse and Feedback

Nicole Venuto Gearing, Utah Valley University

Math Pals blends elementary students' mathematical responses from math tasks with authentic opportunities for preservice teachers to analyze those responses and provide feedback through the use of whiteboard technology creating a novel system that benefits all learners.

Session 170 Mathematics Content and Curriculum Individual Session

Advanced Perspectives of High School Mathematics – Lessons from Year 1

Daniel Ilaria, West Chester University Jenifer Hummer, West Chester University

This session is an interactive discussion about our new BSED program content-pedagogy courses based on the MET II report using Mathematical Understanding for Secondary Teaching, ULTRA, and MODULE(S2) materials and principles. We will share student work from our first implementation.

Session 171 Mathematics Content and Curriculum Individual Session

Data Science Curriculum for Preservice Secondary Mathematics Teachers

Heather Gallivan, *University of Northern Iowa* Eric Weber, *Iowa State University* Lydia Butters*, *University of Northern Iowa* Meredith Tucker*, *Iowa State University*

Data science curriculum materials for secondary preservice teachers were developed and piloted. Results suggest that preservice teachers have an emerging understanding of data science concepts, including the ability to analyze high school students' thinking of data science tasks.

Session 172 Collaborations and Partnerships Individual Session

Salon 17

Preparing Preservice Elementary Teachers for Inclusive Mathematics Classrooms

Jen Thompson, Ohio University

This research examines how elementary and special education preservice teachers collaboratively adapted mathematics lessons for students receiving services and supports in the general education classroom. Participants will engage in this work and discuss implementation strategies in teacher education programs.

Session 173 Mathematics Pedagogy Individual Session

Salon 15

Salon 19

Mathematical Authority in Classrooms: Teachers' Beliefs and Tensions Faced When Positioning Students as Mathematical Authorities

Michael Hamilton, College of Charleston

I report four teachers' beliefs about students and teachers as mathematical authorities and tensions they faced when attempting to position students as mathematical authorities. Attendees will examine specific tensions and complexities and discuss how to support teachers experiencing similar tensions.

Session 174 Salon 20 Practice-Based Experiences for Prospective Teachers Individual Session

Reimagining Secondary Mathematics Methods and Practicum Courses: Coordinated Practice Based Experiences through Immersive Learning

Andrew Gatza, Ball State University Cresta Hancock, Ball State University

Presenters will report on the first two semester-long iterations of an immersive learning partnership project to create coordinated practice-based experiences in middle school mathematics methods and practicum/field courses for prospective middle/secondary mathematics teachers. Discussion on opportunities and challenges will follow.

Session 175	Salon 21
Mathematics Pedagogy	
Individual Session	

Go Beyond Reporting Strategies in Number Talks! Comparing Strategies Is An Answer But How?

Byungeun Pak, Utah Tech University

Number talks can engage students in each other's ideas by comparing different strategies. Supporting students to compare is challening for prospective teachers. We will discuss how 15 prospective teachers support students in comparing different strategies on their enacted number talks.

Session 176 Collaborations and Partnerships Individual Session

Salon 22

Practice-Based Experiences for Prospective Teachers during a Mediated Field Experience

Madelyn Colonnese, University of North Carolina at Charlotte

Naomi Rose Imoberstag, *The University of North Carolina at Charlotte*

Mediated field experiences can help bridge the gap between university based coursework and clinical experiences. A teacher educator and mathematics coach will describe how we structured a practice based teaching experience during our mediated field experience and the benefits and challenges.

Session 177 Mathematics Content and Curriculum

Mathematics Content and Curriculum Report Session Shifting Perceptions of Mathematics and

Shifting Perceptions of Mathematics and Mathematicians via Quanta Magazine Readings

Dana Grosser-Clarkson, University of Maryland

We share data from two cohorts that shows reading current Quanta Magazine articles expanded our students' notion of mathematics and who is seen as a mathematician.

Writing in a College Mathematics Course. Prospective Elementary School Teachers' Experiences.

Marta T Magiera, Marquette University

This session describes a mathematics course in which prospective teachers experience writing as mathematics students. We discuss how they communicate their reasoning in writing, how writing affected their problem-solving processes, and shaped their attitudes towards writing in mathematics.

Preservice Teachers' Productive Struggle Stories

Nicole Wessman-Enzinger, George Fox University

In this report, I will share a productive struggle stories project for elementary preservice teachers in a mathematics content course. The preservice teachers reflected on their own productive struggle and crafted stories of their productive struggle. Session 178 Professional Development Report Session

Salon 24

Professional Development

Conceptualization and Analysis of What and How Coaches Notice

Julie Amador, University of Idaho Adam J Hanan*, University of Idaho Jeffrey Choppin, University of Rochester

We share results about What and How coaches with varied experiences noticed as they analyzed vignettes of coaching interactions between a coach and a teacher. We provide a framework for considering the conceptualization of coach noticing.

