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2-2023

## K-8 Preservice Teachers' Numeracy (Number Sense) Knowledge.

Ha Nguyen

Tuyin An

L. Delgado

Gregory Chamblee

Eryn M. Maher

*See next page for additional authors*

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**Presenters/Authors**

Ha Nguyen, Tuyin An, L. Delgado, Gregory Chamblee, Eryn M. Maher, and Heidi Eisenreich

27th Annual



CONFERENCE



New Orleans  
Louisiana

February 2-4, 2023



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# WELCOME

Dear AMTE Friends,

Welcome to the Twenty-seventh Annual Conference of the Association of Mathematics Teacher Educators (AMTE) in New Orleans, LA at the Astor Crowne Plaza – French Quarter. This year we experienced new opportunities and growth as an organization. We worked to create a conference environment that reflects our community, mission and long-term goals. We hope you find community, including opportunities to listen, grow, share, laugh, and learn. Our conference app offers opportunities to connect and communicate with colleagues. We hope you will engage in live session chats, social media, and reach out either electronically or in person to speakers who you found engaging and thought provoking. Below are some things you can expect over the next few days:

## INVITED SPEAKERS

Our opening keynote address *Uniting to Advocate for Teachers and the Teaching Profession* takes place in the Thursday General Session at 8:15 am in the Grand Ballroom. Panel Members include:

- **Malcolm B. Butler**, University of North Carolina, Charlotte
- **Sara Demoiny**, Auburn University
- **Enrique Galindo**, Indiana University, Bloomington
- **Betina Hsieh**, California State University, Long Beach (virtual)
- **Luz Maldonado Rodriguez**, Texas State University, San Marcos

**Randy Philipp** gives the **Judith E. Jacobs Lecture** with a talk titled, *Grappling with the Tensions Between Building Foundations and Encouraging Change: What Does it Mean to Belong to X? (Where X might be an organization like AMTE, a particular department at a school or university, a particular research orientation or thought group, etc.)* on Friday afternoon at 5:15 pm in the Grand Ballroom.

**Dan Chazan**, recipient of the **AMTE Excellence in Scholarship Award**, will present a talk titled *Representations of Practice and Evolving Infrastructures to Support Their Use* on Friday morning at 9:30 am in the St. Louis room.

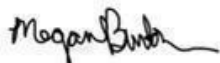
**Cathery Yeh**, recipient of the **2022 Early Career Award** will present a talk titled *Unsettling Norms, Dismantling Barriers, and Healing My Wounds: Recognizing and Disrupting White, Ableist Normativity in Mathematics Education* on Thursday afternoon at 1:15 pm in the St. Louis room.

## PROGRAM INFORMATION

There are 125 Individual Sessions, 42 Discussion Sessions, 78 Reports, 4 Extended Sessions, 11 Symposium Sessions, and 45 Poster Presentations on the program. There are 539 speakers on this year's program. There were 490 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 4 invited presentations, 2 award-winner sessions, 5 AMTE committee sessions, and 5 sessions presented by AMTE Sponsors.

## LISTENING AND LEARNING

AMTE continues to grow and to explore ways to be more inclusive and impactful. We offer opportunities throughout the year to connect in various ways. However, the conference is a wonderful opportunity, unlike any other, to connect face to face and create community. We would like to thank each of you for attending our conference and bringing your expertise, experiences, and energy. As AMTE members, you are the voice of the organization and can help us continue to support MTEs, MTs, and students.



Megan Burton, AMTE President



Julie James, AMTE AVP for Conferences



Shari Stockero, AMTE Executive Director



Jeremy Zelkowski, 2023 AMTE AVP for Annual Conference Program

# CONFERENCE SCHEDULE

2023 ANNUAL AMTE CONFERENCE  
FEBRUARY 2-4, 2023

## WEDNESDAY, FEBRUARY 1, 2023

4:30 pm - 7:30 pm AMTE Registration Desk Open  
8:00 pm - 9:00 pm **Reception for BIPOC Scholars**

## THURSDAY, FEBRUARY 2, 2023

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:** Uniting to Advocate for Teachers & the Teaching Profession  
10:15 am - 11:00 am Concurrent Sessions  
11:15 am - 12:00 pm Concurrent Sessions  
12:00 pm - 1:15 pm **Advocacy and Emerging Issues Lunch**  
1:15 pm - 2:15 pm Concurrent Sessions  
2:30 pm - 3:30 pm Concurrent Sessions  
3:30 pm - 4:30 pm **Break and Poster Session**  
4:30 pm - 5:45 pm Concurrent Sessions  
6:00 pm - 7:00 pm **Reception for Graduate Students & Early Career Faculty**

## FRIDAY, FEBRUARY 3, 2023

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  
8:15 am - 9:15 am Concurrent Sessions  
9:30 am - 10:30 am Concurrent Sessions  
10:45 am - 11:45 am Concurrent Sessions  
11:45 am - 1:15 pm **Lunch and Business Meeting**  
1:15 pm - 2:15 pm Concurrent Sessions  
2:30 pm - 3:30 pm Concurrent Sessions  
3:45 pm - 4:45 pm Concurrent Sessions  
4:45 pm - 5:15 pm Break  
5:15 pm - 6:45 pm **Judith E. Jacobs Lecture**

## SATURDAY, FEBRUARY 4, 2023

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  
8:15 am - 9:00 am Concurrent Sessions  
9:15 am - 10:15 am Concurrent Sessions  
10:30 am - 11:30 am Concurrent Sessions  
11:45 am - 12:30 pm Concurrent Sessions  
12:30 pm - 1:30 pm **Lunch:** Working Towards AMTE Long-Term Goals: A Discussion with AMTE Leadership

# CONFERENCE INFORMATION

## FINDING THE CONFERENCE AREA

Conference session rooms are located on the 1<sup>st</sup> Floor, 2<sup>nd</sup> Floor, and 2<sup>nd</sup> Floor Mezzanine. Meals will be held in Grand Ballrooms A - D on the 2<sup>nd</sup> Floor. For your convenience, a map of the hotel conference area is printed in the back of the program book. For other questions about hotel facilities, please contact the volunteers at the AMTE Registration Desk, the members of the Conferences Committee, or hotel staff.

## CONFERENCE REGISTRATION DESK

Please stop by the AMTE Registration Desk, located on the Grand Foyer on the 2<sup>nd</sup> Floor, to obtain your conference materials, including your nametag and the conference program, if you requested a print copy.

## 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 amte2023**, and then select Continue.
4. Open the Conference Guide.

If you are unable to access the conference Guidebook, please contact [amte-support@amte.net](mailto:amte-support@amte.net) for assistance. You can also access the web version of Guidebook at <https://guidebook.com/g/amte2023>

## CANCELLATIONS AND PROGRAM CHANGES

For updated lists of cancellations and other program changes, visit <https://amte.net/conferences/conf2023/updates> 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 Grand Foyer near the registration desk.

THURSDAY, FEBRUARY 2	10:00 AM – 5:00 PM
FRIDAY, FEBRUARY 3	8:30 AM – 5:00 PM

## WIRELESS INTERNET ACCESS

Conference attendees who are staying at the Astor Crowne Plaza receive complimentary internet access in individual guestrooms for the duration of the conference. Directions on how to access wireless and wired internet service can be found in each guestroom. Complimentary wireless internet access is provided in the conference/meeting area of the hotel for conference attendees and for AMTE usage throughout the conference. Using your laptop or mobile device, access the conference area **network - Crowne Plaza\_Meeting** and login using **Password – eln22** (case sensitive).



## HOTEL PARKING INFORMATION

Valet parking is available for standard vehicles at \$49 + tax per day. Parking for oversized vehicles is \$59 + tax per day. Self-Parking is offsite and not managed by the hotel.

## CONFERENCE PHOTOGRAPHS

Photographs are being taken 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 [executivedirector@amte.net](mailto:executivedirector@amte.net). Thank you to Bonnie Oppenheimer, Alice Steimle, and Kate Roscioli for volunteering as conference photographers.

## PERSONAL PROPERTY

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

## LOST AND FOUND

Please drop off any unclaimed found items at the AMTE Registration Desk. Or you can drop off items at the Manager-On-Duty desk located at the hotel front desk next to the bell stand. AMTE and the hotel are not responsible for items being left in the session rooms and in the conference area.

## COMMITTEE MEETINGS

AMTE Committees will meet during the conference according to the schedule provided to committee leaders. These meetings will take place in the Royal Boardroom (2<sup>nd</sup> Floor Mezzanine) or in the Executive Club Lounge (4<sup>th</sup> floor).

## AFFILIATE MEETINGS

AMTE Affiliates will meet during breakfast on Friday Morning in Grand Ballrooms C and D. 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 Astor Gallery. 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: Room 213, 2nd Floor Mezzanine
- Prayer & Meditation Room: Room 215, 2nd Floor Mezzanine

# SOCIAL MEDIA

LIKE AMTE ON FACEBOOK



[facebook.com/AMTE.net](https://facebook.com/AMTE.net)

FOLLOW AMTE ON TWITTER



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

USE **#AMTE2023** TO JOIN PUBLIC DISCUSSION AROUND THE CONFERENCE.

# AMTE 2022 BOARD OF DIRECTORS

<b>PRESIDENT</b> Megan Burton Auburn University Auburn, AL <a href="mailto:meb0042@auburn.edu">meb0042@auburn.edu</a>	<b>PRESIDENT ELECT</b> Enrique Galindo Indiana University Bloomington, IN <a href="mailto:egalindo@indiana.edu">egalindo@indiana.edu</a>	<b>SECRETARY</b> Cynthia Taylor Millersville University Millersville, PA <a href="mailto:cynthia.taylor@millersville.edu">cynthia.taylor@millersville.edu</a>
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	<b>BOARD MEMBER-AT-LARGE</b> Kristin Lesseig Washington State University Pullman, WA <a href="mailto:kristin.lesseig@wsu.edu">kristin.lesseig@wsu.edu</a>	
<b>VICE-PRESIDENT OF MEMBERSHIP</b> Lisa Poling Appalachian State University Boone, NC <a href="mailto:polingll@appstate.edu">polingll@appstate.edu</a>	<b>EXECUTIVE DIRECTOR</b> Shari Stockero Michigan Technological University Houghton, MI <a href="mailto:stockero@mtu.edu">stockero@mtu.edu</a>	<b>VICE-PRESIDENT OF COMMUNICATIONS &amp; OUTREACH</b> Joel Amidon University of Mississippi Oxford, MS <a href="mailto:jcamidon@olemiss.edu">jcamidon@olemiss.edu</a>
<b>VICE-PRESIDENT OF PROFESSIONAL LEARNING</b> Jennifer Suh George Mason University Fairfax, VA <a href="mailto:jsuh4@gmu.edu">jsuh4@gmu.edu</a>	<b>VICE-PRESIDENT OF PUBLICATIONS</b> Babette Benken California State University, Long Beach Long Beach, CA <a href="mailto:babette.benken@csulb.edu">babette.benken@csulb.edu</a>	<b>VICE-PRESIDENT OF ADVOCACY, EQUITY, &amp; RESEARCH</b> Crystal Kalinec-Craig University of Texas San Antonio San Antonio, TX <a href="mailto:crystal.kalinec-craig@utsa.edu">crystal.kalinec-craig@utsa.edu</a>

## HISTORICAL LISTING OF AMTE PRESIDENTS

PRESIDENT	TERM	PRESIDENT	TERM	PRESIDENT	TERM
Megan Burton	2021 – 2023	Marilyn Strutchens	2011 – 2013	Susan Gay	1999 – 2001
Mike Steele	2019 – 2021	Barbara Reys	2009 – 2011	Nadine Bezuk	1997 – 1999
Randolph Philipp	2017 – 2019	Jennifer Bay-Williams	2007 – 2009	Judith Jacobs	1995 – 1997
Christine Thomas	2015 – 2017	Sid Rachlin	2005 – 2007	Henry Kepner	1993 – 1995
Fran Arbaugh	2013 – 2015	Karen Karp	2003 – 2005	Mark Spikell	1991 – 1993
		Francis (Skip) Fennell	2001 – 2003		

# HISTORY OF THE JUDITH E. JACOBS LECTURE

The Judith E. Jacobs Lecture was established in 2003 to honor Dr. Judith E. Jacobs, one of the founding AMTE members. Dr. Jacobs was instrumental in developing AMTE into a national organization and in the development of the AMTE conference with its current structure and emphasis on interaction. Judith Jacobs is an active member who served as treasurer, president, and as the first executive director. The Judith E. Jacobs Lecture was established after Dr. Jacobs completed her tenure as AMTE Executive Director.

Dr. Jacobs gave the first lecture where she described what it means to be a mathematics teacher educator. She outlined how being a mathematics teacher educator is different from being a mathematics teacher, a career professional developer, or a researcher in mathematics education. Dr. Jacobs challenged us to recognize our roles as mathematics teacher educators and reminded us that, through the AMTE organization, an outlet has been created to share and learn from each other. For information on past Judith E. Jacobs Lectures, please visit the AMTE Conferences website at <https://amte.net/about/awards/judith-jacobs-lecturer>.

YEAR	JUDITH E. JACOBS LECTURER	YEAR	JUDITH E. JACOBS LECTURER
2023	Randy Phillip	2012	Deborah Schifter
2022	Sandra Crespo	2011	Joan Ferrini-Mundy
2021	Marta Civil	2010	James Hiebert
2020	Paola Sztajn	2009	Jeremy Kilpatrick
2019	Denise A. Spangler	2008	Ed Silver
2018	Margaret (Peg) Smith	2007	Deborah Loewenberg Ball
2017	Marilyn E. Strutchens	2006	Judith Sowder
2016	Francis (Skip) Fennell	2005	Glenda Lappan
2015	Nadine Bezuk	2004	Thomas J. Cooney
2014	Barbara J. Reys	2003	Judith E. Jacobs
2013	Karen Karp		

# 2023 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), University of Mississippi, [jjames1@olemiss.edu](mailto:jjames1@olemiss.edu)  
Colleen Eddy (Past AVP for Conferences), University of North Texas, [Colleen.Eddy@unt.edu](mailto:Colleen.Eddy@unt.edu)  
Gabriel Matney, Bowling Green State University, [gmatney@bgsu.edu](mailto:gmatney@bgsu.edu)  
Gail Stewart, University of South Florida, [gailstewart@usf.edu](mailto:gailstewart@usf.edu)  
Courtney Koestler, Ohio University, [koestler@ohio.edu](mailto:koestler@ohio.edu)  
Byungeun Pak, Utah Tech University, [B.pak@utahtech.edu](mailto:B.pak@utahtech.edu)  
Ashley Schmidt, University of Central Florida, [ashley.schmidt@ucf.edu](mailto:ashley.schmidt@ucf.edu)  
Shari Stockero (AMTE Executive Director), Michigan Technological University, [stockero@mtu.edu](mailto:stockero@mtu.edu)  
Farshid Safi (Board Member-At-Large), University of Central Florida, [farshid.safi@ucf.edu](mailto:farshid.safi@ucf.edu)

## LOCAL ARRANGEMENTS

Dana Franz (co-AVP), Mississippi State University, [dfranz@oire.msstate.edu](mailto:dfranz@oire.msstate.edu)  
Liza Bondurant (co-AVP), Delta State University, [lbondurant@deltastate.edu](mailto:lbondurant@deltastate.edu)

Thanks to the many members who volunteered to work at the Registration Desk.

## PHOTOGRAPHY

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Kate Roscioli, George Mason University, [kate@vroscioli.com](mailto:kate@vroscioli.com)  
Kenley Ritter, Baylor University, [kenley\\_ritter1@baylor.edu](mailto:kenley_ritter1@baylor.edu)  
Treshonda Rutledge, University of Central Florida, [treshonda.rutledge@ucf.edu](mailto:treshonda.rutledge@ucf.edu)

## ANNUAL CONFERENCE PROGRAM COMMITTEE

Jeremy Zelkowski (AVP), University of Alabama, [jzelkowski@ua.edu](mailto:jzelkowski@ua.edu)  
Julie Amador (Past AVP), University of Idaho, [jamador@uidaho.edu](mailto:jamador@uidaho.edu)  
Jennifer Ward (AVP Elect), Kennesaw State University, [ward.jennifer.k@gmail.com](mailto:ward.jennifer.k@gmail.com)  
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Sara Donaldson, Wheaton College, [donaldson\\_sara@wheatoncollege.edu](mailto:donaldson_sara@wheatoncollege.edu)

## CONFERENCE APP DEVELOPMENT TEAM

Steve Rhine, AVP for Web Development, [amte-support@amte.net](mailto:amte-support@amte.net)  
Shari Stockero, AMTE Executive Director, [executivedirector@amte.net](mailto:executivedirector@amte.net)  
App Graphics Assets: Designotype Printers, Calumet, MI

# AMTE AFFILIATES

AMTE is proud to welcome members of its 27 affiliated organizations:

## AFFILIATE

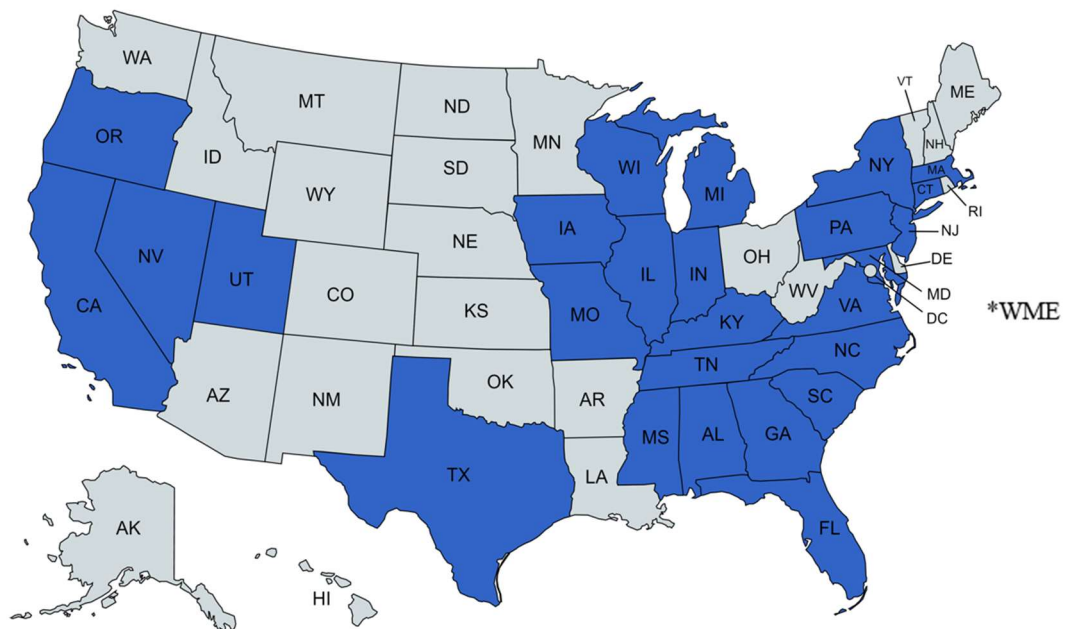
Illinois Mathematics Teacher Educators  
 Utah Association of Mathematics Teacher Educators  
 Florida Association of Mathematics Teacher Educators  
 California Association of Mathematics Teacher Educators  
 Association of Mathematics Teacher Educators of Connecticut  
 Georgia Association of Mathematics Teacher Educators  
 Pennsylvania Association of Mathematics Teacher Educators  
 Tennessee Association of Mathematics Teacher Educators  
 Massachusetts Mathematics Association of Teacher Educators  
 South Carolina Association of Mathematics Teacher Educators  
 New Jersey Association of Mathematics Teacher Educators  
 Association of Mathematics Teacher Educators of Alabama  
 Teachers of Teachers of Mathematics, Oregon  
 Association of Mathematics Teacher Educators in Texas  
 Mississippi Association of Mathematics Teacher Educators  
 Missouri Mathematics Association for Advancement of Teacher Training  
 Iowa Association of Mathematics Teacher Educators  
 Association of Maryland Mathematics Teacher Educators  
 Hoosier Association of Mathematics Teacher Educators  
 Association of Mathematics Teacher Educators of North Carolina  
 Michigan Association of Mathematics Teacher Educators  
 Virginia Association of Mathematics Teacher Educators  
 Kentucky Association of Mathematics Teacher Educators  
 Wisconsin Association of Mathematics Teacher Educators  
 Women and Mathematics Education  
 Nevada Association of Mathematics Teacher Educators  
 New York State Association of Mathematics Teacher Educators

## ACRONYM

IMTE  
 UAMTE  
 FAMTE  
 CAMTE  
 AMTEC  
 GAMTE  
 PAMTE  
 TAMTE  
 MassMATE  
 SCAMTE  
 NJAMTE  
 AMTEA  
 TOTOM  
 AMTE-TX  
 MAMTE  
 (MAT)<sup>2</sup>  
 IOWA AMTE  
 AMMTE  
 HAMTE  
 AMTE-NC  
 MI-AMTE  
 VA-AMTE  
 KAMTE  
 WI-AMTE  
 WME  
 AMTE-NV  
 NYSAMTE

## LOCATION

Illinois  
 Utah  
 Florida  
 California  
 Connecticut  
 Georgia  
 Pennsylvania  
 Tennessee  
 Massachusetts  
 South Carolina  
 New Jersey  
 Alabama  
 Oregon  
 Texas  
 Mississippi  
 Missouri  
 Iowa  
 Maryland  
 Indiana  
 North Carolina  
 Michigan  
 Virginia  
 Kentucky  
 Wisconsin  
 National  
 Nevada  
 New York



The Association of Mathematics Teacher Educators is a member of the Conference Board of the Mathematical Sciences and is an Affiliated Group of the National Council of Teachers of Mathematics.

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

## AFFILIATE CONNECTIONS COMMITTEE SESSION

### **AFFILIATE NEEDS: ADVOCACY, PARTNERSHIPS, AND MANAGEMENT OF STATE AFFILIATES**

**Session 82, Friday, February 3, 8:15 AM – 9:15 AM, Bienville**

The Affiliate Connections Committee (ACC) would like to know the needs and desires for state affiliates regarding advocacy, organizations or partnerships formed for mutual support, management issues or concerns, as well as other topics shared.

## GET THE FACTS OUT TASK FORCE SESSION

### **RECRUITING PRESERVICE TEACHERS IN CURRENT CONTEXTS: SUCCESSES, CHALLENGES, AND RESOURCES**

**Session 114, Friday, February 3, 1:15 PM – 2:15 PM, Astor Ballroom I**

Join the AMTE Get the Facts Out task force in discussing successes and challenges in recruiting preservice secondary teachers in current contexts. This session provides opportunities for participants to share their knowledge and strategies, as well as learn from others.

## MEMBERSHIP COMMITTEE SESSION

### **HIGHLIGHTING THE WORK OF LOUISIANA MATHEMATICS TEACHER EDUCATORS**

**Session 193, Saturday, February 4, 10:30 AM – 11:30 PM, Toulouse A**

Join us to hear about the important work of MTEs right here in Louisiana. You'll have the opportunity to learn new ideas, pose questions, and consider implications for your own work as an MTE.

## PROFESSIONAL DEVELOPMENT COMMITTEE SESSION

### **I AM NEW TO MATHEMATICS TEACHER EDUCATION: SUPPORTS AROUND TEACHING, SCHOLARSHIP, AND SERVICE**

**Session 127, Friday, February 3, 2:30 PM – 3:30 PM, Astor Ballroom I**

This session is designed to provide opportunity for novice mathematics teacher educators to interact with experienced mathematics teacher educators. The roundtable structure of the session allows small groups to discuss topics of interest around research, teaching, and service including designing/implementing a methods course; designing/implementing a content course; navigating academia as an MTE of color; creating a network of support and mentorship; connecting with schools; managing work and life responsibilities; coping as the lone math educator in your department; and getting your research agenda off the ground through creating a research and publishing pipeline.