Mathematics Teachers' Perceived Utility of Ambitious Practice for their Instruction and Persistence in Professional Development

Anthony Matranga, *California State University, San Marcos*

Jason Silverman, Drexel University

We examined mathematics teacher discussion of the utility of our professional development for their classroom practice. Teachers who recognized the utility were more likely to persist in our professional development. Situational interest and alignments with practice may explain this relationship.

Longitudinal Study of Elementary Mathematics Specialist Preparation and Support in Urban School Contexts

Susan Swars Auslander, *The University of Alabama* Carla Lynn Tanguay, *Georgia State University* Karie Christine Brown, *Georgia State University* Debra Smith Fuentes, *Georgia State University*

Research findings across two years illuminate the extent that an elementary mathematics specialist preparation program influenced participants' practices, knowledge, and beliefs. Elementary mathematics specialists are being prepared and supported as ambitious and equitable mathematics teachers and leaders in urban schools.

SATURDAY, FEBRUARY 10, 2024

Session 179 Junior Ballroom F Equity, Social Justice, and Mathematics Teacher Education (MTEP Session) Symposium

Forging Equitable Bidirectional Partnerships to Transform Secondary Mathematics Education

Marilyn Elaine Strutchens, Auburn University Mohammed A Qazi^{*}, Tuskegee University W Gary Martin, Auburn University Brian R Lawler, Kennesaw State University Tonya Clarke, Clayton County Public Schools Sean Warner^{*}, Clark Atlanta University Valerie Epps, Tennessee State University Holly Anthony, Tennessee Technological University

Creating equitable bidirectional relationships between Predominantly White Institutions and Historically Black Colleges and Universities for transforming secondary mathematics education will be discussed. Some partnerships have longterm relationships and others have just begun. Advantages and challenges will be addressed.

Session 180 Junior Ballroom G Equity, Social Justice, and Mathematics Teacher Education

Report Session

What is Involved in Centering Listening in the Teaching of Elementary Mathematics?

Karin E Brown, University of Michigan-Ann Arbor

To better understand listening in teaching, I analyzed elementary mathematics lessons, focusing on how teachers elevated Black children's thinking and supported students to listen to one another. Findings indicate that centering listening includes orienting students to one another and more.

Generative Contradictions in Doing Antibias Math Teaching and Leading with K12 Teacher Leaders

Joan Hong, University of Maryland-College Park Rebekah Elliott, Oregon State University Kathryn E. Roman, Portland State University Adam Eide*, Oregon State University

Our presentation aims to share insights on the contradictions that emerge as mathematics teacher leaders jointly participate in an activity system of this professional development project and another activity system of the schools in which they teach.

Graphing Names Task: A Window, Mirror, and Sliding Glass Door for Students and Mathematics Teacher Educators

Simon Byeonguk Han, Portland State University Amanda T Sugimoto*, Portland State University Courtney Koestler, Ohio University Mathew D. Felton-Koestler*, Ohio University Molly L Robinson*, Portland State University Jen Thompson, Ohio University Laura Lynn Wolfe*, Ohio University

Participants will learn about a name graphing task containing both mathematical and social justice goals. We will share how the task served as a window and mirror for students as a sliding glass door for mathematics teacher educators.

Session 181 Salon 11 Practice-Based Experiences for Prospective Teachers Individual Session

Introducing Prospective Teachers to Children's Mathematical Thinking via Elementary and Middle School Family Math Nights

John (Zig) Siegfried, James Madison University

We consider the mathematical interactions prospective teachers have when they host Family Math Nights at local schools. We discuss appropriate games, information about how we run our nights, and ways to connect their experiences to the content in their classes.

Session 182 Salon 12 Practice-Based Experiences for Prospective Teachers Individual Session

To What do Elementary Preservice Teachers Attend while Implementing Number Talks in a Field Placement?

Kate Meredith Raymond, *University of Oklahoma* Tonya Campbell, *University of Oklahoma*

The potential benefits of engaging preservice elementary teachers in implementing number talks during a field placement will be explored by examining the mathematical teaching practices preservice teachers engaged in and reflected on during their experiences in enacting three number talks.