## PUBLICATIONS DIVISION SESSION

### **CHOOSING AN AMTE PUBLICATION TO SHOWCASE YOUR SCHOLARLY WORK: OPPORTUNITY FOR FEEDBACK**

**Session 41, Thursday, February 2, 2:30 PM – 3:30 PM, Astor Ballroom I**

This session allows potential authors to receive feedback for the improvement of manuscripts for AMTE's publications: *Mathematics Teacher Educator*, *Contemporary Issues in Technology and Teacher Education-Math*, *Connections*, and the Professional Book Series, focusing on clarification of expectations for publication.

## TECHNOLOGY COMMITTEE SESSION

### **CONNECTING TECHNOLOGY RESEARCH RECOMMENDATIONS TO MATHEMATICS TEACHER EDUCATOR PRACTICES: AN AMTE TECHNOLOGY COMMITTEE REPORT**

**Session 163, Saturday, February 4, 8:15 AM – 9:00 AM, St. Ann**

The updated AMTE Position on Technology overviewed five research-based ways MTEs should incorporate technology in their work. This presentation connects each of the five recommendations to specific practices MTEs can incorporate, using examples from recent published sources supplemented with the committee's own experience working with technology.

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

## AMTE DISSERTATION AWARD

The annual AMTE dissertation award serves as a means to elevate the work of early career scholars whose research has strong implications for mathematics teacher education that supports preservice and practicing teachers in any of the following ways: to understand the ways in which social, historical, and institutional contexts of mathematics affect teaching and learning; to teach in ways that are responsive to such realities; and to advocate for each and every student.

**2022 AMTE DISSERTATION AWARD WINNER**  
MELISSA ADAMS CORRAL, UNIVERSITY OF TEXAS RIO GRANDE VALLEY



## EARLY CAREER AWARD

The purpose of the Early Career award is to recognize a mathematics teacher educator who, while early in their career, has made distinguished contributions and shows exceptional potential for leadership in one or more areas of teaching, service, and/or scholarship. The AMTE Early Career Award is awarded annually.

**2022 EARLY CAREER AWARD WINNER**  
Cathery Yeh, The University of Texas at Austin



**Session Title:** *Unsettling Norms, Dismantling Barriers, and Healing My Wounds: Recognizing and Disrupting White, Ableist Normativity in Mathematics Education*

**Location:** Session 031, St. Louis

**Time:** Thursday, February 2, 1:15 PM – 2:15 PM

**2023 EARLY CAREER AWARD WINNER**  
Megan Wickstrom, Montana State University

Megan has been invited to speak at the 2024 AMTE Annual Conference in Orlando, FL.



## EXCELLENCE IN SCHOLARSHIP AWARD

The Excellence in Scholarship Award recognizes a colleague for a unique contribution in scholarship that has made a significant and lasting contribution to mathematics teacher education, directly and indirectly. The next Excellence in Scholarship Award will be awarded in 2026.

**2023 EXCELLENCE IN SCHOLARSHIP AWARD WINNER**  
Daniel Chazan, University of Maryland

**Session Title:** *Representations of Practice and Evolving Infrastructures to Support Their Use*

**Location:** Session 91, St. Louis

**Time:** Friday, February 3, 9:30 AM – 10:30 AM





# THE NTLI AWARD

Since fall 2000, the Society for Information Technology and Teacher Education (SITE) has been collaborating with four teacher education associations representing the content areas of mathematics, science, English language arts, and social studies education through the National Technology Leadership Initiative (NTLI). The NTLI fellowships were established to recognize exemplary presentations related to integration of technology in core content areas at the annual meetings of each participating association. AMTE identifies the winner of its NTLI fellowship through a competitive process that includes the requirement of submitting a paper in advance of the conference. The winner of the award receives travel funding (\$1200) for presenting at the annual conference of the SITE, and the paper is forwarded and recommended for publication in the CITE journal by the AMTE Technology Committee after additional review. For more information, visit the following website: [site.aace.org/awards/awards-ntli.htm](http://site.aace.org/awards/awards-ntli.htm).

## 2023 AMTE NTLI Award Winners

Katherine Roscioli, George Mason University  
Theresa Wills, George Mason University  
Jennifer Suh, George Mason University



**Session Title:** Implementing an Equity-centered Technology Framework with Mathematics Specialist Candidate Created STEM Tasks

**Location:** Session 148, St. Louis

**Time:** Friday, February 3, 3:45 PM – 4:45 PM

# MTE OUTSTANDING REVIEWER AWARD

The purpose of the *Mathematics Teacher Educator* Outstanding Reviewer Award is to recognize a colleague who, through their service as a reviewer for *Mathematics Teacher Educator* journal, provided exemplary reviews of the highest quality and value for editorial review of submitted scholarly manuscripts.

## 2023 MTE OUTSTANDING REVIEWER AWARD WINNER

Amber Candela, University of Missouri - St. Louis



## SCHOLARSHIPS FOR ELEMENTARY MATHEMATICS SPECIALISTS

The purpose of this Elementary Mathematics Specialist (EMS) Scholarship is to provide the recipient with \$2,000 of funding to enhance their mathematics knowledge, teaching, and leadership by enrolling in university coursework that will result in becoming a certified elementary mathematics specialist. Elementary mathematics specialists work as teachers, teacher leaders, or coaches and support effective mathematics instruction and student learning at the classroom, school, district, or state levels.

### CONGRATULATIONS TO THE 2022 EMS SCHOLARSHIP RECIPIENTS!

Sarah Hann, Republic, Missouri  
Christina Montiel, Jackson Hole, Wyoming  
Barbara Wlazio, New York City, New York

Check [amte.net/about/ems](https://amte.net/about/ems) in the spring for information about the next round of EMS Scholarships.

*AMTE would like to thank our founding sponsor of the EMS Scholarships:*



## SUSAN GAY GRADUATE STUDENT CONFERENCE TRAVEL SCHOLARSHIP

The Susan Gay Graduate Student Conference Travel Scholarship was established to provide financial support to graduate students to attend the AMTE annual conference. This scholarship is named after Susan Gay in honor of her extraordinary service to AMTE over many years as conference director, president, secretary, and board member-at-large. To qualify for the scholarship, one must be a doctoral student making steady progress toward completion of a degree. Applications will be screened initially based on the content of the application and then placed into a lottery based on geographic location.

### 2023 SUSAN GAY GRADUATE STUDENT CONFERENCE TRAVEL SCHOLARSHIP RECIPIENTS

Micaela Yoriko Harris, Vanderbilt University  
Kenya Overton, University of Connecticut  
James Drimalla, University of Georgia  
Kenley Ritter, Baylor University

# ACKNOWLEDGEMENTS

The Twenty-Seventh Annual AMTE Conference would not be possible without the contributions and support of many individuals.

AMTE WISHES TO EXPRESS ITS SINCERE APPRECIATION TO THE FOLLOWING:

- All of the speakers who have contributed their time and expertise to make this conference a success;
- All of the AMTE members who volunteered to serve as proposal reviewers, Manuscript Review Group mentors, and Community Circles facilitators;
- The many individuals who make up the AMTE infrastructure – the AMTE Board of Directors, Executive Director, Program Committee, Conferences Committee, and Local Arrangements Committee for providing the time and effort necessary to organize all facets of the conference;
- Gail Stewart of the Conferences Committee, Steve Rhine, AVP for Communications, and Designotype Printers, AMTE Graphic Designers, for their dedicated work on the conference program and materials; and
- Rachel Harlow, Administrative Assistant for AMTE Conferences Committee, for all of her hard work with organizing logistics and details for this year's conference.

When you see any of these individuals at our AMTE conference, we hope that you will take the time to express your own gratitude for their dedication to the organization and to the success of the 2023 conference.

# 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.

## CPM EDUCATIONAL PROGRAM

## GOLD SPONSOR

CPM Educational Program ([www.cpm.org](http://www.cpm.org)) is a California nonprofit 501(c)(3) serving the secondary mathematics education community with curriculum, professional development, and leadership. CPM envisions a world where mathematics is viewed as intriguing and useful, and is appreciated by all; where powerful mathematical thinking is an essential, universal, and desirable trait; and where people are empowered by mathematical problem-solving and reasoning to solve the world's problems. CPM Educational Program is pleased to support AMTE and its STaR Fellows program financially and with the CPM University Support Program. The STaR program aligns with CPM's mission to empower mathematics students and foster expertise in teachers 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's University Support Program provides complimentary curriculum materials to support pre-service teacher candidates, mathematics teacher educators, and mathematics curriculum reviewers and researchers.

## MAIER MATH FOUNDATION

## GOLD SPONSOR

The mission of the **Maier Math Foundation (MMF)** is to inspire and enable individuals to discover and develop their mathematical confidence and ability by developing resources that promote and utilize visual math models as tools for learning and inquiry-based problem solving, through supporting research regarding effective math education practices and professional learning, and by providing opportunities for individuals of all ages to see and experience the power of mathematical reasoning and sense-making.

## MATH LEARNING CENTER

## SILVER SPONSOR

**The Math Learning Center™ (MLC)** is a nonprofit organization serving the education community. Our mission is to inspire and enable individuals to discover and develop their mathematical confidence and ability. We offer innovative and standards-based curriculum, resources, and professional development. Many of these resources are available free through the Bridges University Program, which provides university instructors access to the full contents of *Bridges® in Mathematics* PK–5 curriculum. Our products and services are used by educators throughout the United States and in many international locations.

MLC is the founding sponsor of the Elementary Mathematics Specialist Awards. The recipients of these awards receive funding to enhance their mathematics knowledge, teaching, and leadership by enrolling in university coursework that will result in becoming certified elementary mathematics specialists.

## NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS

## SILVER SPONSOR

The National Council of Teachers of Mathematics is the public voice of mathematics education, supporting teachers to ensure equitable mathematics learning of the highest quality for all students. NCTM members belong to the largest community of mathematics educators committed to ensuring each and every student has access to the highest quality mathematics teaching and learning. Membership opens doors to classroom resources, professional development opportunities, advocacy, peer-reviewed journals and publications, and an extensive network of teachers and mentors. Learn more about NCTM and the benefits of membership at [www.nctm.org/join](http://www.nctm.org/join).

## **BUDAPEST SEMESTERS IN MATHEMATICS EDUCATION**

### **BRONZE SPONSOR**

Summer@BSME 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**

### **BRONZE SPONSOR**

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. [Please click on this link to visit their virtual bookstore](#) and to browse their current mathematics publications, as well as, the AMTE monographs.

## **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 for more information about NCSM, our publications and resources to support mathematics leaders.



# CPM Educational Program

*Empowering mathematics students  
and teachers for over 30 years through exemplary  
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## 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
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- + Team Roles and Groupworthy Tasks to support collaboration
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- + 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 Maier Math Foundation was created by the [Math Learning Center](#), a non-profit with a shared mission to empower individuals to develop their mathematical confidence and ability.

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

With a focus on visual math models and inquiry-based, learner-focused educational practices, the Maier Math Foundation facilitates collaboration with researchers and other nonprofit organizations to pursue common objectives, including collaboration with AMTE on a [Math Ed Scholarships](#) program and [Math at Home](#).

[Learn More](#)

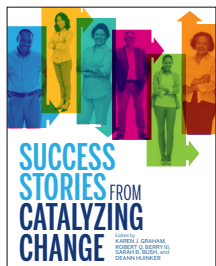
**Our mission is to empower individuals  
to develop their mathematical  
confidence and ability.**



# Great Titles from NCTM Publications

## CATALYZING CHANGE SERIES

### NEW! Success Stories from Catalyzing Change



Edited by Karen Graham, Robert Q. Berry III, Sarah B. Bush, and DeAnn Huinker

Experience the journeys of mathematics educators as they

implement key recommendations from Catalyzing Change. These inspiring stories highlight the challenges and successes of implementing equitable teaching practices in classrooms everywhere.

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### Early Childhood and Elementary Mathematics

© 2020 | Stock #15928 | 166 pp. | ISBN 978-1-68054-042-0  
Nonmember \$48.19 | [Essential \\$36.19](#) | [Premium \\$33.73](#)

### Middle School Mathematics

© 2020 Stock #15929 | 134 pp. | ISBN 978-1-68054-044-4  
Nonmember \$48.19 | [Essential \\$36.19](#) | [Premium \\$33.73](#)

### High School Mathematics

© 2018 | Stock #15637 | 126 pp. | ISBN 978-1-68054-014-7  
Nonmember \$48.19 | [Essential \\$36.19](#) | [Premium \\$33.73](#)



## TAKING ACTION SERIES

Series Editor, Margaret S. Smith

This series, designed to accompany the teachings of *Principles to Actions*, offers a coherent set of professional learning experiences that foster teachers' understanding of the effective mathematics teaching practices and their ability to apply those practices in their own classrooms. These books examine in depth what each teaching practice would look like in classrooms of all levels with narrative cases, classroom videos, and real student work that present a rich array of experiences that bring the practices to life.

### Implementing Effective Mathematics Teaching Practices in Grades K–5

DeAnn Huinker and Victoria Bill

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Nonmember \$46.30 | [Essential \\$34.73](#) | [Premium \\$32.41](#)

### Implementing Effective Mathematics Teaching Practices in Grades 6–8

Margaret Smith, Michael Steele, and Mary Lynn Raith

© 2017 | Stock #15200 | 240 pp. | ISBN 978-0-87353-975-3  
Nonmember \$46.30 | [Essential \\$34.73](#) | [Premium \\$32.41](#)

### Implementing Effective Mathematics Teaching Practices in Grades 9–12

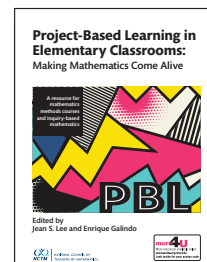
Melissa Boston, Frederick Dillon, Margaret Smith, and Stephen Miller

© 2017 | Stock #15201 | 260 pp. | ISBN 978-0-87353-976-0  
Nonmember \$46.30 | [Essential \\$34.73](#) | [Premium \\$32.41](#)



## Project-Based Learning in Elementary Classrooms: Making Mathematics Come Alive

Kathryn B. Chval, Erin Smith, Lina Trigos-Carrillo, and Rachel J. Pinnow



This book presents an overview of the essentials of project-based learning (PBL) and the evidence that supports the use of PBL. It showcases PBL units addressing the CCSS for Math for the purpose of demonstrating how PBL works and the learning that results.

© 2021 | Stock # 16020 | 226 pp. | ISBN 978-1-68054-068-0  
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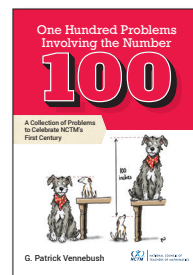
## One Hundred Problems Involving the Number 100

Available on Amazon Kindle

G. Patrick Vennebush

These fun problems celebrate the “Goldilocks” charm of 100—a number not too small, not too large, but just right to challenge students without intimidating them. A range of mathematical topics from patterns, conversions, and sums and series to number theory, functions, probability and statistics, and geometry are covered.

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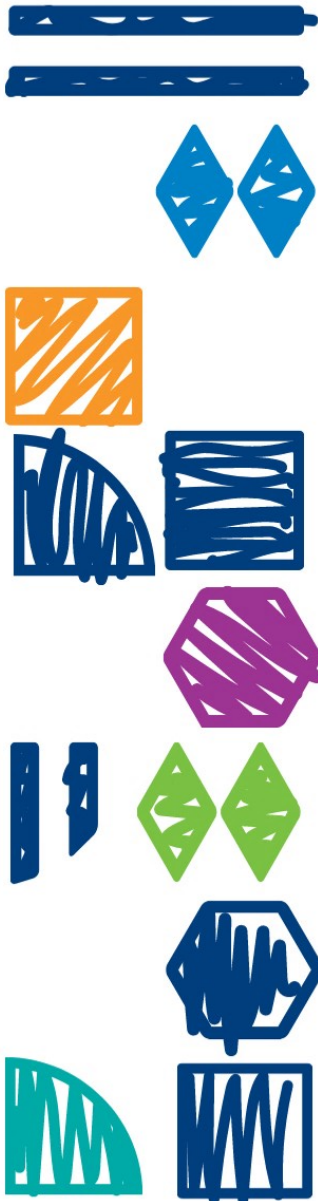
NATIONAL COUNCIL OF  
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## The MATH LEARNING CENTER

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The Math Learning Center™ (MLC) is a nonprofit organization serving the education community. Our mission is to inspire and enable individuals to discover and develop their mathematical confidence and ability. We offer innovative and standards-based curriculum, resources, and professional development. Many of these resources are available free through the Bridges University Program, which provides university instructors access to the full contents of *Bridges® in Mathematics* PK–5 curriculum. Our products and services are used by educators throughout the United States and in many international locations.

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[www.mathlearningcenter.org](http://www.mathlearningcenter.org)

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



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**B S M E**  
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IN MATHEMATICS EDUCATION

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but know-how, attitudes of mind,  
the habit of methodical work.”*  
– George Pólya

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

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

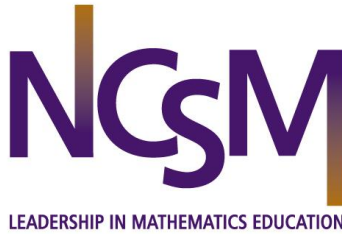
**PROGRAM HIGHLIGHTS:**

- 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 experience on how the Hungarian pedagogy is put into practice.
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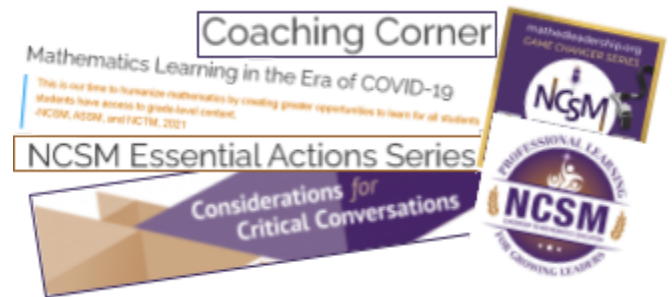


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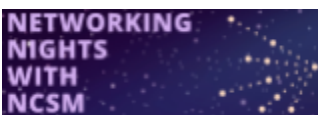
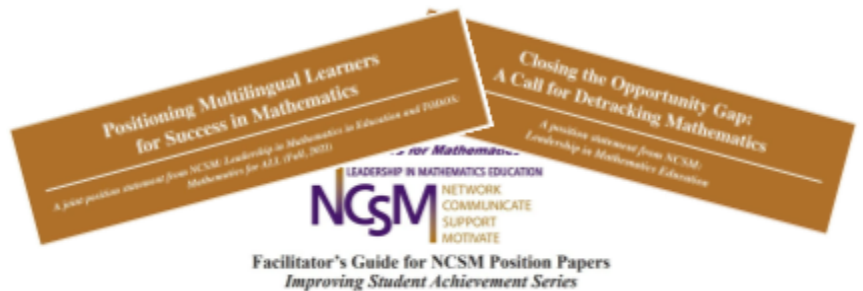


Access to current and archived digital publications that keep us updated on what is new in mathematics leadership.

- *Journal of Mathematics Education Leadership*
- *NCSM Inspiration!* quarterly newsletter
- *NCSM Insider* monthly email update
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Research informed position papers that can help members interpret important national documents and support critical actions that lead to improved student achievement in mathematics.



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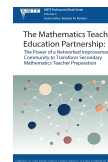
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# AMTE 2023 Annual Conference Association of Mathematics Teacher Educators February 2-4, 2023

## Featured Series:

### The Association of Mathematics Teacher Educators (AMTE) Professional Book Series

Series Editor: Babette M. Benken, *California State University, Long Beach*



### The AMTE Monograph Series

Series Editor: AMTE

### The Montana Mathematics Enthusiast - Monograph Series

Series Editor: Bharath Sriraman, *University of Montana*

### Cognition, Equity & Society: International Perspectives Series

Series Editor: Bharath Sriraman, *University of Montana*

### Research in Mathematics Education Series

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

## Featured Books:



### Handbook of STEM Faculty Development

Edited by: Sandra M. Linder, *Clemson University*; Cindy M. Lee, *Clemson University*; Shannon K Stefl, *Clemson University*; and Karen A. High, *Clemson University*



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

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



### Beyond Provincialism: Promoting Global Competencies in Teacher and Educator Preparation

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



### Short Geometry Labs: Visual and Tactile Understanding First

By: Francis Gardella, *Hunter College-CUNY*; and Richard Delaware, *University of Missouri-Kansas City*



### 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*



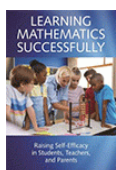
### Standards for Preparing Teachers of Mathematics (color version)

By: Association of Mathematics Teacher Educators (AMTE)



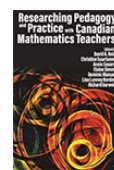
### Mathematics as the Science of Patterns: Making the Invisible Visible to Students Through Teaching

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



### Learning Mathematics Successfully: Raising Self-Efficacy in Students, Teachers and Parents

By: Clark J Hickman; and Helene J. Sherman



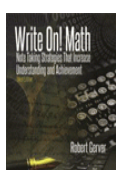
### Researching Pedagogy and Practice with Canadian Mathematics Teachers

Edited by: David A Reid, *Universitetet i Agder*; 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*; and Richard Barwell, *University of Ottawa*



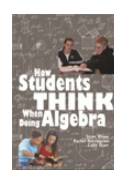
### The Mathematics Teacher Education Partnership: The Power of a Networked Improvement Community to Transform Secondary Mathematics Teacher Preparation

Edited by: W. Gary Martin, *Auburn University*; Brian R. Lawler, *Kennesaw State University*; Alyson E. Lischka, *Middle Tennessee State University*; and Wendy M. Smith, *University of Nebraska - Lincoln*



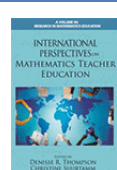
### Write On! Math: Note Taking Strategies That Increase Understanding and Achievement 3rd Edition

By: Robert Gerver



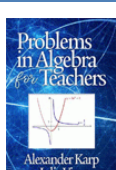
### How Students Think When Doing Algebra

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



### International Perspectives on Mathematics Teacher Education

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



### Problems in Algebra for Teachers

By: Alexander Karp, *Teachers College, Columbia University*; and Julia Viro, *Stony Brook University*




### Selected Writings from the Journal of the Saskatchewan Mathematics Teachers' Society: Celebrating 50 years (1961-2011) of Vinculum





Edited by: Egan J Chernoff, *University of Saskatchewan*; Gale L. Russell, *University of Regina*; and Bharath Sriraman, *University of Montana*

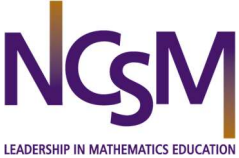


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# EXHIBITORS

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 on the second floor located between Astor Ballroom I and Grand Ballroom A.

EXHIBITOR	ABOUT THE EXHIBIT
<p>AMTE GET THE FACTS OUT TASK FORCE</p>	<p>Get the Facts Out (GFO) is an NSF-funded project between four national societies and the Colorado School of Mines, working together to repair the reputation of the teaching profession: the American Physical Society, the American Chemical Society, the American Association of Physics Teachers, and the Association of Mathematics Teacher Educators. GFO is a unique project designed to reach STEM majors and has the potential to significantly address teacher shortages in these high-need STEM disciplines. To change the conversation around STEM teacher recruitment at institutions across the country, GFO produces research-based, user-tested resources and messaging that faculty can use to help improve their teacher recruitment efforts. The resources and messages are designed to celebrate the positives of teaching and to provide students and faculty with facts that address misinformation and common misperceptions about teaching. Supported by the National Science Foundation under Grant Nos. 1821710 &amp; 1821462.</p>
<p>AMTE ADVOCACY COMMITTEE</p>	<p>The Advocacy Committee will host a table featuring the three local organizations from the advocacy luncheon. Each organization will have promotional materials to highlight how they advocate for students, teachers, and families amidst a highly-charged political climate. It is our hope that conversations with local organizations will provide unique insight and inspire collaboration.</p>
<p>AMTE PUBLICATIONS COMMITTEE</p>	<p>The Publications Division of AMTE has three publications: <i>Mathematics Teacher Educator</i> journal (MTE), <i>Contemporary Issues in Technology and Mathematics Teacher Education</i> (CITE-M), and <i>Connections</i> (AMTE's quarterly newsletter publication that also has peer-reviewed articles). The Division also spearheads the Professional Book Series.</p>
 <p>CPM EDUCATIONAL PROGRAM</p>	<p>CPM Educational Program is a California nonprofit 501(c)(3) empowering mathematics students and teachers through exemplary curriculum, professional development, and leadership. We recognize and foster teacher expertise and leadership in mathematics education. We engage all students in learning mathematics through problem solving, reasoning, and communication. CPM's University Support Program provides complimentary curriculum materials to support pre-service teacher candidates, mathematics teacher educators, and mathematics curriculum reviewers and researchers. Please visit <a href="http://booth.cpm.org">booth.cpm.org</a> to learn more about CPM Educational Program and <a href="http://cpm.org/university">cpm.org/university</a> to request complimentary access to CPM materials.</p>

EXHIBITOR	ABOUT THE EXHIBIT
<p data-bbox="139 348 435 422">GUILFORD COUNTY SCHOOLS</p> 	<p data-bbox="456 218 1458 432">Guilford County Schools (GCS) is the third largest school district in the state of North Carolina serving more than 72,500 students across 126 schools in urban, suburban and rural areas. Tucked away in central North Carolina, GCS is diverse both in its student body and in its academics. The district serves students who speak 117 languages/dialects and who represent 95 countries. The district is a national leader in magnet/school choice programs, offering 53 magnet programs satisfying a varied range of ages, skill levels and interests.</p> <p data-bbox="456 466 1468 646">Our math Department is comprised of three elementary supervisors and two secondary supervisors. Together, we have over 120 years of experience in public education. Our role is to support teachers, curriculum facilitators, and administrators in ensuring that all students have access to high quality math instruction. We support curriculum facilitators at monthly meetings, provide focused professional development for teachers, and work with teams in schools to build teacher capacity.</p>
 <p data-bbox="144 940 428 1010">INFORMATION AGE PUBLISHING – IAP</p>	<p data-bbox="456 722 1458 1083">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. <a href="#">Please click on this link to visit their virtual bookstore</a> and to browse their current mathematics publications, as well as the AMTE monographs.</p>
 <p data-bbox="180 1367 394 1402">MAGMA MATH</p>	<p data-bbox="456 1213 1446 1331">A leading k-12 platform for teaching Math that leverages hand-drawn solutions. By allowing students to creatively express their solution and show their work, teachers can employ strategies and techniques for formative assessment, inclusiveness, data driven and differentiated instruction.</p>
<p data-bbox="160 1451 412 1633">MAIER MATH FOUNDATION AND MATH LEARNING CENTER</p> 	<p data-bbox="456 1461 1430 1520">MLC and MMF will work together to display samples of the <i>Bridges in Mathematics</i> PK–5 curriculum and inform attendees about the Bridges University Program.</p> <p data-bbox="456 1554 1435 1642">Schools of education or university instructors may request a free subscription to the Bridges Educator Site. This "teacher portal" contains the full contents of <i>Bridges in Mathematics</i> in PDF format as well as a host of support resources.</p> <p data-bbox="456 1675 1458 1793">As a <a href="#">mission-driven organization</a>, we're interested in promoting best practices in math education. By providing this free resource, we hope to contribute to elementary teacher education and professional development. In particular, we believe these Bridges materials may be useful for math methods courses.</p>

EXHIBITOR	ABOUT THE EXHIBIT
 <p data-bbox="170 394 406 550">NCSM – LEADERSHIP IN MATHEMATICS EDUCATION</p>	<p data-bbox="448 226 1474 504">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 for more information about NCSM, our publications and resources to support mathematics leaders.</p>
 <p data-bbox="138 747 438 865">NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS</p>	<p data-bbox="448 642 1474 793">The National Council of Teachers of Mathematics supports teachers at all levels and places on their journey towards equitable mathematics learning of the highest quality for each and every student. NCTM members are a community committed to supporting and uplifting each other as we work towards this shared goal in a wide range of settings. Visit <a href="http://www.nctm.org/join">www.nctm.org/join</a>.</p>
 <p data-bbox="138 1201 438 1306">TODOS – MATHEMATICS FOR ALL!</p>	<p data-bbox="448 919 1474 1411">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 published the position statement, <a href="#">The Mo(ve)ment to Prioritize Antiracist Mathematics: Planning for This and Every School Year</a> plus three additional statements, <a href="#">Statement on Violence Against Asian Americans</a>, <a href="#">Statement in Support of LGBTQ+ Persons</a>, and <a href="#">Where is Manuel? A Rejection of 'Learning Loss'</a> in response to the current inequities and injustices. In addition, the NCSM and TODOS published <a href="#">Positioning Multilingual Learners for Success in Mathematics</a> in Fall 2021. TODOS continues to advocate for a dual focus on social justice and excellence in mathematics. The TODOS 2023 Conference will be held June 21-23, 2023 in Albuquerque, NM with the theme of the conference <i>Actions in Mathematics Education (AiME): Catalyzing, Cultivating, and Expanding Critical Transformations</i>. Go to <a href="http://www.todos-math.org/conferences">www.todos-math.org/conferences</a> for updated information.</p>



**COFFEE & TEA**

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

**GRAND GALLERY**



**OPENING SESSION**

**Uniting to Advocate for Teachers and the Teaching Profession**

*Malcolm B. Butler, University of North Carolina, Charlotte*

*Sarah Demoiny, Auburn University*

*Enrique Galindo, Indiana University, Bloomington*

*Betina Hsieh, Cal State University, Long Beach (virtual)*

*Luz Maldonado Rodriguez, Texas State University, San Marcos*

In this session, leaders from professional organizations in several content areas address the following topics: What are some efforts to deprofessionalize education in their content areas? What are some implications and consequences to students, teacher candidates, educators, and communities in areas where these efforts to deprofessionalize and dehumanize education are taking place? What are some ways to value and support teachers (preservice and in classrooms) and teacher educators? How can we work together through intentional and strategic cross-disciplinary collaborations to advocate for teachers and teacher educators?

**GRAND BALLROOMS A-D**





# OVERVIEW OF THURSDAY MORNING, FEBRUARY 2, 2023

	10:15 AM - 11:00 AM	11:15 AM - 12:00 PM
<b>St. Charles A</b>	1. <i>Designing Learning Experiences for Developing a Critical Statistical Literacy</i> - Weiland, Sundrani & Cole	14. <i>Principles and Practices in Humanizing Secondary Mathematics Teacher Preparation</i> - Lesseig, Hall, Asare & Akmal
<b>St. Charles B</b>	2. <i>Rethinking Professional Development to Align with Teachers' Realities During (and After) the COVID-19 Pandemic</i> - de Araujo, De Leon Alejandro, Wonsavage, Candela & Stewart	15. <i>Toward Advancing Middle School Teachers' Teaching of Proportional Reasoning At Scale: Intelligent and Adaptive Professional Development</i> - Copur-Gencturk & Atabas
<b>Astor Ballroom I</b>	3. <i>Using Complex Instruction to Dismantle White Supremacy Culture</i> - Dunleavy & Lo	16. <i>Teaching All Students: Instructional Activities That Support Candidates Pedagogical Development for Working with Neurodiverse Students</i> - Lynch & Swartz
<b>Astor Ballroom II</b>	4. <i>Parent Tutoring Programs as Transformative Practical Contexts to Develop Sensemaking Skills in Novice Mathematics Educators</i> - Bonner, Kelley Elmore & Pham	17. <i>Digital Clinical Simulations: Designing to Disrupt Inequitable Practices for Preservice Teachers</i> - Barno & Benoit
<b>Astor Ballroom III</b>	5. <i>Noticing in Content Courses: Instructional Activities and Educative Supports for Mathematics Teacher Educators</i> - Tyminski, Bragelman, Castro Superfine & Amador	18. <i>A Typology of the Suggestions Coaches Provide to Teachers</i> - Amador & Carson
<b>St. Louis</b>	6. <i>How Teachers Choose Among Four Versions of the Dynamic Geometry Software Parallelogram Task</i> - Nirode & Boyd	19. <i>Opportunities for Recruitment, Retention, and Diversification of the Math Teacher Pipeline: A Noyce Case Study</i> - Velasco & Hong
<b>St. Ann</b>	7. <i>Admissions Processes for Mathematics Teacher Education Programs and Mathematics Teacher Educators' Perspectives about Admissions</i> - Roth McDuffie, Slavitt, Griggs & Pearcy	20. <i>Decomposing Practice through 360 Video of Mathematics Lessons</i> - Kosko & Zolfaghari
<b>Bourbon</b>	8. <i>Specialized Assessments for Specialized Mathematics Content Knowledge: Represent, Connect, and Explain</i> - Broaddus	21. <i>Exploring Questioning Practices Intended to Support Students' Opportunities for Discussing Mathematical Connections During Number Talks</i> - McMillan, Joswick & Conner
<b>Burgundy</b>	9. <i>The Precarity of Data Literacy in Mathematics Education</i> - Metts	22. <i>Intercultural Knowledge and Competence for Teaching Mathematics: Exploring Elementary Preservice Teachers' Perceptions Over Time</i> - Cavanna
<b>Toulouse A</b>	10. <i>Implementing the Thinking Classroom in a University Preservice Elementary Teacher Math Classroom: A Case Study</i> - Hansen	
<b>Toulouse B</b>	11. <i>Supporting Preservice Secondary Mathematics Teachers' Development and Rehearsal of Data Talks</i> - Bailey	23. <i>The Social Construction of Authorities in an Early Elementary Classroom: Implications for Mathematics Teacher Education</i> - Edelen & Safi
<b>Bienville</b>	12. <i>What-How-Who: A Lesson Planning Framework</i> - Jackson, Taylor & Buchheister	24. <i>Encouraging Preservice Teachers' Self-Reflection for Teaching Generalizing</i> - Thompson, Hallman-Thrasher & Heacock
<b>Iberville</b>	13. <i>Mathematics-Based Escape Rooms that Promote Problem Solving</i> - Powers & King	25. <i>Empowering Low Self-Confident Math Learners through Improv Teaching</i> - Colen

**Session 1** **St. Charles A**  
**Mathematics Content and Curriculum**  
**Individual Session**

***Designing Learning Experiences for Developing a Critical Statistical Literacy***

Travis Weiland, *University of Houston*  
 Anita Sundrani, *University of Houston*  
 Sofia Jean Cole, *University of Northern Colorado*

In this presentation we share our theory of change and design principles for a design research project focused on developing mathematics teachers' critical statistical literacy for doing and teaching statistics.

**Session 2** **St. Charles B**  
**Professional Development**  
**Symposium**

***Rethinking Professional Development to Align with Teachers' Realities During (and After) the COVID-19 Pandemic***

Zandra de Araujo, *University of Florida*  
 Jose David De Leon Alejandro, *University of Florida*  
 F Paul Wonsavage, *University of Florida*  
 Amber G Candela, *University of Missouri-St. Louis*  
 Maria Nielsen Stewart, *University of Missouri*

Join us in conversation around the professional development landscape in the wake of Covid-19. How has the landscape shifted? What are new challenges? How can we leverage new formats for professional learning that arose from the pandemic?

**Session 3** **Astor Ballroom I**  
**Collaborations and Partnerships**  
**Discussion Session**

***Using Complex Instruction to Dismantle White Supremacy Culture***

Teresa K Dunleavy, *Antioch University Seattle*  
 Michelle Lo, *Campbell Union High School District*

Our discussion session features a mathematics teacher educator and a high school mathematics teacher who sought to investigate how aspects of White Supremacy Culture both appear and can be dismantled as part of mathematics complex instruction.

**Session 4** **Astor Ballroom II**  
**Practice-Based Experiences for Prospective Teachers**  
**Individual Session**

***Parent Tutoring Programs as Transformative Practical Contexts to Develop Sensemaking Skills in Novice Mathematics Educators***

Emily Bonner, *University of Texas at San Antonio*  
 Traci Kelley Elmore, *University of Texas at San Antonio*  
 Anh Pham, *University of Texas at San Antonio*

This session presents a parent mathematics tutoring program as a formative practice-based experience. Prospective teachers received onsite coaching and practiced sequencing, scaffolding, and task development using community knowledge. Video and artifact data will be shared to facilitate discussion.

**Session 5** **Astor Ballroom III**  
**Development of Mathematics Teacher Educators**  
**Individual Session**

***Noticing in Content Courses: Instructional Activities and Educative Supports for Mathematics Teacher Educators***

Andrew Tyminski, *Clemson University*  
 John Bragelman, *University of North Georgia*  
 Alison Castro Superfine, *University of Illinois Chicago*  
 Julie Amador, *University of Idaho*

We present the design of our intervention addressing teacher noticing in a content course for elementary teachers. We will engage participants in examining activities and lead a discussion of educative supports needed by Mathematics Teacher Educators for their own implementation.

**Session 6** **St. Louis**  
**Teaching and Learning with Technology**  
**Individual Session**

***How Teachers Choose Among Four Versions of the Dynamic Geometry Software Parallelogram Task***

Wayne Nirode, *Miami University*  
 Brian Boyd, *Wright State University*

This session shares results from research on how three groups of teachers at different career points choose among four versions of a DGS task with varying degrees of hard scaffolding. Participants will discuss implications for their work with teachers.

**Session 7** **St. Ann**  
**Mathematics Education Policy and Program Issues**  
**Individual Session**

***Admissions Processes for Mathematics Teacher Education Programs and Mathematics Teacher Educators' Perspectives about Admissions***

Amy M Roth McDuffie, *Washington State University*  
David Slavit, *Washington State University Vancouver*  
Nicole Paige Griggs, *Washington State University*  
Melissa Percy, *Washington State University*

The presentation focuses on admissions processes for teacher education programs that prepare mathematics teachers. A study that examined admissions processes and mathematics teacher educators' perspectives will be discussed, as well as implications for recruitment and admissions.

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**Session 8** **Bourbon**  
**Mathematics Content and Curriculum**  
**Individual Session**

***Specialized Assessments for Specialized Mathematics Content Knowledge: Represent, Connect, and Explain***

Angela Broaddus, *Benedictine College*

Come learn about Explain Assignments, which require PSTs to model and explain their mathematical thinking. Together we will examine assessment tasks and responses to consider what they indicate about PSTs developing specialized content knowledge. Several assessment tasks will be shared.

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**Session 9** **Burgundy**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Individual Session**

***The Precarity of Data Literacy in Mathematics Education***

Elizabeth Metts, *Vanderbilt University*

Data is an integral part of our society, opening up opportunities for relevant and meaningful engagement of mathematics. But is data inherently equitable? In this session, we will explore the epistemological and socio-historical implications of data and statistics in classrooms.

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**Session 10** **Toulouse A**  
**Mathematics Pedagogy**  
**Individual Session**

***Implementing the Thinking Classroom in a University Preservice Elementary Teacher Math Classroom: A Case Study***

Heidi Britte Hansen, *Bemidji State University*

This session reports on the implementation of Peter Liljedahl's (2021) Thinking Classroom pedagogical model in a second-semester mathematics content course for preservice elementary teachers as a tool for enhancing deep mathematical thinking.

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**Session 11** **Toulouse B**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Individual Session**

***Supporting Preservice Secondary Mathematics Teachers' Development and Rehearsal of Data Talks***

Nina G Bailey, *University of North Carolina at Charlotte*

Join us to learn how to support pre-service teachers in developing the habits of mind needed to engage in critical statistical literacy through the planning and rehearsal of data talks guided by the CSLHM framework.

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**Session 12** **Bienville**  
**Mathematics Pedagogy**  
**Individual Session**

***What-How-Who: A Lesson Planning Framework***

Christa Jackson, *Saint Louis University*  
Cynthia E Taylor, *Millersville University*  
Kelley Buchheister, *University of Nebraska-Lincoln*

In this session, we describe the What-How-Who structure, which may be used to frame the lesson planning process in ways that foreground the learner and situate differentiated learning experiences that fosters their mathematical understanding.

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**Session 13** **Iberville**  
**Mathematics Content and Curriculum**  
**Individual Session**

***Mathematics-Based Escape Rooms that Promote Problem Solving***

Robert Powers, *University of Northern Colorado*  
Michelle Morgan King, *Western Governors University*

The purpose of the session is to discuss an experience facilitating an escape room promoting problem solving for first-year mathematics majors during an orientation session. Participants will engage in an escape room scenario and discuss key aspects of creating one.

**Session 14** **St. Charles A**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Individual Session**

***Principles and Practices in Humanizing Secondary Mathematics Teacher Preparation***

Kristin Lesseig, *Washington State University Vancouver*  
 William Hall, *Washington State University*  
 James Owusu Asare, *Washington State University*  
 Tariq Akmal, *Washington State University*

We illustrate our guiding principles for humanizing mathematics teacher education and share how we utilized these principles in designing program activities for prospective secondary mathematics teachers to explore re-humanizing mathematics, specifically with respect to taking an asset-based view of students.

**Session 15** **St. Charles B**  
**Professional Development**  
**Individual Session**

***Toward Advancing Middle School Teachers' Teaching of Proportional Reasoning At Scale: Intelligent and Adaptive Professional Development***

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

We developed a computer-based program with a virtual facilitator affording immediate feedback and responsive interactions to scale up effective professional development programs, particularly on proportional reasoning. Results showed significant differences between the treatment and control groups, evidence of teacher learning.

**Session 16** **Astor Ballroom I**  
**Collaborations and Partnerships**  
**Individual Session**

***Teaching All Students: Instructional Activities That Support Candidates Pedagogical Development for Working with Neurodiverse Students***

Sararose DeVore Lynch, *Slippery Rock University*  
 Barbara Swartz, *West Chester University*

This interactive session engages participants with conceptually- and strength-based focused collaborative instructional activities for methods courses across grade bands and programs (Elementary, Middle Grades, Secondary, and Special Education) to support teacher candidates' development of knowledge for working with neurodiverse students.

**Session 17** **Astor Ballroom II**  
**Practice-Based Experiences for Prospective Teachers**  
**Individual Session**

***Digital Clinical Simulations: Designing to Disrupt Inequitable Practices for Preservice Teachers***

Erin Barno, *Boston University*  
 Gregory Benoit, *Boston University*

The AB platform allows digital simulations to be designed for preservice teachers to practice within short classroom scenarios. The "choose your own path" format allows simulations to be modeled as a "decision tree" to visually support preservice teacher micro moment choices.

**Session 18** **Astor Ballroom III**  
**Professional Development**  
**Individual Session**

***A Typology of the Suggestions Coaches Provide to Teachers***

Julie Amador, *University of Idaho*  
 Cynthia Carson, *University of Rochester*

We present an empirically-based typology for the suggestions coaches provided to mathematics teachers, created from the analysis of more than 720 suggestions across 75 coaching cycles. We share our analytic method and discuss how coaches may consider suggestions.

**Session 19** **St. Louis**  
**Mathematics Education Policy and Program Issues**  
**Individual Session**

***Opportunities for Recruitment, Retention, and Diversification of the Math Teacher Pipeline: A Noyce Case Study***

Richard Velasco, *University of Oklahoma*  
 Dae S Hong, *University of Iowa*

In this session, we share challenges and successes in recruiting prospective Noyce fellows from recruiters' and investigators' perspectives and discuss components that are successful from current and past Noyce fellows as well as their recommendations and feedback for improvement.

**Session 20** **St. Ann**  
**Teaching and Learning with Technology**  
**Individual Session**

***Decomposing Practice through 360 Video of Mathematics Lessons***

Karl W Kosko, *Kent State University*  
 Maryam Zolfaghari, *Kent State University*

This session aims to introduce resources for managing preservice teachers' discussions of viewing 360 videos. We first show how to use 360 videos and then introduce Praxi as a platform to decompose preservice teachers' viewing behaviors in 360 videos.

**Session 21** **Bourbon**  
**Mathematics Content and Curriculum**  
**Individual Session**

***Exploring Questioning Practices Intended to Support Students' Opportunities for Discussing Mathematical Connections During Number Talks***

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

This session explores four types of questions K-12 teachers use to support students in making mathematical connections during Number Talks. We describe how these types of connect questions afford different opportunities to make mathematical ideas explicit for students.

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**Session 22** **Burgundy**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Individual Session**

***Intercultural Knowledge and Competence for Teaching Mathematics: Exploring Elementary Preservice Teachers' Perceptions Over Time***

Jillian M Cavanna, *University of Hartford*

Mathematics teaching that is responsive to diverse student populations and that draws on individual strengths requires intercultural knowledge and competence. This session shares survey and reflection data from elementary preservice teachers over time. Findings offer guidance for designing learning experiences.

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**Session 23** **Toulouse B**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Individual Session**

***The Social Construction of Authorities in an Early Elementary Classroom: Implications for Mathematics Teacher Education***

Daniel Edelen, *Georgia State University*  
Farshid Safi, *University of Central Florida*

This session presents research findings from an interactional ethnographic study in a first-grade classroom that illustrated the social construction of student-based authorities and how classroom teachers position learners during collaborative learning. Implications for mathematics teacher education will be shared.

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**Session 24** **Bienville**  
**Practice-Based Experiences for Prospective Teachers**  
**Individual Session**

***Encouraging Preservice Teachers' Self-Reflection for Teaching Generalizing***

Jennifer A Thompson, *Ohio University*  
Allyson Hallman-Thrasher, *Ohio University*  
Kayla Heacock, *Ohio University*

This session explores how a mathematics-specific evaluation tool can support preservice teachers' self-reflection and intentional planning. We share insights this tool provided on preservice teachers' understanding of teaching generalizing and discuss how to support preservice teachers in promoting students' generalizations.

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**Session 25** **Iberville**  
**Mathematics Pedagogy**  
**Individual Session**

***Empowering Low Self-Confident Math Learners through Improv Teaching***

Jung Colen, *Chadron State College*

We present a mathematics classroom where Mr. K selects a high-level, cognitively-demanding task and facilitates student-centered teaching practices. Throughout the lesson, the teacher leverages student-invented strategies to facilitate Improv Teaching, raise students' self-confidence, and take ownership of their learning.

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**ADVOCACY & EMERGING ISSUES LUNCH****Grand Ballroom A-D****Surviving the Current Political Climate: Identifying Pressures and Advocating for Educators, Students, and Communities**

Now more than ever, mathematics educators and teacher educators need to know about important issues and advocate for students, families, and communities amidst a highly-charged political climate that is often inhumane. In this inaugural Advocacy Luncheon, sponsored by the AMTE Advocacy Committee, we invite leaders from the local NOLA area, representing various advocacy groups, to speak about issues they face and solutions that mathematics teachers and teacher educators can take up when they return to their local communities. The purpose of the luncheon is twofold. First, we will present key issues that intersect with how we prepare future mathematics teachers. Second, we will discuss how to support students to thrive in P-20 mathematics classrooms in light of their humanity and brilliance. An emphasis will be given to issues affecting BIPOC and 2SLGTBQIA students and teachers.