10:45 ам - 11:30 ам

Session 183 Professional Development Individual Session

Professional Development for Statistics and Data Science: Models for Collaboration with States

Anna Bargagliotti, *Loyola Marymount University* Donna LaLonde*, *American Statistical Association* Christine Annette Franklin, *American Statistical Association and University of Georgia*

Explore examples of collaboration with states to support teachers implementing statistics and data science standards. With the American Statistical Association, states have undergone rigorous processes for editing standards, implementing new standards, assessing new standards, and offering professional development for teachers.

Session 184 Mathematics Pedagogy Individual Session Salon 14

Salon 13

Reimagining Teacher Induction Mentorship in Alternative Certification: Mutual Learning Opportunities to Expand Pedagogical Practice

Lindsay Keazer, Sacred Heart University Brandon Pelter*, Sacred Heart University

A model for university-supported mentorship in alternative certification contexts created opportunities for mathematics teacher and teacher educator joint inquiry. Together they troubleshooted implementation of research-based practices for a thinking-centered classroom in an urban context where systemic issues complicate this work.

Session 185 Mathematics Pedagogy Individual Session

Salon 15

K-8 Preservice Mathematics Teachers Writing to Learn

Heidi Eisenreich, *Georgia Southern University* Andria Disney, *Utah Valley University* Ha Nguyen, *California State University, Dominguez Hills*

This session will explore how K-8 preservice teachers engage in writing tasks to deepen their knowledge of mathematical content and pedagogy.

Session 186 Professional Development Individual Session

Democratizing Access to High Quality, Mathematics Focused Professional Development Through an Asynchronous, Online Platform

Angela Knotts, WestEd

Mathematics teachers need and want effective, highquality professional learning, but schools face many barriers to providing it, especially in small or remote districts. We share an asynchronous, online platform designed to bring high-quality, cost-effective professional learning to a wider audience.

Session 187 Mathematics Content and Curriculum Individual Session

Preservice Elementary Teachers' Geometric Reasoning with Static and Dynamic Diagrams

Wayne Nirode, Miami University

This session shares results from research on how preservice elementary teachers reason within and between categories of two-dimensional shapes using both static and dynamic diagrams. Participants will discuss implications for facilitating the development of preservice elementary teachers' geometric reasoning.

Session 188 Mathematics Content and Curriculum Report Session

Extending the Authenticity of a Statistics Textbook

Margaret Borden, North Carolina State University Michelle Murphy Pace*, North Carolina State University

This report aims to shed light on the levels of authenticity that already exist in a commonly used Advanced Placement Statistics textbook. It also suggests ways to support mathematics teachers in increasing the levels of authenticity through supplemental materials.

Fostering a Graphical Conceptualization of Function Composition with a 3D Representational Tool

Nicholas Wasserman, Columbia University

Functions are an important part of mathematics; and function composition a primary operation. Yet, our conception of this operation is primarily algebraic, based on equations, $(g \circ f)(x)=g(f(x))$. This report explores representational possibilities to enrich PSTs' graphical conception of function composition.

Embracing Complexity: Tracing a Middle School Mathematics Teacher's Curriculum Assemblage

Hilary Tanck, High Point University

The mathematics classroom environment and curriculum resources have changed since the pandemic. This session forefronts assemblage theory to instigate moving questions around how mathematics curriculum is conceptualized. The session traces one middle school mathematics teacher's curriculum work during the pandemic.

Session 189 Mathematics Pedagogy Report Session

Salon 18

Supporting Students' Word Problem Solving using a Novel Attack Strategy

Luke Reinke, University of North Carolina at Charlotte Adrianne S Blackwelder*, The University of North Carolina at Charlotte

Laura Susan Copeland, *Charlotte-Mecklenburg Schools* Sequeria Lawler, *Charlotte-Mecklenburg Schools* Nikki Mackey*, *Charlotte-Mecklenburg Schools* Drew Polly*, *The University of North Carolina at Charlotte*

After introducing a word problem solving attack strategy called the Three R's (Retell, Represent, and Reason), we will share the outcomes of a project aimed at supporting teachers to implement the strategy during targeted small group interventions.

An Intervention Study on Preservice Teachers' Preparedness to Use Multiple Representations in Teaching Mathematics

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 the difficulties faced by preservice teachers when utilizing multiple representations in mathematics instruction and provides valuable insights into ways to enhance teacher preparation regarding multiple representations, thus ultimately improving the teaching and learning of mathematics.

Using Integrated STEM as a Context to Teach Mathematics

Babette Benken, *California State University, Long Beach* Cathrine Maiorca, *Oklahoma State University*

We share findings from a study that examined the effect of STEM modules in an elementary mathematics methods course on preservice teachers' dispositions. All participants felt more prepared and confident to integrate STEM disciplines and expressed enjoyment toward teaching STEM.