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

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



# OVERVIEW OF THURSDAY AFTERNOON, FEBRUARY 2, 2023

	1:15 PM – 2:15 PM	2:30 PM – 3:30 PM
<b>St. Charles A</b>	26. <i>Supporting the Development of Mathematics Teacher Educator Practice: Using Community, Artifacts, and Theory</i> - Hillman & Kastberg	39. <i>Teaching for PROWESS: The Synergy of Active Learning and Students' Deep Engagement in Mathematical Thinking</i> - Judson-Garcia & Sternberg
<b>St. Charles B</b>	27. <i>Professional Development (Report Session)</i>	40. <i>Mathematics Pedagogy (Report Session)</i>
<b>Astor Ballroom I</b>	28. <i>The Redesign of Mathematics Problems: A Powerful Context for Students and Teachers</i> - Edson, Phillips, Slanger-Grant & Going	41. <i>Choosing an AMTE Publication to Showcase Your Scholarly Work: Opportunity for Feedback</i> - AMTE Publications Division
<b>Astor Ballroom II</b>	29. <i>Cultivating Teacher Leadership by Growing and Supporting Teacher Agency and Collaboration in Networked Improvement Communities</i> - Campbell, Bolyard & Freeland	42. <i>Battles of Belonging: Voices of Underserved Students</i> - Sanchez, Edwards & Flagg
<b>Astor Ballroom III</b>	30. <i>Coaches and Teachers Navigating Tensions and Resonances in Shifting Toward More Equitable Mathematics Teaching</i> - Litke, Wilson & Akridge	43. <i>Assessing Teacher Noticing to Design for Future Learning and Understand Change</i> - Pinilla & Prough
<b>Grand Ballroom A</b>		44. <i>Mathematics Content and Curriculum (Report Session)</i>
<b>Grand Ballroom B</b>		45. <i>Practice-Based Experiences for Prospective Teachers (Report Session)</i>
<b>St. Louis</b>	31. <i>Early Career Award Winner: Unsettling Norms, Dismantling Barriers, and Healing My Wounds: Recognizing and Disrupting White, Ableist Normativity in Mathematics Education</i> - Yeh	46. <i>Investigating Intercultural Competencies in an Informal Professional Development</i> - Mbewe
<b>St. Ann</b>	32. <i>Community, Curiosity, and Criticality in Justice Oriented Mathematics Teaching</i> - Koestler, Thompson, Robinson, Thanheiser & Han	47. <i>Engaging in Inter-Institutional Research Related to Cultivating Positive Mathematics Identities</i> - Johnson, Waddell Jr, Woods & Bay-Williams
<b>Bourbon</b>	33. <i>Collaborating with Districts to Modernize Secondary Mathematics: Lessons from the Launch Years Leadership Network</i> - Steele	48. <i>Taking Up Feedback: Preservice Teachers' Use of Formative Feedback in Simulation Contexts</i> - Boerst, Shaughnessy, Garcia & Blunk
<b>Burgundy</b>	34. <i>Exploring Practice Based Approaches to Developing Mathematical Knowledge for Teaching Proof</i> - Graif	49. <i>The Professionalization of Teaching: Mathematics Teachers as Mathematics Teacher Educators</i> - McKie & Anderson
<b>Toulouse A</b>	35. <i>Critically Examining Mathematics Classrooms Cases to Disrupt Disproportionate Representation in Special Education</i> - Gonzalez & Moldavan	50. <i>Paired Placement Clinical Residency Model: Developing Secondary Prospective Mathematics Teachers' Equitable Teaching Practices (Featured MTEP Session)</i> - Strutchens, Ratliff & Barlow
<b>Toulouse B</b>	36. <i>Using Rehearsal Debriefs with Experienced Teachers to Negotiate an Understanding of an Ambitious Teaching Practice</i> - Stockero, Freeburn, Postma, Alam, Leatham, Peterson & Van Zoest	51. <i>Engaging Prospective Secondary Teachers in Learning to Teach with Technology: Rehearsals with Mathematical Action Technologies</i> - Smucker, Lim, Huang, Parrish, Burns & Lischka
<b>Bienville</b>	37. <i>Bridging Theory and Practice: Intersecting Standards for Mathematical Practice and Equitable Mathematics Teaching Practices</i> - Wrightsman & Ellis	52. <i>Student Teacher Interrupted: The Impact of the Covid-19 Pandemic on Pre-Service Teachers</i> - Marin
<b>Iberville</b>	38. <i>Productive Struggle Addressing Unfinished Learning of Fraction Knowledge in a "Teaching Elementary Mathematics" Class</i> - Burns & McCarthy	53. <i>Watering Outside the Lines: Implementation and Research of a Modeling Task with Prospective Secondary Teachers</i> - Bennett & Neihaus

**Session 26** **St. Charles A**  
**Development of Mathematics Teacher Educators**  
**Discussion Session**

***Supporting the Development of Mathematics Teacher Educator Practice: Using Community, Artifacts, and Theory***

Susan L Hillman, *Saginaw Valley State University*  
 Signe Kastberg, *Purdue University*

Supporting MTEs' professional growth through creating learning spaces with structures for sustained changes in pedagogy and constraints on changing practice are discussed. Examples from a learning space of studying MTE written feedback to support pedagogical concept development illustrate these structures.

**Session 27** **St. Charles B**  
**Professional Development**  
**Report Session**

***An Exploratory Study of the Influence of Professional Development on Mathematics Teachers' Views of Mistakes***

Angela T Barlow, *University of Central Arkansas*  
 Lucy Anna Watson, *Belmont University*  
 Elizabeth Kathryn Barlow, *Auburn University*

We present case studies of two elementary mathematics teachers with opposing implicit beliefs as they engaged in professional development focused on the role of mistakes in the mathematics classroom. Differences in the resulting classroom practices will be discussed.

***Online Professional Development to Decompose and Productively Disrupt Teachers' Engagement in Eliciting and Interpreting Student Thinking***

Valerie Klein, *Drexel University*  
 Anthony Matranga, *California State University San Marcos*  
 Jason Silverman, *Drexel University*

We will share our work with teachers who participated in an online professional development. We explore how the work the teachers did in this space supported them to surface habits that they were not aware of that impact instruction.

***Using Proximal Measures to Assess Learning in Professional Development***

Yasemin Copur-Gencturk, *University of Southern California*  
 In this session, we will describe the approach we took to developing and using assessment items designed to be well-aligned to a professional development experience. We contrast measures of teachers' learning with the proximal assessment items versus with distal measures.

**Session 28** **Astor Ballroom I**  
**Mathematics Content and Curriculum**  
**Individual Session**

***The Redesign of Mathematics Problems: A Powerful Context for Students and Teachers***

Alden J Edson, *Michigan State University*  
 Elizabeth Phillips, *Michigan State University*  
 Yvonne E Slanger-Grant, *Michigan State University*  
 Taren Going, *Michigan State University*

This session focuses on the enactment of how redesigned mathematics problems can promote both equity and mathematics. We highlight the affordances in terms of teaching and learning of mathematics, and how the tasks can be used in professional learning settings.

**Session 29** **Astor Ballroom II**  
**Professional Development**  
**Individual Session**

***Cultivating Teacher Leadership by Growing and Supporting Teacher Agency and Collaboration in Networked Improvement Communities***

Matthew P Campbell, *West Virginia University*  
 Johnna Bolyard, *West Virginia University*  
 Sean P Freeland, *West Virginia University*

We share learnings from a statewide networked improvement community focused on secondary mathematics and its impact on participants' identities and positioning as leaders, and on how schools, districts, and other initiatives can enable and uplift a system of teacher leadership.

**Session 30** **Astor Ballroom III**  
**Professional Development**  
**Individual Session**

***Coaches and Teachers Navigating Tensions and Resonances in Shifting Toward More Equitable Mathematics Teaching***

Erica Litke, *University of Delaware*  
 Jonee Wilson, *North Carolina State University*  
 Samantha Akridge, *University of Delaware*

This session draws on pilot work with mathematics coaches and teachers on a project developing equity oriented instructional practices. We share points of tension and promise, focusing on how coaches and teachers navigate these, and consider implications for mathematics teacher educators.



**Session 31**

St. Louis

**AMTE 2022 Early Career Award Winner*****Unsettling Norms, Dismantling Barriers, and Healing My Wounds: Recognizing and Disrupting White, Ableist Normativity in Mathematics Education***Cathery Yeh, *The University of Texas at Austin*

In this talk, Cathery will share her work to identify and unsettle taken for granted ideologies of normal within mathematics education as a teacher educator and researcher and what she has (un)learned working in school partnerships, teacher education, and with community-based organizations. She draws from Critical Race Disability Studies, Dysfunctional Ecology, and social movement theory as frameworks to interrogate constructed ideas of normalcy, intelligence, interventions, and excellence that lead to differential access and power within teacher education and mathematics education.

**Session 32**

St. Ann

**Equity, Social Justice, and Mathematics Teacher Education Discussion Session*****Community, Curiosity, and Criticality in Justice Oriented Mathematics Teaching***

Courtney Koestler, *Ohio University*  
 Jennifer A Thompson, *Ohio University*  
 Molly L Robinson, *Portland State University*  
 Eva Thanheiser, *Portland State University*  
 Simon Byeonguk Han, *Portland State University*

We explore the roles that community, curiosity, and criticality play in our work with elementary mathematics teachers and children. Mathematics teacher educators will have opportunities to collaborate in examining resources we have used in our project and provide feedback.

**Session 33**

Bourbon

**Collaborations and Partnerships Discussion Session*****Collaborating with Districts to Modernize Secondary Mathematics: Lessons from the Launch Years Leadership Network***Mike Steele, *National Science Foundation*

The Launch Years Mathematics Leadership Network is a collaborative effort of 11 mathematics education organizations to support the modernization of secondary and early college mathematics. This session shares tools from the network to support district and state change efforts.

**Session 34**

Burgundy

**Practice-Based Experiences for Prospective Teachers Discussion Session*****Exploring Practice Based Approaches to Developing Mathematical Knowledge for Teaching Proof***Foster Graif, *Bethel University*

Building off of the mathematical knowledge for teaching proof framework (Lesseig, 2011), this session explores results around opportunities intended to develop this knowledge with teacher candidates. In particular, participants can expect a discussion around a practice-based approach.

**Session 35**

Toulouse A

**Mathematics Pedagogy Discussion Session*****Critically Examining Mathematics Classrooms Cases to Disrupt Disproportionate Representation in Special Education***

Monica Lyn Gonzalez, *East Carolina University*  
 Alesia Mickle Moldavan, *Georgia Southern University*

Participants will explore a mathematics classroom case that highlights the intersections of race and perceived ability that impacts disproportionate representation in special education. Opportunities will be made to revise the case to advance conversations in teacher education about racial biases.

**Session 36**

Toulouse B

**Professional Development Individual Session*****Using Rehearsal Debriefs with Experienced Teachers to Negotiate an Understanding of an Ambitious Teaching Practice***

Shari L Stockero, *Michigan Technological University*  
 Ben Freeburn, *Western Michigan University*  
 Jessica L Postma, *Western Michigan University*  
 Nishat Binte Alam, *Michigan Technological University*  
 Keith R Leatham, *Brigham Young University*  
 Blake E Peterson, *Brigham Young University*  
 Laura R Van Zoest, *Western Michigan University*

We use rehearsal debrief discussion excerpts to consider how rehearsals with experienced teachers might be planned and structured to position the debrief as a mechanism for mathematics teacher educators and teachers to negotiate an understanding of a complex teaching practice.

**Session 37** **Bienville**  
**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 Ellis, *Portland State University*

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

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**Session 38** **Iberville**  
**Mathematics Content and Curriculum  
Discussion Session**

***Productive Struggle Addressing Unfinished Learning of  
Fraction Knowledge in a "Teaching Elementary  
Mathematics" Class***

Barbara A Burns, *Canisius College*  
Dianne McCarthy, *Buffalo State College*

This session discusses work with college students in a "mathematics for elementary teachers" course who have unfinished learning with fraction concepts and computation. We designed tasks to engage these students in productive struggle in hopes of developing their fraction understandings.

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**Session 39** **St. Charles A**  
**Mathematics Pedagogy**  
**Individual Session**

***Teaching for PROWESS: The Synergy of Active Learning and Students' Deep Engagement in Mathematical Thinking***

Julia Judson-Garcia, *Chandler-Gilbert Community College*  
 Heather Sternberg, *Chandler-Gilbert Community College*

Our presentation will immerse the participants in an active learning class while providing opportunities for deep engagement in mathematical understandings of variables, parameters, and constants. We will discuss and reflect on ways in which participants can create similar experiences.

**Session 40** **St. Charles B**  
**Mathematics Pedagogy**  
**Report Session**

***An Exploratory Study on the Relationships Between Beliefs, Anxieties, and Talk Moves in Preservice Teachers***

Sam Rhodes, *Georgia Southern University*  
 Montana Smithey, *Georgia Southern University*

In this session, we will share the results of a mixed-methods study in which we explored the relationships between mathematics anxiety and instructional beliefs, and the talk moves that elementary pre-service teachers used when engaging with student work samples.

***Supporting Prospective Secondary Teachers Selecting and Designing Mathematical Tasks with Opportunities for Reasoning and Proving***

Merav Weingarden, *University of New Hampshire*  
 Orly Buchbinder, *University of New Hampshire*

We suggest the use of the Opportunities for Reasoning and Proving Framework to support prospective teachers in selecting and designing mathematical tasks with opportunities for reasoning and proving and to promote their communication about the meaning of reasoning and proving.

***Trust as a Lens for Understanding Preservice Teachers' Struggles to Implement Challenging Mathematics Tasks***

Tracy E Dobie, *University of Utah*  
 Naomi Jessup, *Georgia State University*  
 Erin Smith, *The University of Southern Mississippi*  
 Jennifer Ward, *Kennesaw State University*

Our cross-institutional study describes elementary PSTs' struggles with implementing challenging mathematics tasks during field placements. Findings illuminate how trust can be used as a lens to understand challenges of teacher control, perceived student ability, and concerns about student experiences.

**Session 41** **Astor Ballroom I**  
**AMTE Committee Session**

***Choosing an AMTE Publication to Showcase Your Scholarly Work: Opportunity for Feedback***

AMTE Publications Division

This session allows potential authors to receive feedback for the improvement of manuscripts for AMTE's publications: Mathematics Teacher Educator, Contemporary Issues in Technology and Teacher Education-Math, Connections, and the Professional Book Series, focusing on clarification of expectations for publication.

**Session 42** **Astor Ballroom II**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Discussion Session**

***Battles of Belonging: Voices of Underserved Students***

Wendy B Sanchez, *Kennesaw State University*  
 Belinda Pickett Edwards, *Kennesaw State University*  
 Darolyn A Flagg, *Kennesaw State University*

We share prospective teachers' experiences with "not belonging," including feeling "invisible" and "not smart" to bring awareness to systemic forms of inequalities that underrepresented students experience, along with possible strategies to address them.

**Session 43** **Astor Ballroom III**  
**Professional Development**  
**Discussion Session**

***Assessing Teacher Noticing to Design for Future Learning and Understand Change***

Robyn Kristine Pinilla, *Southern Methodist University*  
 Sam Prough, *University of Delaware*

We describe a novel approach to collecting elementary teacher noticing data as one component of an ongoing professional learning experience. Participants will engage in the noticing activity and discuss how this approach can enhance collaborative career long learning for mathematics teachers.

**Session 44**  
**Mathematics Content and Curriculum**  
**Report Session**

**Grand Ballroom A**

***A Framework for Valuing Thinking About  $.999\dots=1$***

Joshua Hertel, *University of Wisconsin-La Crosse*

This presentation will focus on a framework for valuing thinking about  $.999\dots=1$ . Drawing on the Knowledge in Pieces perspective, the framework helps identify ideas brought to the problem, provide tools for probing understanding, and offer resources for pedagogical action.

***Prospective Teachers' Coordination of Fractions on Number Lines and their Analyses of Student Video Episodes***

Hiroko K Warshauer, *Texas State University*  
Hwa Young Lee, *Texas State University*

In this session, we present how focusing on prospective teachers' elements of frames of reference and utilizing a video activity were helpful for us as teacher educators (and researchers) better understand their fraction and number line understandings

***Toward a More Relational Understanding of Fraction: The Case of Hannah***

Jinqing Liu, *University of California Irvine*  
Yuling Zhuang, *Emporia State University*

This case study illustrates how a preservice teacher developed her relational understanding of the common denominator strategy through engaging in collective argumentation. Through Toulmin's lens, we will provide multiple examples to demonstrate the progress of a preservice teacher's relational understanding.

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**Session 45**  
**Practice-Based Experiences for Prospective Teachers**  
**Report Session**

**Grand Ballroom B**

***Examining Prospective Teachers' Paired Talk Moves During Rehearsals***

Michele Cudd, *Morehead State University*

Rehearsals are one approach for prospective teachers to develop the practice of facilitating mathematical discourse. Across three rehearsals, the individual talk moves of three PTs were coded and analyzed, this report focuses on examining patterns among talk moves used together.

***Task Design: Matching Tasks with Discursive Goals in Preservice Teacher Learning***

Calli Shekell, *Educational Testing Service*  
Jamie N Mikeska, *Educational Testing Service*  
Heather Howell, *Educational Testing Service*

In this session we'll share findings on how preservice teachers engaged with two versions of a simulated discussion task that was designed to support them as they learn to facilitate discussions focused on argumentation. We'll also discuss implications for teacher education.

***The Use of In the Moment Discussions During Launch Rehearsals***

Barbara King, *Florida International University*  
Carmen Smith, *The University of Vermont*

In this study, we analyzed in the moment discussions during rehearsals and post-rehearsal reflections. We found that preservice teachers referenced in the moment discussions more frequently in reflections if feedback was framed as highlighting a productive move rather than a suggestion.

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**Session 46**  
**Development of Mathematics Teacher Educators**  
**Discussion Session**

**St. Louis**

***Investigating Intercultural Competencies in an Informal Professional Development***

Rose Mbewe, *Purdue University*

Global Social Justice in Mathematics Education, an informal professional development virtual experience on which this study is drawn. I analyzed evidence of intercultural competence drawn from participants' reflections as they engaged with tasks that integrated mathematics and social justice issues.

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**Session 47** **St. Ann**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Discussion Session**

***Engaging in Inter-Institutional Research Related to Cultivating Positive Mathematics Identities***

Cheryll Crowe Johnson, *Asbury University*  
Glenn H Waddell Jr, *University of Nevada, Reno*  
Dawn M Woods, *Oakland University*  
Jennifer Bay-Williams, *University of Louisville*

Across institutions, we implemented a common Identity Survey and research design. Join us to explore the data, talk about the design, and consider participating in what we hope is an expanding effort to address Standard C.4.2.

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**Session 48** **Bourbon**  
**Mathematics Pedagogy**  
**Individual Session**

***Taking Up Feedback: Preservice Teachers' Use of Formative Feedback in Simulation Contexts***

Tim Boerst, *University of Michigan*  
Meghan Shaughnessy, *Boston University*  
Nicole Garcia, *University of Michigan*  
Merrie L Blunk, *University of Michigan*

We report on the use of live face-to-face teaching simulations focused on eliciting and interpreting student thinking. We share how the simulation functions as a formative assessment and report on how preservice teachers understood and used feedback in subsequent teaching.

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**Session 49** **Burgundy**  
**Professional Development**  
**Individual Session**

***The Professionalization of Teaching: Mathematics Teachers as Mathematics Teacher Educators***

Kelly Alexandra McKie, *University of Ottawa*  
Robin Keturah Anderson, *North Carolina State University*

This session presents a model of mathematics teacher learning that considers mathematics teachers as both participants and leaders in professional learning. Collaboratively we will explore the different characteristics and conditions that interact and support the emergence of teacher learning.

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**Session 50** **Toulouse A**  
**Practice-Based Experiences for Prospective Teachers**  
**Featured MTEP Individual Session**

***Paired Placement Clinical Residency Model: Developing Secondary Prospective Mathematics Teachers' Equitable Teaching Practices***

Marilyn E Strutchens, *Auburn University*  
Brea Ratliff, *Auburn University*  
Elizabeth Kathryn Barlow, *Auburn University*

Participants will learn about tools and protocols used during the paired placement clinical residency experience to aid prospective teachers in developing equitable teaching practices.

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**Session 51** **Toulouse B**  
**Teaching and Learning with Technology**  
**Discussion Session**

***Engaging Prospective Secondary Teachers in Learning to Teach with Technology: Rehearsals with Mathematical Action Technologies***

Karoline Smucker, *Eastern Oregon University*  
Dexter Lim, *Tusculum University*  
WenYen Huang, *State University of New York at New Paltz*  
Christopher W Parrish, *University of South Alabama*  
Barbara A Burns, *Canisius College*  
Alyson E Lischka, *Middle Tennessee State University*

Attendees will consider the added nuances involved in prospective teachers learning to teach with rehearsal tasks through mathematical action technology that included amplifiers and reorganizers. We will share our experiences and discuss rehearsal structures that support teacher learning.

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**Session 52**  
**Mathematics Education Policy and Program Issues**  
**Individual Session**

**Bienville**

**Student Teacher Interrupted: The Impact of the Covid-19**  
**Pandemic on Pre-Service Teachers**

Katherine Ariemma Marin, *University of Louisville*

This session explores the findings and implications of a research study investigating the impact of the Covid-19 pandemic on the experiences of pre-service in teacher education and their entrance into the profession.

**Session 53**  
**Mathematics Content and Curriculum**  
**Individual Session**

**Iberville**

**Watering Outside the Lines: Implementation and**  
**Research of a Modeling Task with Prospective Secondary**  
**Teachers**

Amy Been Bennett, *University of Nebraska-Lincoln*  
Aubrey Neihaus, *Wichita State University*

Participants will engage in an authentic mathematical modeling task and discuss important task design features and implementation strategies. We will share findings and analyses from implementations with prospective secondary teachers in both math methods and content courses.

**THURSDAY, FEBRUARY 2, 2023**

**3:30 PM - 4:30 PM**



**POSTER SESSION & REFRESHMENTS**

**GRAND BALLROOMS C & D**

**Session 54**

Join us for the 8<sup>th</sup> 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
<b>3:30 PM – 4:30 PM</b>	<b>Poster presentations</b>
4:45 PM	Presenters remove posters



Refreshments are available in the Grand Gallery. Visit <http://bit.ly/AMTEMenuInfo> or scan the QR code for more information about menu items.

# OVERVIEW OF POSTER SESSION, THURSDAY, FEBRUARY 2, 2023

3:30 PM - 4:30 PM		
<b>Grand Ballroom C/D</b>	<i>P01. A Five Year Look at Noyce Scholars Task Selection and Rubric Score on the edTPA - Brown, Cayton, Thompson</i>	<i>P12. Examining Student Sensemaking on Multistep Problems - Matney</i>
	<i>P02. A Peek Inside: Using Photovoice to Explore Mathematics with youth in the Pacific Northwest - Heikila</i>	<i>P13. Exploring Circle Circumference: Beyond Opportunities to Learn Mathematics Content for Prospective Teachers - Bui</i>
	<i>P03. Approaches to Integration: An Analysis of Multidiscipline Methods Course Syllabi - Sturgill, Pak, Hummer</i>	<i>P14. Exploring Elementary Schools Children's Fractional Knowledge Within Visual Statical Models - Zolfaghari</i>
	<i>P04. A Systematic Literature Review on Factors of Stress, Burnout, and Job Satisfaction of Secondary Teachers - Gooden, Smith</i>	<i>P15. Exploring the Impact of Multicultural Mathematics Tasks on Preservice Teachers' Multicultural Mathematics Dispositions, Identity, and Self-Efficacy - Amedu, Ellis</i>
	<i>P05. Becoming an Elementary Math Teacher: Exploring Narratives - Banks</i>	<i>P16. Exploring the mastery experiences of female elementary mathematics teachers influences toward teaching mathematics - Ballew, Nguyen</i>
	<i>P06. Black Teachers' Trajectories: Stories of Early Learning, Navigating Inequities, and Teaching Elementary Mathematics Today - Myers, Auslander</i>	<i>P17. Facilitating Secondary Preservice Mathematics Teachers' Conceptualization of Teaching the Four Big Ideas of Mathematical Modeling - Arnold, Burroughs</i>
	<i>P07. Developing Agency and Authentic Teaching Practices: Prospective Mathematics Teachers' Participation in Informal STEM Experiences - Kent, McComas, Dingman</i>	<i>P18. How do Preservice Teachers' Mathematics Learner Identities Influence their Views of Students' Mathematical Capabilities? - Caviness</i>
	<i>P08. Developing Preservice Teachers' Ability to Explain Common Algorithms - Creager</i>	<i>P19. Impact of Teaching Intervention of Functional Relationships in Preservice Secondary Mathematics Teacher - Kharel</i>
	<i>P09. Dis/connection between Mathematics and Special Education Research: Implications for Teaching Elementary Students with Learning Dis/abilities - Burke-Holliday, Yokooji</i>	<i>P20. Implementing a Scaffolded Set of Approximations of Practice for Secondary Preservice Teachers: Initial Pilot Findings - Howell, Mikeska</i>
	<i>P10. Elementary Mathematics Preservice Teachers' Responses to Equity Scenarios: Employing Tools of Whiteness or Allyship? - McCloskey</i>	<i>P21. Interns' Perceptions of Policies and Practices that Support Black Mathematics Teacher Candidates' Recruitment and Retention - Harris</i>
	<i>P11. Embodying Voice and Choice in Mathematics and Science Teacher Preparation - Apraiz, Evans</i>	<i>P22. Juggling to Thrive: Motherscholars Becoming Mathematics Teacher Educators - Rainwater, Hale, Zapata</i>
	<i>P23. K-8 Preservice Teachers' Numeracy (Number Sense) Knowledge - Nguyen, Chamblee, Maher</i>	<i>P35. Supporting Undergraduate Mathematics Instructors Through Intentional Professional Learning - Nuzzi, Bonaccorso</i>

<b>3:30 PM - 4:30 PM</b>	
<i>P24. Leverage Elementary Teachers' Interdisciplinary Teaching Experience to Diversify the Mathematics Teacher Pipeline - Lee</i>	<i>P36. Systematic Literature Review of Culturally Responsive Teaching and Culturally Relevant Pedagogy in Secondary Mathematics Education - Smith, Gooden</i>
<i>P25. Parent Tutoring Program: Enhancing Preservice Teachers' Pedagogy and Growth Mindset - Pham, Bonner</i>	<i>P37. Teacher education students' perspectives on equity and mathematics teaching - McGraw, Jarnutowski</i>
<i>P26. Preservice Teachers' Learning Goals: Challenges Faced and Questions Posed - Menke</i>	<i>P38. The Language of Explanations: How Students, Their Parents, and Their Teacher Explain Multiplication Solutions - Womack-Adams, Walkowiak</i>
<i>P27. Preservice Teachers Unpacking Children's Probabilistic Thinking: Bringing Children on Campus - Callus, McNally</i>	<i>P39. Types of Questions Teachers Ask to Engage Students in Making Sense of a Student Contribution - Alam</i>
<i>P28. Promotion of Productive STEM Identity in Underrepresented/Minoritized Secondary Mathematics Students - Habersach, Slavitt</i>	<i>P40. Attending to Details When Building Elementary Preservice Teachers' Understanding of Area Concepts - Hughes, Steinhorsdottir</i>
<i>P29. Prospective Teachers' Productive Struggle in a Mathematics Method Course - Kamlue</i>	<i>P41. Using Simulations to Provide Secondary Mathematics Teacher Candidates with Opportunities to Build Equitable Teaching - Thomas</i>
<i>P30. Providing Equitable Access to Mathematics Educators through a Collaborative University- School Partnership - Williams, Coleman</i>	<i>P42. Video Tagging as a Support for Learning to Lead Video Clubs - Walton</i>
<i>P31. Simulation Based Inference Courses and Preservice Teachers' Perception of Children's Thinking - Callus, McNally</i>	<i>P43. Which Scale Should We Use to Measure the Right Angle? - Hardison, Bui</i>
<i>P32. State Standards Deviations from the Common Core - Schmidt</i>	<i>P44. Examining Elementary Preservice Teachers' Responsive Problem Posing - Rich, Pate</i>
<i>P33. Supporting a Teacher Residency Program in Rural Communities - Harbour, Hodges</i>	<i>P45. Writing to Learn: Elementary Preservice Teachers' Mathematics and Writing Self Efficacy - Pate, Rich</i>
<i>P34. Supporting Mathematics Mentor Teachers through Collaborative Experiences - Christensen, Cannon</i>	



**Session 54****Grand Ballroom C/D****AMTE Poster Session****P01. A Five Year Look at Noyce Scholars Task Selection and Rubric Score on the edTPA**

Abigail Brown, *East Carolina University*  
 Charity Cayton, *East Carolina University*  
 Tony Thompson, *East Carolina University*

This poster summarizes our analysis of Noyce Scholars mathematical tasks from Task 1 of the edTPA over a five year period. Analysis includes potential level of cognitive demand compared to individual scores on Rubric 1: Planning for Mathematical Understandings.

**P02. A Peek Inside: Using Photovoice to Explore Mathematics with youth in the Pacific Northwest**

Tara Heikila, *Washington State University Vancouver*

Identity is significant for student learning. The purpose of this pilot study is to better understand middle school students' perspectives on mathematics and explore their mathematical identity using the methodology of photovoice.

**P03. Approaches to Integration: An Analysis of Multidiscipline Methods Course Syllabi**

Derek Joseph Sturgill, *University of Wisconsin-Stout*  
 Byungeun Pak, *Utah Tech University*  
 Jenifer Hummer, *West Chester University*

Students' engagement in science, technology, engineering, and mathematics activities can support their understanding of mathematics. Thus, to better understand how preservice teachers are prepared to implement integrated lessons, this poster shares how syllabi for multi-discipline teaching methods courses approach integration.

**P04. A Systematic Literature Review on Factors of Stress, Burnout, and Job Satisfaction of Secondary Teachers**

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

Teachers are leaving the profession in an expedited rate resulting in a nationwide teacher shortage. This systematic literature review synthesizes empirical literature to identify current characteristics or factors related to stress, job satisfaction and burnout for secondary general education teachers.

**P05. Becoming an Elementary Math Teacher: Exploring Narratives**

Stephanie Banks, *Plymouth State University*

This research examines how elementary pre-service and new in-service teachers perceive their development of math learning and teaching. Experiences, relationships, and conditions that participants viewed as influential in developing their capacities to learn and teach elementary mathematics are considered.

**P06. Black Teachers' Trajectories: Stories of Early Learning, Navigating Inequities, and Teaching Elementary Mathematics Today**

Kayla Daffinson Myers, *University of West Georgia*  
 Susan Swars Auslander, *Georgia State University*

This poster presentation tells a story of identity formation and equitable teaching practices, harmonizing Black teachers' early histories as learners and doers of mathematics, and how those early experiences have shaped their evolving identity as learners and teachers of mathematics.

**P07. Developing Agency and Authentic Teaching Practices: Prospective Mathematics Teachers' Participation in Informal STEM Experiences**

Laura Brinker Kent, *University of Arkansas*  
 Kim McComas, *University of Arkansas*  
 Shannon Dingman, *University of Arkansas*

This session describes the informal STEM experiences of preservice mathematics teachers as part of a project designed to develop authentic practices and agency. Their own reflections and impact on their students are highlighted in the poster presentation.

**P08. Developing Preservice Teachers' Ability to Explain Common Algorithms**

Mark A Creager, *University of Southern Indiana*

This poster describes the outcomes of a project used to develop the core teaching practice of explaining and modeling content for elementary education majors that took place during a first-year content with 43 participants.

**P09. Dis/connection between Mathematics and Special Education Research: Implications for Teaching Elementary Students with Learning Dis/abilities**

Meg Burke-Holliday, *Punahou School*  
 Tomoko Burke Yokooji, *Punahou School*

What are the best practices for teaching mathematics for learning dis/abled students? This study supports previous findings indicating a disconnect between math and special education research that greatly impacts the opportunities for learning dis/abled students to receive high-quality mathematics instruction.

**P10. Elementary Mathematics Preservice Teachers' Responses to Equity Scenarios: Employing Tools of Whiteness or Allyship?**

Andrea McCloskey, *Pennsylvania State University*

This poster session will share results of a study that identified tools of whiteness (Picower, 2009) as employed by preservice teachers when interacting with equity-based curricular materials at the conclusion of an elementary mathematics methods course.

**P11. Embodying Voice and Choice in Mathematics and Science Teacher Preparation**

Kristen Apraiz, *University of Florida*  
Gayle Nelson Evans, *University of Florida*

Join us in a discussion about how we position our secondary prospective teachers to build an awareness of equitable practices through experiencing voice and choice as students in our teacher preparation program.

**P12. Examining Student Sensemaking on Multistep Problems**

Gabriel Matney, *Bowling Green State University*

We describe a qualitative study conducted with 280 grade 4 students to investigate their sensemaking of a multistep word problems designed for fourth-grade learners. We share implications of this work for math teacher educators.

**P13. Exploring Circle Circumference: Beyond Opportunities to Learn Mathematics Content for Prospective Teachers**

Mai Bui, *Texas State University*

In this poster session, I will share a chain of activities designed for prospective teachers to explore the circle's circumference formula and go beyond that, by providing opportunities for them to develop necessary knowledge and skills to teach mathematics effectively.

**P14. Exploring Elementary Schools Children's Fractional Knowledge Within Visual Statical Models**

Maryam Zolfaghari, *Kent State University*

This poster reports how children's interaction with visual models corresponds with their understanding of early knowledge of fractions. Two visual models including rectangle and circle were used to examine children's fragmenting knowledge, as one of the preliminary knowledge of fractions.

**P15. Exploring the Impact of Multicultural Mathematics Tasks on Preservice Teachers' Multicultural Mathematics Dispositions, Identity, and Self-Efficacy**

Jerome Z Amedu, *North Carolina State University*  
Ruby Ellis, *North Carolina State University*

This investigated the impact of including multicultural mathematics tasks in an undergraduate, mathematics education course on students' multicultural mathematics dispositions, self-efficacy and identity related to teaching mathematics, and their perceived impact on their future students' mathematics identities.

**P16. Exploring the mastery experiences of female elementary mathematics teachers influences toward teaching mathematics**

Baye Baye Ballew, *Saint Leo University*  
Giang-Nguyen T Nguyen, *University of West Florida*

This research focuses on the lived experience of female mathematics teachers' influences on their beliefs and attitudes towards their mathematics instruction. The purpose of this research is to explore the lived experiences to describe their self efficacy in teaching mathematics.

**P17. Facilitating Secondary Preservice Mathematics Teachers' Conceptualization of Teaching the Four Big Ideas of Mathematical Modeling**

Elizabeth Arnold, *Colorado State University*  
Elizabeth Burroughs, *Montana State University*

We ground the classroom practice of modeling in four big ideas about mathematical modeling. We describe these big ideas, illustrate ways to facilitate secondary preservice teachers' conceptualization of them, and share how preservice teachers reflected on opportunities to teach modeling.

**P18. How do Preservice Teachers' Mathematics Learner Identities Influence their Views of Students' Mathematical Capabilities?**

Stephen Caviness, *Syracuse University*

How do the mathematics identities of preservice teachers influence their developing pedagogical practice? Data from an elementary math methods course was analyzed to look for connections between mathematics identity and preservice teachers' views of elementary students' mathematical capabilities.

**P19. Impact of Teaching Intervention of Functional Relationships in Preservice Secondary Mathematics Teacher**

Radhika Pathak Kharel, *Illinois State University*

This study examined the impact of teaching intervention of functional relationships in preservice secondary mathematics teachers. The findings indicated that preservice teachers were able to identify whether or not the given relations or graphs represented a function after teaching intervention.

**P20. Implementing a Scaffolded Set of Approximations of Practice for Secondary Preservice Teachers: Initial Pilot Findings**

Heather Howell, *Educational Testing Service*  
Jamie N Mikeska, *Educational Testing Service*

In this poster, we share mathematics teacher educators' and preservice teachers' overall perceptions about a systematically scaffolded set of approximations of practice in secondary mathematics methods courses. We also detail what both groups felt preservice teachers learned.

**P21. Interns' Perceptions of Policies and Practices that Support Black Mathematics Teacher Candidates' Recruitment and Retention**

Micaela Yoriko Harris, *Vanderbilt University*

Given the white logics and frames of teacher education programs that are entrenched in whiteness, this case study explored the extent to which intersectional and equitable policies and practices are in place to recruit and retain Black mathematics teachers.

**P22. Juggling to Thrive: Motherscholars Becoming Mathematics Teacher Educators**

Tabatha Rainwater, *The University of Tennessee, Knoxville*  
Jessica James Hale, *Kennesaw State University*  
Franca Iszamar Zelaya Zapata, *The University of Tennessee, Knoxville*

Poster session will highlight the assets of mothers as doctoral students in mathematics teacher education. We will provide best practices for supporting marginalized motherscholars in Mathematics Teacher Educator Programs. Presentation by motherscholars in PhD programs.

**P23. K-8 Preservice Teachers' Numeracy (Number Sense) Knowledge**

Ha Nguyen, *California State University, Dominguez Hills*  
Gregory Chamblee, *Georgia Southern University*  
Eryn Michelle Maher, *Georgia Southern University*

We share results across three semesters of K-8 preservice teachers' numeracy understanding as measured by a Georgia Numeracy Project assessment. Student work samples from a fractions and percent task are presented and recommendations for future content and research discussed.

**P24. Leverage Elementary Teachers' Interdisciplinary Teaching Experience to Diversify the Mathematics Teacher Pipeline**

Yi-Jung Lee, *University of Arkansas*

In this study, we interviewed 14 elementary student teachers to explore the factors that motivated them to teach elementary mathematics in the integration of STEM education. We also discussed how their interdisciplinary experience contributed to the commitment.

**P25. Parent Tutoring Program: Enhancing Preservice Teachers' Pedagogy and Growth Mindset**

Anh Pham, *University of Texas at San Antonio*  
Emily Bonner, *University of Texas at San Antonio*

The program aims to enhance the teaching and learning of elementary mathematics and pedagogy through innovative, culturally responsive practices. This session presents a study about preservice teachers who have participated in the program regarding mathematics content, pedagogy, and growth mindset.

**P26. Preservice Teachers' Learning Goals: Challenges Faced and Questions Posed**

Jenna Menke, *Ball State University*

Preservice teachers face challenges in learning to construct meaningful learning goals that detail the conceptual understandings they want students to develop. This session details those challenges and presents questioning strategies for helping preservice teachers develop their abilities to write goals.

**P27. Preservice Teachers Unpacking Children's Probabilistic Thinking: Bringing Children on Campus**

Laura Callis, *Curry College*  
Jennifer McNally McNally, *Curry College*

Five preschool/elementary age children came to campus to play a probability game with preservice teachers in a content course. The experience positively impacted preservice teachers' probabilistic understanding and their perception of children's mathematical thinking.

**P28. Promotion of Productive STEM Identity in Underrepresented/Minoritized Secondary Mathematics Students**

Michele Mahady Haberlach, *Washington State University Vancouver*  
David Slavitt, *Washington State University Vancouver*

Results of a study on STEM identity development in a secondary mathematics class in a large, diverse, low-SES urban school are provided. Potential professional development experiences that draw on this research will be provided and discussed.

**P29. Prospective Teachers' Productive Struggle in a Mathematics Method Course**

Nitchada Kamlue, *Western Michigan University*

This poster reports on an exploratory study that investigated what productive struggle looks like when prospective teachers in a middle school mathematics methods course engage with a challenging mathematics task.

**P30. Providing Equitable Access to Mathematics Educators through a Collaborative University- School Partnership**

Tyreeka Williams, *North Carolina Agricultural and Technical State University*  
Thomas Coleman, *North Carolina Agricultural and Technical State University*

The proposed poster session will explore the grant-funded blinded project name by providing description of the structures and underlying framework of our training for a diverse group of educators and the high impact mathematics tutoring that results.

**P31. Simulation Based Inference Courses and Preservice Teachers' Perception of Children's Thinking**

Laura Callis, *Curry College*

Jennifer McNally McNally, *Curry College*

This study examined the impact of a simulation based introductory statistics course on preservice elementary teachers' responses to children's probabilistic reasoning.

**P32. State Standards Deviations from the Common Core**

Ashley Schmidt, *University of Central Florida*

Mathematics standards guide what is taught in K-12 mathematics classrooms across the United States but vary greatly from state to state. This poster shares findings from a qualitative content analysis study to examine the differences in current K-5 state mathematics standards.

**P33. Supporting a Teacher Residency Program in Rural Communities**

Kristin E Harbour, *University of South Carolina*

Thomas E Hodges, *University of South Carolina*

With stagnant and in many cases declining enrollment in traditional mathematics teacher preparation pathways, diversifying and creating innovative pathways into the profession is necessary. In this poster, we outline our innovative residency pathway, and present current findings across programmatic undertakings.

**P34. Supporting Mathematics Mentor Teachers through Collaborative Experiences**

Sharon Christensen, *Brigham Young University*

Tenille Cannon, *Brigham Young University*

The transition from mathematics teacher to mentor can be challenging as they navigate new roles and practices in facilitating learning to teach. We share preliminary results from a series of collaborative experiences developed to support mentors in this transition.

**P35. Supporting Undergraduate Mathematics Instructors Through Intentional Professional Learning**

Jessica Tybursky Nuzzi, *Montclair State University*

Victoria D Bonaccorso, *Montclair State University*

This proposal shares features of a professional learning community facilitated by mathematics teacher educators through the implementation of an ongoing, cyclical model. Supports were created for improved pedagogical practices, Precalculus curriculum implementation, and retention of adjunct instructors.

**P36. Systematic Literature Review of Culturally Responsive Teaching and Culturally Relevant Pedagogy in Secondary Mathematics Education**

Felicia Smith, *The University of Alabama*

Chalandra Gooden, *The University of Alabama*

Historically, mathematics instruction has not accommodated learners of various cultures and ethnicities. The purpose of this systematic literature review is to examine current evidence of Culturally Responsive Teaching and Culturally Relevant Pedagogy in the secondary mathematics classrooms from 2011-2021.

**P37. Teacher education students' perspectives on equity and mathematics teaching**

Rebecca H McGraw, *The University of Arizona*

Becca Jarnutowski, *The University of Arizona*

This poster describes a longitudinal study tracing the equity-related perspectives and emerging practices of 67 teacher education students across five programs over four years – the final two years of their programs and their first two years post-program teaching.

**P38. The Language of Explanations: How Students, Their Parents, and Their Teacher Explain Multiplication Solutions**

Kelly Womack-Adams, *North Carolina State University*

Temple A Walkowiak, *North Carolina State University*

We present the results from a case study comparing three trios of student, parent, and teacher explanations for the same multiplication problems and how the explanations play a role in perceptions of mathematical abilities.

**P39. Types of Questions Teachers Ask to Engage Students in Making Sense of a Student Contribution**

Nishat Binte Alam, *Michigan Technological University*

I discuss the types of questions teachers ask students to engage with making sense of high-leverage instances of student thinking, Mathematically Significant Pedagogical Opportunities. I also unpack what factors influence their decision about choosing and not choosing particular question types.

**P40. Attending to Details When Building Elementary Preservice Teachers' Understanding of Area Concepts**

Elizabeth Hughes, *University of Northern Iowa*

Olof B Steinhorsdottir, *University of Northern Iowa*

Through sharing and discussing sample elementary preservice teachers' work, this session highlights details in the complexity of selecting rich tasks and holding preservice teachers accountable to articulate their understanding of area measurement concepts.

**P41. Using Simulations to Provide Secondary Mathematics Teacher Candidates with Opportunities to Build Equitable Teaching**

Casedy Ann Thomas, *University of Virginia*

This study examines how simulations can be used with secondary mathematics teacher candidates to engage in practice with classroom management while attending to lesson objectives, and to understand how such experiences impact teacher candidates' self-efficacy with responsive, standards-based mathematics teaching.

**P42. Video Tagging as a Support for Learning to Lead Video Clubs**

Margaret Walton, *University of Maryland*

This study explores how video club facilitators learn to lead teacher discussions. We designed a facilitator PD (F-PD) that employs a video tagging tool to scaffold facilitator learning. Results detail how F-PD activities supported (or did not support) facilitator learning.

**P43. Which Scale Should We Use to Measure the Right Angle?**

Hamilton Hardison, *Texas State University*  
Mai Bui, *Texas State University*

In this poster session, we will share an assessment prompt we designed and implemented with prospective teachers (PTs) to better understand their conceptions of protractors and angle measure. We discuss what we learned from PTs' strategies.

**P44. Examining Elementary Preservice Teachers' Responsive Problem Posing**

Erin E Rich, *The University of Alabama*  
Kaleigh H Pate, *The University of Alabama*

Responsive teaching has been shown to support students' mathematical learning. However, responding to children's mathematical thinking is a difficult skill to develop. This study focuses on responsive problem posing: developing and revising problems considering students' backgrounds through dynamic interactions.

**P45. Writing to Learn: Elementary Preservice Teachers' Mathematics and Writing Self Efficacy**

Kaleigh H Pate, *The University of Alabama*  
Erin E Rich, *The University of Alabama*

The purpose of this presentation is to provide teacher educators an opportunity to engage with writing-to-learn tasks, discuss how these tasks are effectively integrated in mathematics methods courses, and consider the benefits of implementing writing-to-learn in mathematics teacher preparation.