Session 190 Salon 20 Equity, Social Justice, and Mathematics Teacher Education Individual Session

Bridging Theory and Practice: Intersecting Standards for Mathematical Practice and Equitable Mathematics Teaching Practices

Elizabeth Wrightsman, *Texas State University* Brittney M Ellis, *Texas State University*

We will discuss our application of a framework linking equitable teaching practices and the Standards to a teacher's classroom instruction. We hope to bridge theory and practice by illustrating how practitioners might attend to equity while teaching by the Standards.

Session 191 Mathematics Pedagogy Individual Session

Salon 21

Teacher Candidates' Use of Tools to Support Mathematical Discussions

Julie Bacak, *University of North Carolina at Charlotte* Madelyn Colonnese, *University of North Carolina at Charlotte*

In this session, we share the findings and implications of a multiple case study that examined elementary teacher candidates' use of tools to plan and facilitate discussions in clinical classroom settings.

Session 192 Mathematics Content and Curriculum Individual Session

Salon 22

Developing Underrepresented Prospective Teachers' Pedagogical Content Knowledge for Teaching Diverse Students in High-Needs Schools

Yaomingxin Lu, California State University, Fresno

Set in the context of a Noyce-funded program, this presentation will address how prospective teachers can be concurrently supported in a rigorous mathematics program as they develop the deep pedagogical knowing so necessary for teaching students in high-needs settings.

Session 193 Teaching and Learning with Technology Report Session

Attack of the Ice Aliens: A Professional Development Lesson Using Computer Programming to Teach Generalization

Cynthia Stenger, University of North Alabama Mark Terwilliger, University of North Alabama Sherry A Truitt, Lexington High School Jessica E Stovall*, University of North Alabama Jay L. Jackson*, University of North Alabama Janet Truitt Jenkins*, University of North Alabama

Computer programming can be an effective tool for teaching and learning generalization. The Ice Alien lesson illustrates how teachers learn to implement the model in their classrooms by writing Python programs, collecting data, making conjectures, and forming convincing arguments.

Using Augmented and Virtual Reality Goggles in Geometry Teacher Education to Explore Geometric Relationships

Julianna Washington, Southern Methodist University Taylor Darwin*, Texas Tech University Candace Walkington*, Southern Methodist University

We discuss our research with teachers and inform on using Extended Reality (XR) in mathematics education, particularly teaching geometry. We emphasize the need for teacher training in utilizing XR technologies effectively to enhance student engagement and understanding of geometric concepts.

Learning to Teach with the TI-Innovator Rover in a Secondary Mathematics Methods Course

Shelli L Casler-Failing, Georgia Southern University

This session shares research conducted in a secondary mathematics methods course as preservice teachers experienced learning about, and with, the TI-Nspire calculator, TI-Innovator Hub, and TI-Innovator Rover and how the experience informed their technological pedagogical content knowledge.

Session 194 Salon 24 Practice-Based Experiences for Prospective Teachers Report Session

Practice-Based Experiences for Prospective Teachers

Using Simulations as Approximations to Build Equitable Mathematics Discourse Practices with Elementary Teacher Candidates

Casedy Ann Thomas, *University of Virginia* Katie Waddell, *University of Virginia*

This study examines how mixed-reality, simulated number talks can be used with elementary teacher candidates to build equitable practices that support mathematics discourse communities, and to understand how such approximations can impact teacher candidates' self-efficacy with responsive, standards-based mathematics teaching.

Student Teachers' Planned and Enacted Learning Goals

Rick Hudson, University of Southern Indiana Julie Amador, University of Idaho Meredith Park Rogers*, Indiana University Andrea Phillips*, Indiana University

"Establish mathematics goals to focus learning" is one of NCTM's (2014) mathematics teaching practices. This session reports on a study focused on how student teachers describe their planned and enacted learning goals. Implications for teacher education will be discussed.

Analyzing Practice-Based Experiences in Math Methods: How Do Prompts Relate to Teacher Candidates' Noticing?

Rosalie DeFino, University of Wisconsin - La Crosse

Following practice-based experiences, teacher candidates are often asked to reflect. How can reflective tasks be leveraged to maximize learning? This study explores this question by examining a group of teacher candidates' noticing at the level of specific analytic prompts.

SATURDAY, FEBRUARY 10, 2024

11:30 AM - 1:00 PM

A/M T E

NETWORKING LUNCH

EXECUTIVE BALLROOM H & I

Please join colleagues for lunch and collaboration.

Visit http://bit.ly/AMTEMenuInfo24 or scan the QR code for more information about menu items.



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