## OVERVIEW OF THURSDAY AFTERNOON, FEBRUARY 2, 2023

	4:30 PM – 5:45 PM
<b>St. Charles A</b>	55. <i>A Meta-Discussion of Recruitment in Secondary Mathematics Teacher Preparation: Insights from Three Working Groups</i> - Martin, Amick, Jordan, Lee & Franz
<b>St. Charles B</b>	56. <i>The Collective Endeavor of Learning: Reflecting on the Contributions of Terry L. Wood</i> - Staples, Berry, Newton & Miller
<b>Astor Ballroom I</b>	57. <i>Social Justice Mathematics in Early Childhood Through Middle School Methods Courses</i> - Raygoza, Id-Deen, Yeh, Bartell, Thanheiser, Conway, Ruiz, Zavala & Felton-Koestler
<b>Astor Ballroom II</b>	58. <i>Engaging in Formative Assessment as a Teacher Educator: Exploring Issues of Reliability with Teaching Simulations</i> - Shaughnessy, Boerst, Garcia, Heck, Sachs & DeFino
<b>Astor Ballroom III</b>	59. <i>Viewing Classroom Mathematics Discourse through Two Complementary Lenses</i> - Conner, Leatham, Singletary, Van Zoest, Foster, Stockero, Park, Peterson & Zhuang
<b>Grand Ballroom A</b>	60. <i>Collaborations and Partnerships (Report Session)</i>
<b>Grand Ballroom B</b>	61. <i>Development of Mathematics Teacher Educators (Report Session)</i>
<b>St. Louis</b>	62. <i>Supporting Prospective Secondary Teachers' Engagement with Proof Learning using the FullProof Digital Environment</i> - Buchbinder, An & Vestal
<b>St. Ann</b>	63. <i>Using Equation Talk Throughs as Catalysts for Teacher Analysis of Opportunities for Algebraic Reasoning</i> - Patterson, Wrightsman & Acevedo
<b>Bourbon</b>	64. <i>Unpacking A Theory of Action for Supporting the Learning of Mathematics Coaches</i> - Kurutas, Maxwell, Riser, Gibbons & Hiebert
<b>Burgundy</b>	65. <i>Curriculum Materials and Professional Learning that Support Culturally Responsive Elementary Mathematics Learning Environments</i> - Drake
<b>Toulouse A</b>	66. <i>The Why, What, and How of Mathematical Modeling for Elementary Preservice Teachers</i> - Tidwell & Bennett
<b>Toulouse B</b>	67. <i>Centering Equity in Professional Development</i> - Kulow, Elliott, Sugimoto, Fredericks & White
<b>Bienville</b>	68. <i>Leveraging Inclusive Picture Books in Social Justice Mathematics Lessons in Early Childhood Teacher Education</i> - Moldavan & Kaufman
<b>Iberville</b>	69. <i>Challenges for Research-Practice Partnerships: Identifying Problems of Practice in K-12 Education</i> - Stephan, Fisher, Holl-Cross, McCulloch, Oriowo, Schwartz & Wilson

**Session 55** **St. Charles A**  
**Mathematics Education Policy and Program Issues**  
**Symposium**

***A Meta-Discussion of Recruitment in Secondary Mathematics Teacher Preparation: Insights from Three Working Groups***

W Gary Martin, *Auburn University*  
 Lisa Amick, *University of Kentucky*  
 Benjamin Jordan, *Allen Academy*  
 Jean S Lee, *University of Indianapolis*  
 Dana Pomykal Franz, *Mississippi State University*

Three working groups have formed to address challenges secondary mathematics teacher preparation programs face in meeting the continuing teacher shortage. Leaders of the groups will discuss emerging insights, with the goal of promoting a broader discussion of recruitment across AMTE.

**Session 56** **St. Charles B**  
**Development of Mathematics Teacher Educators**  
**Symposium**

***The Collective Endeavor of Learning: Reflecting on the Contributions of Terry L. Wood***

Megan Staples, *University of Connecticut*  
 Betsy Berry, *Purdue University Fort Wayne*  
 Jill Newton, *Purdue University*  
 Travis K Miller, *University of Indianapolis*

Terry Wood was an accomplished scholar as well as mentor, colleague, and friend to many in mathematics teacher education. We examine and learn from her approach to research and capacity building, which included mentor relationships with teachers and others.

**Session 57** **Astor Ballroom I**  
**Equity, Social Justice, and Mathematics Teacher**  
**Education**  
**Symposium**

***Social Justice Mathematics in Early Childhood Through Middle School Methods Courses***

Mary Candace Raygoza, *Saint Mary's College of California*  
 Lateefah Id-Deen, *Kennesaw State University*  
 Cathery Yeh, *The University of Texas at Austin*  
 Tonya Bartell, *Michigan State University*  
 Eva Thanheiser, *Portland State University*  
 Basil Conway, *Columbus State University*  
 Amanda Ruiz, *University of San Diego*  
 Maria Zavala, *San Francisco State University*  
 Mathew D Felton-Koestler, *Ohio University*

We will collectively explore integrating social injustice mathematics lessons in teacher education courses at the PreK-2, 3-5, and 6-8 grade levels. Presenters will share their praxis integrating specific lessons and invite participants to dialogue on their own praxis.

**Session 58** **Astor Ballroom II**  
**Practice-Based Experiences for Prospective Teachers**  
**Symposium**

***Engaging in Formative Assessment as a Teacher Educator: Exploring Issues of Reliability with Teaching Simulations***

Meghan Shaughnessy, *Boston University*  
 Tim Boerst, *University of Michigan*  
 Nicole Garcia, *University of Michigan*  
 Daniel Heck, *Horizon Research, Inc.*  
 Lindsey Sachs, *Horizon Research, Inc.*  
 Rosalie DeFino, *University of Wisconsin-La Crosse*

Using three related lenses to examine live face-to-face simulations of eliciting and interpreting student thinking, we focus on why issues of reliability are crucial to using and scaling the use of teaching simulations as formative assessments.

**Session 59** **Astor Ballroom III**  
**Mathematics Pedagogy**  
**Symposium**

***Viewing Classroom Mathematics Discourse through Two Complementary Lenses***

Keith R Leatham, *Brigham Young University*  
 AnnaMarie Conner, *University of Georgia*  
 Laura Singletary, *Lee University*  
 Laura R Van Zoest, *Western Michigan University*  
 Jonathan Kyle Foster, *University of Virginia*  
 Shari L Stockero, *Michigan Technological University*  
 Hyejin Park, *Drake University*  
 Blake E Peterson, *Brigham Young University*  
 Yuling Zhuang, *Emporia State University*

We explore teachers' facilitation of whole class discussions by comparing and contrasting the analysis of such discussions through two different lenses: 1) teachers' support of collective argumentation; and 2) teachers' productive use of student mathematical contributions.

***Collaborating with Our Colleagues: Bringing the Lessons of K-12 Professional Development to Improving College Mathematics Instruction***

Priya Vinata Prasad, *University of Texas at San Antonio*  
Jessica Gehrtz, *University of Texas at San Antonio*

This report describes a professional learning community of Mathematics Teacher Educators and college mathematics instructors working to improve instruction of college algebra at a university. We will discuss the relationship between lessons learned from K-12 learning communities to college mathematics teaching.

***Forging A New Community of Practice: Creating Space for Professional Learning by Invoking Teacher Curiosity***

Patrick L Sullivan, *Missouri State University*  
Stefanie D Livers, *Missouri State University*  
Joann Barnett, *Missouri State University*

Building sustainable communities of practice is challenging, especially in spaces that traditionally have not been amenable to those relationships. Our work intends to contribute strategies that enable hierarchies to be minimized and learning of all entities to be maximized

***Preservice Teachers' Work with Nonprofit on Social Emotional Learning – Year Two***

Jenna Rae O'Dell, *Bemidji State University*  
Todd Frauenholtz, *Bemidji State University*

This report will share our two years collaborating with a local non-profit to help prepare preservice mathematics teachers to teach all students, especially those from high need backgrounds that include trauma and toxic stress.

***Supporting Collaboration Between Mathematics and Special Education Teachers***

Bethany LaValley, *The University of Mississippi*  
Alice Steimle, *The University of Mississippi*  
Julie James, *The University of Mississippi*

We will report on a year-long content- and collaboration-focused academy for mathematics and special education teaching teams designed to leverage the strengths and expertise of each teacher, regarding research-based practices of the disciplines, positively impacting the learning outcomes of students.

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***Let's Talk About Math: Coaching Elementary Supervisors to Embrace Subject Specific Supervision Practices***

Brittney Castanheira, *Mercer University*

This presentation presents the unique experiences of elementary supervisors within a mathematics focused professional development series. It provides further insight into the complexities of supervision and the critical need for fostering meaningful connections between university coursework and the classroom.

***Mathematics Teacher Educators' Views About the Relationships Among Mathematics, Mathematics Education, and Citizenship***

Amy Brass, *Pennsylvania State University*

Findings related to mathematics teacher educators' views about mathematics, mathematics education, and citizenship from survey responses and semi-structured interviews will be shared. Through these findings, questions will be raised concerning alignment of these views with recent calls by educational stakeholders.

***Preparing Prospective Mathematics Teacher Educators for Inquiry-Based Teaching***

Kayla Heacock, *Ohio University*  
Allyson Hallman-Thrasher, *Ohio University*

This session describes an inquiry-based learning seminar and teaching experience for prospective MTEs and changes made to this MTE preparation program over three semesters. We present survey, reflection, and interview data to demonstrate MTEs' improved inquiry-based teaching skills.

***The Informal Mentorship Between a Novice Mathematics Teacher Educator and Experienced Mentor***

Amber Adgerson, *University of South Carolina*  
Kristin E Harbour, *University of South Carolina*

The autoethnography of a novice mathematics teacher educator will be presented alongside research on teacher educator identity development. The session will address the benefits of informal mentorships and the tensions novice teacher educators may face in navigating their new role.

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**Session 62** **St. Louis**  
**Teaching and Learning with Technology**  
**Individual Session**

***Supporting Prospective Secondary Teachers' Engagement with Proof Learning using the FullProof Digital Environment***

Orly Buchbinder, *University of New Hampshire*  
Tuyin An, *Georgia Southern University*  
Sharon Vestal, *South Dakota State University*

Integration of a digital proof tool, FullProof, was implemented in Geometry for Teachers courses at three universities. Findings about prospective secondary teachers' interactions with the tool and possible impact on their mathematical identity and proof writing will be shared.

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**Session 63** **St. Ann**  
**Professional Development**  
**Individual Session**

***Using Equation Talk Throughs as Catalysts for Teacher Analysis of Opportunities for Algebraic Reasoning***

Cody L Patterson, *Texas State University*  
Elizabeth Wrightsman, *Texas State University*  
Carlos Acevedo, *Texas State University*

We share an activity in which inservice secondary teachers record video explanations of their approaches in solving a linear equation, then analyze contrasting choices of language and reasoning and the opportunities they might offer for development of students' algebraic reasoning.

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**Session 64** **Bourbon**  
**Development of Mathematics Teacher Educators**  
**Individual Session**

***Unpacking A Theory of Action for Supporting the Learning of Mathematics Coaches***

Busra Sumeyye Kurutas, *University of Delaware*  
Valerie C Maxwell, *Delaware Math Coalition*  
Jamila Q Riser, *Delaware Mathematics Coalition*  
Lynsey Gibbons, *University of Delaware*  
James Hiebert, *University of Delaware*

This session examines the underlying theory of action for the professional learning of coaches to assist them in supporting teachers to unpack lessons, analyze videos of teaching to unpack key learning moments, and engage in coaching cycles with groups of teachers.

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**Session 65** **Burgundy**  
**AMTE Sponsored Session**

***Curriculum Materials and Professional Learning that Support Culturally Responsive Elementary Mathematics Learning Environments***

Corey Drake, *Maier Math Foundation*

We describe initial findings and questions emerging from the work of a Maier Math Foundation-funded working group of researchers and curriculum developers. The group focused on the question, "What could be the role of curriculum materials in creating and sustaining culturally responsive elementary mathematics learning environments?"

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**Session 66** **Toulouse A**  
**Mathematics Content and Curriculum**  
**Symposium**

***The Why, What, and How of Mathematical Modeling for Elementary Preservice Teachers***

Will Tidwell, *Morehead State University*  
Amy Been Bennett, *University of Nebraska-Lincoln*

Session participants will explore multiple perspectives for incorporating mathematical modeling into content courses for preservice elementary teachers, engage in tasks implemented with this population, and discuss facilitation strategies and students' responses to these tasks.

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**Session 67** **Toulouse B**  
**Professional Development**  
**Symposium**

***Centering Equity in Professional Development***

Torrey Kulow, *Portland State University*  
Rebekah Elliott, *Oregon State University*  
Amanda Sugimoto, *Portland State University*  
Julie Fredericks, *Teachers Development Group*  
Dorothy Y White, *University of Georgia*

Five mathematics teacher educators and researchers share examples of equity oriented professional development currently being designed and facilitated while exploring and problematizing the knowledge and skills that mathematics teacher educators need to engage in and lead this vital work.

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**Session 68**  
**Equity, Social Justice, and Mathematics Teacher Education Discussion Session**

**Bienville**

**Leveraging Inclusive Picture Books in Social Justice Mathematics Lessons in Early Childhood Teacher Education**

Alesia Mickle Moldavan, *Georgia Southern University*  
Bailey Anne Kaufman, *Fordham University*

This interactive session will engage participants in focused discussion about how inclusive, anti-bias picture books can be used by prospective teachers in early childhood teacher education to design social justice mathematics lessons addressing issues of identity, diversity, justice, and action.

**Session 69**  
**Collaborations and Partnerships Symposium**

**Iberville**

**Challenges for Research-Practice Partnerships: Identifying Problems of Practice in K-12 Education**

Michelle Stephan, *University of North Carolina at Charlotte*  
Christine Kiernan Fisher, *University of North Carolina at Greensboro*  
Cathy Holl-Cross, *University of North Carolina at Charlotte*  
Allison McCulloch, *University of North Carolina at Charlotte*  
Olanrewaju Oriowo, *University of North Carolina at Charlotte*  
Catherine Schwartz, *East Carolina University*  
Holt Wilson, *University of North Carolina at Greensboro*

In this symposium, a panel of K-12 mathematics teachers, coaches, administrators, district leaders and university researchers share the challenges and successes associated with identifying a problem of practice in a statewide research-practice partnership.

**THURSDAY, FEBRUARY 2, 2023**

**6:00 PM - 7:00 PM**



**RECEPTION FOR GRADUATE STUDENTS & EARLY CAREER FACULTY**  
Grand Gallery

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

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



**FRIDAY, FEBRUARY 3, 2023**

**7:00 AM - 8:15 AM**



**BREAKFAST & AFFILIATE MEETINGS**

**GRAND BALLROOMS C/D**

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

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



# OVERVIEW OF FRIDAY MORNING, FEBRUARY 3, 2023

	8:15 AM - 9:15 AM	9:30 AM - 10:30 AM	10:45 AM - 11:45 AM
<b>St. Charles A</b>	70. <i>Early Instructional Outcomes of Professional Development in a Noyce Master Teacher Fellowship Project</i> - Zelkowski & Burgos	84. <i>Preparation of Doctorates in Mathematics Education: Results from a National Conference</i> - Shih & Shulman	99. <i>High Uptake Practices: What Are They and How Might They Change the Professional Development Landscape?</i> - Candela, de Araujo, Wonsavage & Wambua
<b>St. Charles B</b>	71. <i>Equity, Social Justice, and Mathematics Teacher Education (Report Session)</i>	85. <i>Practice-Based Experiences for Prospective Teachers (Report Session)</i>	100. <i>Equity, Social Justice, and Mathematics Teacher Education (Report Session)</i>
<b>Astor Ballroom I</b>	72. <i>Building and Broadening: Elementary Preservice Teachers' Collective Engagement with Open Mathematics Tasks</i> - Mainzer & Brass	86. <i>Authentic Assessment for Learning to Teach Statistics with Technology</i> - Lee, Hudson, Casey & Mojica	101. <i>Humanizing Mathematics: Supporting Teachers in Planning Lessons that Apply Math to Social Justice Issues</i> - Waller
<b>Astor Ballroom II</b>	73. <i>Using Curriculum Materials in to Develop Knowledge and Skills with Equity-Based Practices</i> - Rigelman	87. <i>Centering "Bugs", Structuring Change, and Empowering Teacher Voice in Statewide Networked Improvement and Professional Development</i> - Burt-Kinderman, Campbell, Nail-Cook & Schwing	102. <i>Strategies and Resources for Supporting Preservice Teachers to Engage In Ambitious Instruction and Critically Consume Curricula</i> - Jasien
<b>Astor Ballroom III</b>	74. <i>Designing and Adapting Tools to Support Collaborative Learning of Equity Oriented Math Instruction</i> - Heaton, Knapp, Kulow & Carlson	88. <i>Parents and Teachers Doing Funds of Knowledge-based Math Tasks Together: Power and Positioning Considerations</i> - Varley Gutierrez, Napp-Avelli, Salazar, Civil & Turner	103. <i>Understanding Equity Oriented Teaching Dilemmas in Elementary Mathematical Modeling Lessons</i> - Carlson, Turner, Aguirre & Suh
<b>Grand Ballroom A</b>	75. <i>Professional Development &amp; Technology (Report Session)</i>	89. <i>Professional Development (Report Session)</i>	
<b>Grand Ballroom B</b>	76. <i>Collaborations and Partnerships (Report Session)</i>	90. <i>Equity, Social Justice, and Mathematics Teacher Education (Report Session)</i>	
<b>St. Louis</b>	77. <i>Asynchronous Instruction Via Shared Google Slides and its Impact on Prospective Teachers' Views of Authority</i> - Rosencrans	91. <i>Excellence in Scholarship Award: Representations of Practice and Evolving Infrastructures to Support Their Use</i> - Chazan	104. <i>Applying Visual Design Principles to Boardwork in a Mathematics Classroom</i> - Canizales
<b>St. Ann</b>	78. <i>A Professional Learning Model to Support Teacher to Advocate for Justice in Difficult Contexts</i> - Skultety, Joswick & Troudt	92. <i>Elementary Mathematics Specialists Policy and Practice Issues: Advocacy, Responsibilities, Impact, and Support</i> - Rigelman, Fennell & Cooper	105. <i>Accounting for Context in Preparing to Orchestrate Whole-Class Mathematics Discussions: An Initial Effort</i> - Jarry-Shore & Chavez

	8:15 AM - 9:15 AM	9:30 AM - 10:30 AM	10:45 AM - 11:45 AM
<b>Bourbon</b>	79. <i>Creating a Third Space: A Collaborative Professional Development Design for Equity Minded Mathematics Teaching</i> - Harris, Carman & Edgington	93. <i>STEM Collaboration in an Elementary Education Program: Engaging Students in Design Thinking to Solve Problems</i> - Swallow, Larsen & Lee	106. <i>Not your Model Minority: Interrogating the Phrase “Asian American” in Mathematics Education</i> - Yeh, Kokka, Louie, Jong, Chao & Wolfe
<b>Burgundy</b>	80. <i>Designing statistics activities to ground discussions of systemic racism</i> - Fernandes & Weiland	94. <i>Navigating the Benefits and Challenges of Implementing Coplanning and Coteaching in Clinical Experiences (Featured MTEP Session)</i> - Grady & Oloff-Lewis	107. <i>Developing Full Understanding of Scale/Scaling through Cross-disciplinary Activities</i> - Kastberg
<b>Toulouse A</b>		95. <i>Increasing Preservice Teacher Participation in Mathematical Discourse Through an Asynchronous Discussion Board</i> - Rathouz, Krebs & Cengiz-Phillips	108. <i>Organizing for Transformation Toward the AMTE Standards: Tools to Initiate (or Renew) Conversations (Featured MTEP Session)</i> - Lischka, Mohr-Schroeder & Lawler
<b>Toulouse B</b>	81. <i>Resources and Strategies for Preparing and Empowering Educators to Teach Statistics and Data Science</i> - Peters, Bargagliotti & Barnes	96. <i>How We Use NCTM Resources in Our Teacher Education Programs</i> - Barnes	109. <i>Pre-Service Elementary Teachers’ Initial Ideas about Interdisciplinary Math Lessons: An Explorative Cross University Dialogue</i> - Watson, Zambak, Litster & King
<b>Bienville</b>	82. <i>Affiliate Needs: Advocacy, Partnerships, and Management of State Affiliates</i> - AMTE Affiliate Connections Committee	97. <i>Challenging Teachers’ Noticing of Student Participation in Mathematics Discussion</i> - Prough & Gibbons	110. <i>Utilizing Plan, Do, Study, Act Cycles to Revise Protocols for Identifying Equitable Mathematical Teaching Practices (Featured MTEP Session)</i> - Hammonds & Conway
<b>Iberville</b>	83. <i>The Landscape of US Elementary Mathematics Teacher Education: Course Requirements for Mathematics Content and Methods</i> - Bertolone-Smith, Munson, Krause, Garner & Saclarides	98. <i>Curricular Initiatives for Developing Mathematical Knowledge for Teaching among Prospective Secondary Mathematics Teachers</i> - Burroughs, Arnold & Martin	111. <i>Synthesizing Research to Advance Mathematics Specialist Research and Practice</i> - Baker, Edwards, Saclarides, Livers & Hjalmarson

**Session 70**  
**Professional Development**  
**Individual Session**

St. Charles A

**Early Instructional Outcomes of Professional Development in a Noyce Master Teacher Fellowship Project**

Jeremy Zelkowski, *The University of Alabama*  
 Nikki Burgos, *The University of Alabama*

This session will report on and engage participants in findings on teachers' instructional practices and decisions having participated in multiple years of professional development. Early results, national boards, and using data with teacher candidates in field experiences is presented.

**Session 71**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Report Session**

St. Charles B

**Critical Conversations to Foster the Development of Educator Mindsets for Equity**

Liza Bondurant, *Delta State University*  
 Jane M Wilburne, *Pennsylvania State University*

The purpose of this interactive brief report is to engage participants in focused discussion about a sequence of instructional activities we designed to help improve preservice elementary math teachers' readiness to respond to equity-related situations.

**Investigating the Cultural Critical Consciousness Development of Preservice Teachers in STEM Education**

Karisma Morton, *University of North Texas*

In this study we utilize a cultural critical consciousness lens to investigate how the beliefs of elementary preservice teachers about inequity in STEM evolve over the course of their participation in an elementary mathematics and science methods course.

**Motivations for Enhancing Equity, Diversity, and Inclusion: Perspectives from Mathematics Teacher Educators**

Jess Ellis Hagman, *Colorado State University*

Advancing equity, diversity, and inclusion in mathematics necessitates attending to the motivations of key stakeholders. We explore perspectives of mathematics teacher educators on the need to enhance equity, diversity, and inclusion and highlight areas of strength and areas for growth.

**Session 72**  
**Mathematics Pedagogy**  
**Individual Session**

Astor Ballroom I

**Building and Broadening: Elementary Preservice Teachers' Collective Engagement with Open Mathematics Tasks**

Emily A Mainzer, *Pennsylvania State University*  
 Amy Brass, *Pennsylvania State University*

We will share our definition of collective engagement and how we see it taking place in preservice elementary teachers' discussions surrounding mathematics tasks of varying levels of openness. Attendees will engage in a task discussion and analyze a sample transcript.

**Session 73**  
**AMTE Sponsored Session**

Astor Ballroom II

**Using Curriculum Materials to Develop Knowledge and Skills with Equity-Based Practices**

Nicole Rigelman, *The Math Learning Center*

Implementing practices proven effective in reaching each and every student is a challenge. In this session we will consider ways to use freely available curriculum materials as a vehicle for teacher learning about equitable and ambitious teaching. Whether teaching content and pedagogy courses or supporting field-based work, mathematics teacher educators have found learning to enact these practices in the context of using curriculum materials is a high leverage practice for teacher learning across the professional continuum.

**Session 74**  
**Practice-Based Experiences for Prospective Teachers**  
**Individual Session**

Astor Ballroom III

**Designing and Adapting Tools to Support Collaborative Learning of Equity Oriented Math Instruction**

Ruth M Heaton, *Teachers Development Group*  
 Melinda Knapp, *Oregon State University-Cascades*  
 Torrey Kulow, *Portland State University*  
 Mary Alice Carlson, *Montana State University*

We share findings from a design-based research study which documents how three math teacher educators used and adapted a practice-based tool in the context of their teacher education programs to support mentor teachers' and teacher candidates' co-learning.

**Session 75**  
**Professional Development**  
**Report Session**

**Grand Ballroom A**

***Developing Sustainable Math Instructional Leadership in a Network of Under Resourced Elementary Schools***

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

We present a model for elementary mathematics instructional leadership that was developed and refined through a research-practice partnership with an urban school district, focusing on the promise of combining virtual cross-school collaborative lesson design cycles with practice-based professional development.

***Developing Teacher Technological and Pedagogical Content Knowledge Through Equitable Digital Game Based Learning***

Anthony Muro Villa, *University of California, Riverside*  
Holly Pope, *Allegheny Intermediate Unit*  
Quentin Sedlacek, *Southern Methodist University*

This study reports on a professional development designed to increase teacher technological, pedagogical and content knowledge with a specific emphasis in equitable digital game-based learning. Findings showed increased teacher knowledge, improved practices, importance of community building, and enhanced agency.

***Engage Learners in Mathematical Generalizations with Technology: Mathematics Preservice Teachers' Profiles***

Xiangquan Yao, *Pennsylvania State University*

In this session, we will report different profiles of preservice mathematics teachers in engaging learners in mathematical generalizations with technology and discuss ways to support their effort to engage learners in generalizing mathematical ideas with technology.

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**Session 76**  
**Collaborations and Partnerships**  
**Report Session**

**Grand Ballroom B**

***Partnering with Ministers of Black Churches to Recruit and Retain a Diverse Teaching Force***

Jennifer M Lewis, *Wayne State University*

This paper examines a partnership between a teacher education program in a public university and Black churches, who work together to recruit and retain a diverse teacher workforce for the community.

***Recruiting Undergraduate Students to a Mathematics Teaching Major and Career***

Todd Frauenholtz, *Bemidji State University*  
Jenna Rae O'Dell, *Bemidji State University*

This report will examine the recruitment efforts to recruit students to complete double majors in mathematics and mathematics education, then enter the teaching field based on survey data. This work was supported by a National Science Foundation Noyce grant.

***Toward Humanizing Mathematics Methods Courses Syllabi: A Collaborative Multivocality Analysis***

José Manuel Martínez Hinestroza, *Texas State University*  
Ciara D Townsell, *Texas State University*  
Maceigh Danielle Strange, *Texas State University*

Two pre-service teachers and a mathematics teacher educator analyzed multivocality in syllabi from elementary mathematics teaching methods courses. Our iterative, interpretative analysis revealed a continuum from centering policies and mandates, to centering PSTs' multiple professional and personal needs and contributions.

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**Session 77**  
**Teaching and Learning with Technology**  
**Individual Session**

**St. Louis**

***Asynchronous Instruction Via Shared Google Slides and its Impact on Prospective Teachers' Views of Authority***

Brenda L Rosencrans, *Portland State University*

We discuss how the use of shared Google slides in an asynchronous mathematics content course supported prospective teachers in sharing and discussing their mathematical ideas. Participants will discuss implications for course design and impact on teacher preparation.

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**Session 78**  
**Professional Development**  
**Individual Session**

**St. Ann**

***A Professional Learning Model to Support Teacher to Advocate for Justice in Difficult Contexts***

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

In this presentation, we share our nested model of professional learning that has supported teachers in finding reasonable avenues for justice-oriented action to take up in their schools and/or classrooms.

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**Session 79**  
**Professional Development**  
**Individual Session**

**Bourbon**

***Creating a Third Space: A Collaborative Professional Development Design for Equity Minded Mathematics Teaching***

Charlese Harris, *Research Assistant*  
Luke B Carman, *North Carolina State University*  
Cyndi Page Edgington, *North Carolina State University*

We share a professional development model that promotes co-learning amongst cooperating teachers and student teachers. Session participants will explore practices to create collaborative spaces that promote equity by using third space principles to flatten the hierarchy amongst learning community members.

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**Session 80**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Individual Session**

**Burgundy**

***Designing statistics activities to ground discussions of systemic racism***

Anthony Fernandes, *University of North Carolina at Charlotte*  
Travis Weiland, *University of Houston*

In this session we describe our initial iterative work designing and implementing a statistical investigation using CODAP with real traffic stop data to engage mathematics preservice teachers in discussions around systemic racism.

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**Session 81**  
**Mathematics Content and Curriculum**  
**Individual Session**

**Toulouse B**

***Resources and Strategies for Preparing and Empowering Educators to Teach Statistics and Data Science***

Susan Peters, *University of Louisville*  
Anna Emilia Bargagliotti, *Loyola Marymount University*  
David Barnes, *National Council of Teachers of Mathematics*

Explore freely-available resources for teaching and learning statistics and data science in K-12 and teacher preparation, engage with activities from these resources, and identify additional resources needed by mathematics teacher educators to prepare teachers for teaching statistics and data science.

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**Session 82**  
**AMTE Committee Session**

**Bienville**

***Affiliate Needs: Advocacy, Partnerships, and Management of State Affiliates***

AMTE Affiliate Connections Committee

The Affiliate Connections Committee (ACC) would like to know the needs and desires for state affiliates regarding advocacy, organizations or partnerships formed for mutual support, management issues or concerns, as well as other topics shared.

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**Session 83**  
**Mathematics Education Policy and Program Issues Discussion Session**

**Iberville**

***The Landscape of US Elementary Mathematics Teacher Education: Course Requirements for Mathematics Content and Methods***

Claudia M Bertolone-Smith, *California State University, Chico*  
Jen Munson, *Northwestern University*  
Gladys Krause, *College of William & Mary*  
Brette Garner, *University of Denver*  
Evthokia Stephanie Saclarides, *University of Cincinnati*

Do elementary teacher education programs meet the Standards for Preparing Teachers of Mathematics outlined by AMTE for content and methods courses? We analyzed 736 education programs; join us to discuss findings and implications for math teacher educators.

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**Session 84** **St. Charles A**  
**Development of Mathematics Teacher Educators**  
**Discussion Session**

***Preparation of Doctorates in Mathematics Education: Results from a National Conference***

Jeffrey Shih, *University of Nevada, Las Vegas*  
 Jonah Shulman, *University of Nevada, Las Vegas*

This session will focus on sharing the results from an NSF funded national conference on doctoral programs in mathematics education, including updates on ideas and written materials from previous conferences.

**Session 85** **St. Charles B**  
**Practice-Based Experiences for Prospective Teachers**  
**Report Session**

***Changes in Frame Processes as Preservice Teachers Engage in Video Case Analysis***

Victoria D Bonaccorso, *Montclair State University*  
 Joseph DiNapoli, *Montclair State University*

This session will provide an overview of preservice teacher learning through intentional facilitation of video case studies. We discuss the skills preservice teachers learned through their engagement with our model and how others can develop similar skills in their local context.

***Implementation of a Mediated Field Experience within the Context of a Mathematics Methods Course***

Montana Smithey, *Georgia Southern University*

The session will share perceptions of preservice teachers and a teacher educator on learning to teach mathematics from an initial implementation of a practice-based mathematics methods course. Implications will be shared from the collective experience and bridging theory and practice.

***Practice-Based Experience via STEM Summer Camp: Prospective Teacher View and Implementation of Effective Instruction***

Ahmad M Alhammouri, *Jacksonville State University*

During this presentation, we discuss to what extent an informal practice-based experience provided to prospective mathematics teachers through a middle school STEM summer camp influences their views and practices of teaching mathematics.

**Session 86** **Astor Ballroom I**  
**Teaching and Learning with Technology**  
**Individual Session**

***Authentic Assessment for Learning to Teach Statistics with Technology***

Hollylynne S Lee, *North Carolina State University*  
 Rick A Hudson, *University of Southern Indiana*  
 Stephanie Casey, *Eastern Michigan University*  
 Gemma Foust Mojica, *North Carolina State University*

The session will include research insights on preservice teachers' development in teaching statistics with technology through two authentic assessments: screencast of a data investigation and design of a statistics task. Participants will apply rubrics to samples of work.

**Session 87** **Astor Ballroom II**  
**Professional Development**  
**Individual Session**

***Centering "Bugs", Structuring Change, and Empowering Teacher Voice in Statewide Networked Improvement and Professional Development***

Joanna Aran Burt-Kinderman, *Pocahontas County Schools*  
 Matthew P Campbell, *West Virginia University*  
 Jennifer Nail-Cook, *Pocahontas County High School*  
 Elaine Schwing Cook, *Musselman High School*

We share tools, practices, and insights from a statewide networked improvement community focused on secondary mathematics to offer participants framing ideas and concrete strategies for supporting practice embedded and teacher led improvement focused on defining shared problems and testing possible solutions.

**Session 88** **Astor Ballroom III**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Individual Session**

***Parents and Teachers Doing Funds of Knowledge-based Math Tasks Together: Power and Positioning Considerations***

Maura Varley Gutierrez, *The University of Arizona*  
 Carolina Napp-Avelli, *University of Maryland*  
 Fany Salazar, *The University of Arizona*  
 Marta Civil, *The University of Arizona*  
 Erin E Turner, *The University of Arizona*

In this session we will share examples of math tasks that integrate families' funds of knowledge. Participants will then discuss vignettes of parents and teachers doing these tasks and "school math" tasks, with a focus on power and positioning.



**Session 89**  
**Professional Development**  
**Report Session**

**Grand Ballroom A**

***Codesigning Tools for Justice Focused Mathematics Teacher Leader Development***

Rebekah Elliott, *Oregon State University*  
Ruth M Heaton, *Teachers Development Group*

We examine justice focused tools for a classroom embedded mathematics teacher leader professional development study with educators, families, and community leaders. Our dissemination of findings supports mathematics teacher educators building critical consciousness and collective action that mitigate biases shaping educational systems.

***Mathematics and the Fresh Market: Facilitating Math and Social Justice Connections in Early Childhood***

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

During this session, we invite participants to journey into an early childhood classroom to examine professional development sessions that chronicled the ways inservice and preservice teachers responded to coaching around teaching mathematics for social justice in an early childhood space.

***Shifting Authority through Antiracist Pedagogy: The Use of Photovoice to Support Professional Learning Design***

Katherine Comey Edwards, *George Mason University*  
Courtney Baker, *George Mason University*

We present findings from a mathematics specialist course assignment that used photovoice as an antiracist pedagogy. We share tensions that arose as we facilitated mathematics specialists' design of professional learning that honored the needs and desires of their school communities.

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**Session 90**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Report Session**

**Grand Ballroom B**

***Intentions and Tensions: A Collaborative Autoethnographic Analysis of Mathematics Teacher Educators Exploring Antiracist Teaching Strategies***

Rebecca S Borowski, *Western Washington University*  
Kathryn Mary Rupe, *Western Washington University*

We describe tensions experienced as we engage in the work of implementing antiracist teaching practices. We will share elements of our collaborative autoethnography methodology and findings related to specific tensions. We invite collaboration and critical feedback on our work.

***Modules that Integrate Equitable Noticing in Elementary Mathematics Methods Courses***

Cindy Jong, *University of Kentucky*  
Molly Fisher, *University of Kentucky*  
Jonathan Thomas, *University of Kentucky*

An overview of Project M3INE: Microlearning Mathematics Modules that Intersect Noticing and Equity, will be focused on the development and implementation of modules that intersect noticing and equity for teacher educators to integrate into elementary mathematics methods courses. Project insights and research findings will be connected to practice.

***Preservice Teachers Noticing of Multilingual Students' Mathematical Thinking: Developing Equitable Noticing Using the EAST Framework***

Melissa Ann Gallagher, *University of Houston*  
Shaimaa Scrivner, *University of Houston*

Using the EAST Framework, we focused preservice teachers attending to and interpreting students' thinking with on equity. We found the treatment group rated the thinking of both a multilingual and a Standard American English speakers' higher than the comparison group.

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**Session 91**

**St. Louis**

**AMTE Excellence in Scholarship Award Winner**

***Representations of Practice and Evolving Infrastructures to Support Their Use***

Daniel Chazan, *University of Maryland*

Proponents of attention to practice in the professional education of teachers propose a variety of representations of practice as aids to instruction. This talk will examine steps toward an infrastructure to support creating, and working with, such representations.

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**Session 92** **St. Ann**  
**Mathematics Education Policy and Program Issues**  
**Discussion Session**

***Elementary Mathematics Specialists Policy and Practice***  
***Issues: Advocacy, Responsibilities, Impact, and Support***

Nicole Rigelman, *Portland State University*  
Francis (Skip) Fennell, *McDaniel College*  
Sandi Cooper, *Baylor University*

Discuss the responsibilities of and advocacy, impact, and support for elementary mathematics specialists. The recently released joint position entitled "The Role of Elementary Mathematics Specialists in the Learning and Teaching of Mathematics" will guide this interactive session.

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**Session 93** **Bourbon**  
**Collaborations and Partnerships**  
**Individual Session**

***STEM Collaboration in an Elementary Education***  
***Program: Engaging Students in Design Thinking to Solve***  
***Problems***

Meredith J C Swallow, *University of Maine at Farmington*  
Shannon Larsen, *University of Maine at Farmington*  
Carole Lee, *University of Maine at Farmington*

Math, Science, and Technology methods instructors collaborated to model an integrated STEM education experience with preservice teachers. Preservice teachers utilized an empathy fueled design thinking process to collaborate, solve problems, and integrate STEM content.

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**Session 94** **Burgundy**  
**Practice-Based Experiences for Prospective Teachers**  
**Featured MTEP Individual Session**

***Navigating the Benefits and Challenges of Implementing***  
***Copanning and Coteaching in Clinical Experiences***

Maureen Grady, *East Carolina University*  
Jennifer Oloff-Lewis, *California State University, Chico*

This session focuses on lessons learned over four years from pre-post survey items reflecting on the perceived benefits and challenges reported by interns and clinical teachers, related to co-planning and co-teaching during full-time internship in high school (e.g., student teaching).

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**Session 95** **Toulouse A**  
**Equity, Social Justice, and Mathematics Teacher**  
**Education**  
**Individual Session**

***Increasing Preservice Teacher Participation in***  
***Mathematical Discourse Through an Asynchronous***  
***Discussion Board***

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

We will share our exploration of online discussion structures that have potential to provide preservice teachers with more equitable participation in mathematically productive discourse. We will present prompts that encourage rough draft thinking about properties of a mystery number.

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**Session 96** **Toulouse B**  
**AMTE Sponsored Session**

***How We Use NCTM Resources in Our Teacher Education***  
***Programs***

David Barnes, *National Council of Teachers of Mathematics*

Learn how the community uses NCTM resources in their work. From journal articles and online content, to reflection guides, to webinars, to books, to PD materials, to... All levels. See what works for others and share what works for you.

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**Session 97** **Bienville**  
**Professional Development**  
**Individual Session**

***Challenging Teachers' Noticing of Student Participation***  
***in Mathematics Discussion***

Sam Prough, *University of Delaware*  
Lynsey Gibbons, *University of Delaware*

We examine elementary teachers' noticing of student participation in mathematics classroom discussions while engaging in a classroom based professional learning experience. Participants will engage in conversations about facilitation choices that can promote teachers to consider equitable participation practices.

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**Session 98** **Iberville**  
**Mathematics Content and Curriculum**  
**Symposium**

***Curricular Initiatives for Developing Mathematical***  
***Knowledge for Teaching among Prospective Secondary***  
***Mathematics Teachers***

Elizabeth Burroughs, *Montana State University*  
Elizabeth Arnold, *Colorado State University*  
W Gary Martin, *Auburn University*

How can teacher preparation programs instill mathematics knowledge among prospective secondary mathematics teachers? This session will highlight two approaches: redesigning mathematics content courses for the mathematical preparation of teachers and incorporating tasks designed for teacher preparation into mathematics content courses.

**Session 99** **St. Charles A**  
**Professional Development**  
**Discussion Session**

***High Uptake Practices: What Are They and How Might They Change the Professional Development Landscape?***

Amber G Candela, *University of Missouri-St. Louis*  
 Zandra de Araujo, *University of Florida*  
 F Paul Wonsavage, *University of Florida*  
 Michelle M Wambua, *University of Missouri*

How do we design small meaningful suggestions for instructional improvement that are easy to implement, rooted in teachers' existing practice, and have a high rate of uptake? That's the question we explore in this interactive discussion session.

**Session 100** **St. Charles B**  
**Equity, Social Justice, and Mathematics Teacher**  
**Education**  
**Report Session**

***Ethical Mathematics Consciousness: An Analytic and Design Framework for Developing Students' Ethical Reasoning in Mathematics***

Jordan Trombly Register, *University of North Carolina at Charlotte*  
 Michelle Stephan, *University of North Carolina at Charlotte*  
 David Pugalee, *University of North Carolina at Charlotte*

The proposed presentation aims to introduce an analytic and design framework for developing instructional materials that may foster students' ethical reasoning in mathematics and data science.

***How a Culturally Relevant Mathematics Educator Cares for her Students through High Expectations***

Kelly K Ivy, *University of Maryland*  
 Tarik Buli, *University of Maryland*

This presentation highlights a Black veteran culturally relevant mathematics teacher who elicits care for students through voicing high expectations. This research provides theory to practice examples of mathematics teaching that counteract deficit narratives surrounding Black students and mathematics education.

***What are Mathematics Teacher Educators' Perceptions towards Equity-based Teaching Practices?***

Hyejin Park, *Drake University*  
 Zareen Gul Rahman, *James Madison University*  
 Amanda Gantt Sawyer, *James Madison University*

Come learn what MTEs think about equity-based teaching practices. We will share themes about MTEs' meanings, their perceived challenges, and what they want to learn about equity-based teaching practices. Come reflect, share, and brainstorm ideas for your own courses.

**Session 101** **Astor Ballroom I**  
**Equity, Social Justice, and Mathematics Teacher**  
**Education**  
**Discussion Session**

***Humanizing Mathematics: Supporting Teachers in Planning Lessons that Apply Math to Social Justice Issues***

Patrice Parker Waller, *California State University, Fullerton*

Student engagement in math is greater when they see its relevance. We will explore a framework for planning lessons that apply math to social justice issues and share examples of how pre-service/in-service teachers put these into practice.

**Session 102** **Astor Ballroom II**  
**AMTE Sponsored Session**

***Strategies and Resources for Supporting Preservice Teachers to Engage In Ambitious Instruction and Critically Consume Curricula***

Lara Jasien, *CPM Educational Program*

This session provides MTEs with secondary curricular resources and explores how they can be used in courses/fieldwork to: enhance lesson planning, meet local teaching performance assessment requirements, examine how curricula incorporate pedagogy, support rubric-based curricular-analysis tasks, and model ambitious teaching.

**Session 103** **Astor Ballroom III**  
**Equity, Social Justice, and Mathematics Teacher**  
**Education**  
**Individual Session**

***Understanding Equity Oriented Teaching Dilemmas in Elementary Mathematical Modeling Lessons***

Mary Alice Carlson, *Montana State University*  
 Erin E Turner, *The University of Arizona*  
 Julia Aguirre, *University of Washington | Tacoma*  
 Jennifer M Suh, *George Mason University*

This session focuses on ways teachers navigate equity-oriented dilemmas when teaching mathematical modeling. We share an equity-oriented framework and report on a study of dilemmas teachers encountered and their in-the-moment decisions during lessons. Implications for professional development will be discussed.

**Session 104** **St. Louis**  
**Mathematics Pedagogy**  
**Individual Session**

***Applying Visual Design Principles to Boardwork in a Mathematics Classroom***

Jennifer Rose Canizales, *Brigham Young University*

I will discuss the importance of board work in a mathematics classroom and how teachers can apply visual design principles to mathematics board work to help facilitate class discussions and connection making with students.

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**Session 105** **St. Ann**  
**Mathematics Pedagogy**  
**Individual Session**

***Accounting for Context in Preparing to Orchestrate Whole-Class Mathematics Discussions: An Initial Effort***

Michael Jarry-Shore, *Boise State University*  
Rosa Chavez, *Stanford University*

Practice-based approaches to teacher education have not often centered teachers' knowledge of the contexts where they plan to teach. In this session, attendees will complete and consider an activity designed to have teachers account for context when orchestrating mathematics discussions.

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**Session 106** **Bourbon**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Discussion Session**

***Not your Model Minority: Interrogating the Phrase "Asian American" in Mathematics Education***

Cathery Yeh, *The University of Texas at Austin*  
Kari Kokka, *University of Nevada, Las Vegas*  
Nicole Louie, *University of Wisconsin-Madison*  
Cindy Jong, *University of Kentucky*  
Theodore Chao, *The Ohio State University*  
Jennifer A Wolfe, *The University of Arizona*

This session centers Asian American identities, histories, and complexities to attend to mathematics education as a racial project. We will identify strategies utilized to interrogate the model minority myth and to develop strategic anti-essentialist understandings of communities of Color.

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**Session 107** **Burgundy**  
**Mathematics Content and Curriculum**  
**Discussion Session**

***Developing Full Understanding of Scale/Scaling through Cross-disciplinary Activities***

Signe Kastberg, *Purdue University*

We intend to engage mathematics teacher educators in a scaling activity and explore their experiences using cross-disciplinary activities that may support students and teachers to develop robust, coherent understanding of scale/scaling to use in mathematics courses, everyday life, and other disciplines.

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**Session 108** **Toulouse A**  
**Collaborations and Partnerships**  
**Featured MTEP Discussion Session**

***Organizing for Transformation Toward the AMTE Standards: Tools to Initiate (or Renew) Conversations***

Alyson E Lischka, *Middle Tennessee State University*  
Margaret J Mohr-Schroeder, *University of Kentucky*  
Brian R Lawler, *Kennesaw State University*

A (secondary) mathematics teacher preparation program has complexity that challenges transformation toward achieving the AMTE Standards. We introduce tools implemented in Network Improvement Communities for building common vision, including identifying stakeholders, naming problems, and conducting a root cause analysis.

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**Session 109** **Toulouse B**  
**Mathematics Pedagogy**  
**Discussion Session**

***Pre-Service Elementary Teachers' Initial Ideas about Interdisciplinary Math Lessons: An Explorative Cross University Dialogue***

Lucy Anna Watson, *Belmont University*  
Vecihi Serbay Zambak, *Monmouth University*  
Kristy Litster, *Georgia*  
Michelle Morgan King, *Western Governors University*

During this discussion session, we will share preliminary findings from our explorative multi-site study and engage mathematics teacher educators about the ways elementary teacher candidates conceptualize interdisciplinary mathematics education and how we could support this process through teacher preparation opportunities.

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**Session 110** **Bienville**  
**Practice-Based Experiences for Prospective Teachers**  
**Featured MTEP Individual Session**

***Utilizing Plan, Do, Study, Act Cycles to Revise Protocols for Identifying Equitable Mathematical Teaching Practices***

Katherine Elizabeth Hammonds, *Columbus State University*  
Basil Conway, *Columbus State University*

Session attendees will participate collaboratively in a Plan, Do, Study, Act cycle by utilizing current field data, reflecting on a current noticing tool, and brainstorming potential next steps for implementation to improve the practice of teacher educators.

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**Session 111**  
**Development of Mathematics Teacher Educators**  
**Individual Session**

Iberville

***Synthesizing Research to Advance Mathematics***  
***Specialist Research and Practice***

Courtney Baker, *George Mason University*  
Katherine Comey Edwards, *George Mason University*  
Evthokia Stephanie Saclarides, *University of Cincinnati*  
Stefanie D Livers, *Missouri State University*  
Margret Hjalmarson, *National Science Foundation*

We report findings from our research synthesis exploring mathematics specialist positioning, trends, and prevalence. We present an expansion of the McGatha and Rigelman (2017) framework to include categories, contextual descriptions, and working definitions to more robustly capture mathematics specialist investigations.

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**FRIDAY, FEBRUARY 3, 2023**

**11:45 PM - 1:15 PM**



**LUNCH & BUSINESS MEETING**

**GRAND BALLROOMS A-D**

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

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



# OVERVIEW OF FRIDAY AFTERNOON, FEBRUARY 3, 2023

	1:15 PM - 2:15 PM	2:30 PM - 3:30 PM	3:45 PM - 4:45 PM
<b>St. Charles A</b>	<i>112. Preparing Mathematics Teacher Educators: What's Working and What's Missing? - Womack-Adams &amp; Duarte</i>	<i>125. Ways Mediated Field Experiences Support Teacher Candidates' Development of Effective Teaching Practices - Swartz, Billings &amp; Knapp</i>	<i>141. Rehabilitating Mathematical Tasks with Problematic Contexts: Teaching and Research - Neihaus, Kalinec-Craig, Prasad &amp; Wood</i>
<b>St. Charles B</b>	<i>113. Mathematics Pedagogy (Report Session)</i>	<i>126. Teaching and Learning with Technology (Report Session)</i>	<i>142. Mathematics Content and Curriculum (Report Session)</i>
<b>Astor Ballroom I</b>	<i>114. Recruiting Preservice Teachers in Current Contexts: Successes, Challenges, and Resources - AMTE GFO Task Force</i>	<i>127. I Am New to Mathematics Teacher Education: Supports Around Teaching, Scholarship, and Service - AMTE Professional Development Committee</i>	<i>143. Facilitating Debriefing Conversations that Support Teacher Learning: A Framework and Learning Experiences for Coaches - Gillespie &amp; Kruger</i>
<b>Astor Ballroom II</b>	<i>115. Teacher Professional Development Through Engagement as Researchers Observing Student Learning - Anderson, Krupa &amp; Borden</i>	<i>128. Investigating Cultural Capital of Math Preservice Teachers: Supporting Transferability and Empathy - Sundrani, Oriowo &amp; Pruitt-Britton</i>	<i>144. Ni de Aquí Ni de Allá. Borders in Educational Spaces - Krause, Adams Corral &amp; Maldonado Rodríguez</i>
<b>Astor Ballroom III</b>	<i>116. Resources for Equitably Attending to and Interpreting Multilingual Learner's Thinking - Scrivner &amp; Gallagher</i>	<i>129. Improving Assessment of Prospective Elementary Teachers' Knowledge for Teaching Fractions as Measures - Boyce, Bertolone-Smith &amp; MacDonald</i>	<i>145. Encouraging Collegial Conversations During Professional Development for Mathematics Teachers - Kim, Daniel, Leonard &amp; DiNapoli</i>
<b>Grand Ballroom A</b>		<i>130. Equity, Social Justice, and Mathematics Teacher Education (Report Session)</i>	<i>146. Practice-Based Experiences for Prospective Teachers (Report Session)</i>
<b>Grand Ballroom B</b>		<i>131. Mathematics Content and Curriculum (Report Session)</i>	<i>147. Equity, Social Justice, and Mathematics Teacher Education (Report Session)</i>
<b>Grand Ballroom C/D</b>		<i>132. Presidential Panel: Advocacy and Supporting Teacher Education K-16 - Grey, Mohr-Schroeder, Ashe</i>	
<b>St. Louis</b>	<i>117. Redesigning Mathematics Curriculum for Elementary Teachers: Answering the Call for Retention and Diversification with Depth - Stump, Woodward &amp; Watkins</i>	<i>133. Including Parents as Critical Members of School, University, and Community Partnerships for Social and Racial Justice - Harper, Rainwater &amp; Zelaya Zapata</i>	<i>148. Implementing a Framework for Assessing Equity in STEM Tasks in a Mathematics Specialist Content Course - Roscioli, Wills &amp; Suh</i>
<b>St. Ann</b>	<i>118. Transitioning to Proficiency Based Learning in Mathematics Methods Courses - Smith &amp; King</i>	<i>134. Supporting the Inclusion of Data Science in the Mathematics Classroom - Thrasher, Mojica &amp; Byun</i>	<i>149. Establishing Preservice Teaching Networks to Increase Access to Diverse Voices - Dyess &amp; Marin</i>

	1:15 PM - 2:15 PM	2:30 PM - 3:30 PM	3:45 PM - 4:45 PM
<b>Bourbon</b>	<i>119. How Experienced Teachers Learn to Facilitate Productive Struggle: Critical Supports that Alleviate Common Barriers - Goldsmith-Markey &amp; Valerio</i>	<i>135. Diversifying the Teacher Pipeline: Researching and Providing Opportunities for Paraeducators - Storeygard &amp; Raymond</i>	<i>150. Sensemaking about Leading Math Discussions through Problems of Practice - Ghouseini &amp; Castro Superfine</i>
<b>Burgundy</b>	<i>120. Culturally Relevant Teaching for Preservice Teachers: Embedded Experiences Across Multiple Courses - Rupe, Bragelman &amp; Borowski</i>	<i>136. Designing and Implementing Professional Development on Mathematical Modeling - Taite, Provost, Kim, Forte &amp; Perkoski</i>	<i>151. Breaking Out of Boxes: Pushing Beyond Gender and Mathematical Binaries - Lee-Hassan &amp; Whipple</i>
<b>Toulouse A</b>	<i>121. Family Math Nights: Fostering Community Collaborations and Facilitating Early Interactions with Elementary Students - Gibson &amp; Stevens</i>	<i>137. Preparing Preservice Teachers to Implement Content Language Integrations - Reiten</i>	<i>152. Utilizing Virtual Manipulatives and Children's Literature to Create Social Justice Early Childhood Mathematics Connections - Kaufman</i>
<b>Toulouse B</b>	<i>122. The Collective Reflection for Change Framework: Supporting Journeys from Recognizing Positionality to Antiracist Praxis Development - Donaldson &amp; Troudt</i>	<i>138. No Compromise: Advancing Content Knowledge Together with Critical Consciousness in Teacher Preparation (Featured MTEP Session) - Casey, Anhalt, Cortez, Kohler, Bondurant &amp; Tidwell</i>	<i>153. Content-Driven Integration Model in the Mathematics Classroom - Sawyer</i>
<b>Bienville</b>	<i>123. A Comparison of Secondary Preservice Teachers' Attending to Student Mathematical Thinking Based on Their Program - Switzer &amp; Teuscher</i>	<i>139. Recognizing and Finding Solutions to Emergent Disorienting Dilemmas to Develop an Iterative Conception of Equity - Naresh &amp; Fortney</i>	<i>154. Building Capacity for Teaching with Real Data: Implications for the Preparation of Teachers - Burrill</i>
<b>Iberville</b>	<i>124. ELK: A Simulation for Eliciting Learner Knowledge - Liebars &amp; Goldberg</i>	<i>140. Practices for Designing Tasks that Teach Mathematics with Social and Political Issues - Felton-Koestler, Sugimoto, Han &amp; Robinson</i>	<i>155. What Do We Miss: What Do Preservice Teacher Self Reflections Conceal from Teacher Educators? - Snider, Shekell &amp; Cross Francis</i>

**Session 112** **St. Charles A**  
**Development of Mathematics Teacher Educators**  
**Discussion Session**

***Preparing Mathematics Teacher Educators: What's Working and What's Missing?***

Kelly Womack-Adams, *North Carolina State University*  
 Alejandra Duarte, *North Carolina State University*

We invite participants into a conversation about the preparation and development of mathematics teacher educators. The goal is to share participant experiences and discuss improvements to mathematics teacher educator preparation, all while supporting each other as a community of learners.

**Session 113** **St. Charles B**  
**Mathematics Pedagogy**  
**Report Session**

***How Teachers' Knowledge of Students' Common Fraction Misunderstandings Informs their Instructional Decisions***

John Ezaki, *University of Southern California*

This study used logistic regression to understand how teachers' thinking about student misunderstandings (their description of the student misunderstanding and rationale for the student misunderstanding) are associated with different instructional responses to address the misunderstandings.

***Teachers Decenter to Understand Common Student Errors***

Patricia A Walsh, *Indiana University*  
 Erik Jacobson, *Indiana University*  
 Jinqing Liu, *University of California Irvine*

Decentering is a common and consequential strategy in solving teacher knowledge items previously thought to measure knowledge of student misconceptions. This study provides empirical evidence about the previously hypothesized relationship between decentering and teacher knowledge.

***Theorizing Partner Talk: A Commonly Seen yet Underexamined Practice***

Sunghwan Byun, *North Carolina State University*

Partner talk (or Think-Pair-Share, Turn and Talk) has rarely been examined empirically as a teaching practice despite its common appearance in classrooms. This presentation offers a theorization of partner talk based on an empirical study of two mathematics teachers' teaching.

**Session 114** **Astor Ballroom I**  
**AMTE Committee Session**

***Recruiting Preservice Teachers in Current Contexts: Successes, Challenges, and Resources***

AMTE GFO Task Force

Join the AMTE Get the Facts Out task force in discussing successes and challenges in recruiting preservice secondary teachers in current contexts. This session provides opportunities for participants to share their knowledge and strategies, as well as learn from others.

**Session 115** **Astor Ballroom II**  
**Professional Development**  
**Individual Session**

***Teacher Professional Development Through Engagement as Researchers Observing Student Learning***

Robin Keturah Anderson, *North Carolina State University*  
 Erin Krupa, *North Carolina State University*  
 Margaret Leak Borden, *North Carolina State University*

This session will examine how mathematics teachers learn as members of a research team studying the design and refinement of STEM curricula. Collaboratively session participants will explore how including teachers within research teams enhances the research by leveraging teacher expertise

**Session 116** **Astor Ballroom III**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Discussion Session**

***Resources for Equitably Attending to and Interpreting Multilingual Learner's Thinking***

Shaimaa Scrivner, *University of Houston*  
 Melissa Ann Gallagher, *University of Houston*

Participants will explore a video repository and lessons built around the Equitable Attending to and interpreting of Student Thinking (EAST) framework and consider how these resources could be used or improved for mathematics education methods courses.



**Session 117** **St. Louis**  
**Mathematics Content and Curriculum**  
**Discussion Session**

***Redesigning Mathematics Curriculum for Elementary Teachers: Answering the Call for Retention and Diversification with Depth***

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

A collaborative redesign of mathematics curriculum for prospective elementary teachers is presented supporting efforts to recruit and retain a diverse pipeline of educators. We will describe our partnership, components of the curriculum and pedagogy, and evidence of prospective teacher development.

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**Session 118** **St. Ann**  
**Mathematics Pedagogy**  
**Individual Session**

***Transitioning to Proficiency Based Learning in Mathematics Methods Courses***

Carmen Smith, *The University of Vermont*  
Barbara King, *Florida International University*

In this session, we will describe research supporting proficiency-based learning in mathematics teacher education, analyze approaches used by teacher educators at different universities to implement proficiencies in mathematics teacher education courses, share strategies and resources, and discuss challenges.

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**Session 119** **Bourbon**  
**Professional Development**  
**Individual Session**

***How Experienced Teachers Learn to Facilitate Productive Struggle: Critical Supports that Alleviate Common Barriers***

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

When experienced teachers learn to facilitate students' productive struggle, barriers can emerge. This qualitative study describes typical barriers teachers encountered and the critical supports that alleviated those barriers within a professional development program that combines Lesson Study and practice-based approaches.

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**Session 120** **Burgundy**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Individual Session**

***Culturally Relevant Teaching for Preservice Teachers: Embedded Experiences Across Multiple Courses***

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

Preservice teachers need opportunities to think critically about the role of culture in math teaching and learning. Reflecting on culture, analyzing and modifying math tasks using a culturally relevant cognitively demanding framework is one strategy for integration across their coursework.

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**Session 121** **Toulouse A**  
**Collaborations and Partnerships**  
**Individual Session**

***Family Math Nights: Fostering Community Collaborations and Facilitating Early Interactions with Elementary Students***

Jennifer Gibson, *James Madison University*  
Alexis Stevens, *James Madison University*

This session will examine the implementation and outcomes of Family Math Nights from two perspectives: prospective PreK-8 teachers in mathematics content courses who lead activities during Family Math Night and local families who engage in Family Math Night.

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**Session 122** **Toulouse B**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Discussion Session**

***The Collective Reflection for Change Framework: Supporting Journeys from Recognizing Positionality to Antiracist Praxis Development***

Sara Donaldson, *Wheaton College*  
Melissa Troutt, *University of Wisconsin-Eau Claire*

In this discussion session, we will collectively examine how collaborative, professional learning using the Critical Reflection for Change framework supports accountable engagement in journeys toward both deepening understanding of positionality and developing more equitable mathematics teacher education praxis.

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**Session 123** **Bienville**  
**Practice-Based Experiences for Prospective Teachers**  
**Individual Session**

***A Comparison of Secondary Preservice Teachers’  
Attending to Student Mathematical Thinking Based on  
Their Program***

John Matthew Switzer, *Texas Christian University*  
Dawn Teuscher, *Brigham Young University*

We report on what and how preservice teachers from two programs, one having taken multiple mathematics education courses and the other starting their mathematics education courses, attend to student mathematical thinking in the same focused video analysis assignment.

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**Session 124** **Iberville**  
**Teaching and Learning with Technology**  
**Individual Session**

***ELK: A Simulation for Eliciting Learner Knowledge***

Cathy S Liebars, *The College of New Jersey*  
Adam Goldberg, *Southern Connecticut State University*

ELK is a free simulation tool in which two preservice teachers engage in a text-based chat as they play the roles of teacher and student. We will demonstrate ELK, share our implementation and feedback, and offer suggestions for use.

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**Session 125** **St. Charles A**  
**Practice-Based Experiences for Prospective Teachers**  
**Discussion Session**

***Ways Mediated Field Experiences Support Teacher Candidates' Development of Effective Teaching Practices***

Barbara Swartz, *West Chester University*  
 Esther M Billings, *Grand Valley State University*  
 Melinda Knapp, *Oregon State University-Cascades*

Participants will analyze and discuss case studies depicting teacher candidate learning during mediated field experiences to explore ways mediated field experiences support teacher candidates' development of understanding and implementation of NCTM's (2014) effective teaching practices.

**Session 126** **St. Charles B**  
**Teaching and Learning with Technology**  
**Report Session**

***Equilateral Triangle Inscribed in a Rectangle: Secondary Mathematics Teacher Candidates' Experiences with GeoGebra***

Vecihi Serbay Zambak, *Monmouth University*  
 Marta T Magiera, *Marquette University*

We report on a study with secondary school teacher candidates whom we engaged in exploring geometrical relationships and student mathematical reasoning using GeoGebra. We discuss how teacher candidates view the potential of GeoGebra for supporting students' argumentation in geometry.

***Teacher Educator Learning to Implement Equitable Mathematics Teaching using Technology through Lesson Study***

Rongjin Huang, *Middle Tennessee State University*  
 Christopher Bonnesen, *Middle Tennessee State University*

This session details a technology-infused lesson study focused on developing mathematics educators' equitable instructional practice. Analysis of lesson artifacts and debriefs, and self-reflection revealed instructors developed their awareness of equitable teaching practice using technology affordances through the iterations of lesson study

***Teacher Professional Development Using Computer Programming to Teach Generalization in Middle School Mathematics***

Cynthia L Stenger, *University of North Alabama*  
 Andrea D Beesley, *SRI International*

Can computer programming be an effective tool for teaching and learning generalization? We discuss teacher implementation of lessons where students wrote computer programs, recognized and recovered general behaviors from their code, and described these behaviors using abstract mathematical language.

**Session 127** **Astor Ballroom I**  
**AMTE Committee Session**

***I Am New to Mathematics Teacher Education: Supports Around Teaching, Scholarship, and Service***

AMTE Professional Development Committee

This session is designed to provide opportunity for novice mathematics teacher educators to interact with experienced mathematics teacher educators. The roundtable structure of the session allows small groups to discuss topics of interest around research, teaching, and service including Designing/implementing a methods course; designing/implementing a content course; navigating academia as an MTE of color; creating a network of support and mentorship; connecting with schools; managing work and life responsibilities; coping as the lone math educator in your department; and getting your research agenda off the ground through creating a research and publishing pipeline.

**Session 128** **Astor Ballroom II**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Discussion Session**

***Investigating Cultural Capital of Math Preservice Teachers: Supporting Transferability and Empathy***

Anita Sundrani, *University of Houston*  
 Olanrewaju Oriowo, *University of North Carolina at Charlotte*  
 Tiffini Pruitt-Britton, *American Institutes for Research*

This discussion session focuses on how the community cultural wealth framework can be incorporated in equitable mathematics teacher preparation programs. Participants will consider how mathematics pre-service teachers' forms of capital can be discovered and valued during their teacher preparation.

**Session 129** **Astor Ballroom III**  
**Mathematics Content and Curriculum**  
**Individual Session**

***Improving Assessment of Prospective Elementary Teachers' Knowledge for Teaching Fractions as Measures***

Steven Boyce, *Portland State University*  
 Claudia M Bertolone-Smith, *California State University, Chico*  
 Beth Loveday MacDonald, *Illinois State University*

In this session we will compare prospective elementary teachers' responses to fractions tasks on written assessments and characteristics of an instructional video explaining their solution to a fractions task to a hypothetical child. We discuss implications for instruction.

**Session 130** **Grand Ballroom A**  
**Equity, Social Justice, and Mathematics Teacher**  
**Education**  
**Report Session**

***Black Mathematics Teachers' Experiences as***  
***Researchers in Humanizing Educational Practices for***  
***Disabled Students of Color***

Paulo Tan, *Johns Hopkins University*

Despite the push for equity in mathematics education, disabled students of color continue to be one of the most marginalized groups. This presentation describes outcomes of a participatory research project centered on the experiences of Black educators.

***Leveraging Discourses to Make Sense of Teachers'***  
***Conceptions of Justice in Mathematics Education***

Megan Brunner, *Oregon State University*

This presentation will discuss how teachers' conceptions of justice and the Discourses they invoke in those conceptions can have implications for their goals and aligned praxis to achieve a more just mathematics education.

**Session 131** **Grand Ballroom B**  
**Mathematics Content and Curriculum**  
**Report Session**

***An Exploration of Pedagogical Mathematical Practices***  
***from a Teacher Perspective***

Nicholas Wasserman, *Teachers College, Columbia University*

This report session describes findings from a research study with secondary teachers. It identifies four 'pedagogical mathematical practices' (not 'knowledge') that might be incorporated into university mathematics coursework to improve their relevance for teacher preparation.

***Engaging in Productive Struggle: Preservice Teachers'***  
***Experiences in Face-to-Face vs. Online Methods Classes***

Shelli L Casler-Failing, *Georgia Southern University*

This session shares findings of research conducted with preservice teachers regarding their experiences learning about productive struggle. This session will compare face-to-face vs. virtual environments and how each environment supported understanding of the benefit of productive struggle for student learning.

***Examining Teacher Candidates' Attention to the SMPs***

Elyssa Stoddard, *State University of New York at Oneonta*

This report examines how student teaching provided opportunities for two teacher candidates to learn about the Common Core Standards for Mathematical Practice. We explore how the standards were attended to within their instruction and the factors that drove their attention.

**Session 132** **Grand Ballroom C/D**  
**AMTE President Exchange**

***Presidential Panel: Advocacy and Supporting Teacher***  
***Education K-16***

Paul Grey, *NCSM*  
Margaret Mohr-Schroeder, *School Science and Mathematics Association*  
Lisa Ashe, *Association of State Supervisors of Mathematics*

This presidential panel will explore the connection between organizations and the role members play in advocacy and supporting future mathematics teachers. Organizational presidents from NCSM, SSMA, & ASSM will lead the panel.

**Session 133** **St. Louis**  
**Collaborations and Partnerships**  
**Discussion Session**

***Including Parents as Critical Members of School,***  
***University, and Community Partnerships for Social and***  
***Racial Justice***

Frances K Harper, *The University of Tennessee, Knoxville*  
Tabatha Rainwater, *The University of Tennessee, Knoxville*  
Francina Iszamar Zelaya Zapata, *The University of Tennessee, Knoxville*

Parents and university team members will briefly share about our collaboration and the development of two parent research-partner models. Participants will discuss and create a plan for partnering with parents to amplify social and racial justice in mathematics teacher education.

**Session 134** **St. Ann**  
**Professional Development**  
**Individual Session**

***Supporting the Inclusion of Data Science in the***  
***Mathematics Classroom***

Emily Plunkett Thrasher, *North Carolina State University*  
Gemma Foust Mojica, *North Carolina State University*  
Sunghwan Byun, *North Carolina State University*

With recent adoption of data science standards across states, it will become increasingly important for mathematics teacher educators to prepare teachers to incorporate data science into the mathematics curriculum. An approach and materials will be shared.

**Session 135** **Bourbon**  
**Equity, Social Justice, and Mathematics Teacher Education Individual Session**

***Diversifying the Teacher Pipeline: Researching and Providing Opportunities for Paraeducators***

Judy Storeygard, *TERC*  
Sophia Raymond, *TERC*

The "Doing the Math with Paraeducators" project addressed systemic inequities providing practice-based professional development for paraeducators. We describe our program and discuss how we apply narrative identity theory. Participants will engage in video excerpts and artifacts that exemplify the project's approach.

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**Session 136** **Burgundy**  
**Professional Development Individual Session**

***Designing and Implementing Professional Development on Mathematical Modeling***

Geena Taite, *Montclair State University*  
Amanda Provost, *Montclair State University*  
Youngjun Kim, *Montclair State University*  
Frank Forte, *Montclair State University*  
Andre Perkoski, *Montclair State University*

This session will share the cyclic process of designing and implementing professional development on mathematical modeling through action research. Participants will also engage in a short mathematical modeling task to experience the benefits and challenges of mathematical modeling.

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**Session 137** **Toulouse A**  
**Mathematics Pedagogy Discussion Session**

***Preparing Preservice Teachers to Implement Content Language Integrations***

Lindsay Reiten, *University of Northern Colorado*

Content-language integrations are essential to engage all students in the learning of mathematics and the accompanying language development that learning mathematics necessitates. You are invited to join the discussion related to preparing pre-service teachers to implement this integration.

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**Session 138** **Toulouse B**  
**Mathematics Content and Curriculum Featured MTEP Individual Session**

***No Compromise: Advancing Content Knowledge Together with Critical Consciousness in Teacher Preparation***

Stephanie Casey, *Eastern Michigan University*  
Cynthia Oropesa Anhalt, *The University of Arizona*  
Ricardo Cortez, *Tulane University*  
Brynja Kohler, *Utah State University*  
Liza Bondurant, *Delta State University*  
Will Tidwell, *Morehead State University*

Participants will engage in tasks that explore issues of social justice through engagement in processes central to modeling and statistics. Structural design of the tasks and best practices for advancing content knowledge together with critical consciousness will also be discussed.

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**Session 139** **Bienville**  
**Development of Mathematics Teacher Educators Discussion Session**

***Recognizing and Finding Solutions to Emergent Disorienting Dilemmas to Develop an Iterative Conception of Equity***

Nirmala Naresh, *University of North Texas*  
Brian Scott Fortney, *University of North Texas*

In this discussion, participants will be engaged with a first-cut of themes and disorienting dilemmas developed from a 5-year, longitudinal study seeking to understand how an iterative definition of equity impacts and guides STEM teacher educators' pedagogical practices.

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**Session 140** **Iberville**  
**Equity, Social Justice, and Mathematics Teacher Education Individual Session**

***Practices for Designing Tasks that Teach Mathematics with Social and Political Issues***

Mathew D Felton-Koestler, *Ohio University*  
Amanda Sugimoto, *Portland State University*  
Simon Byeonguk Han, *Portland State University*  
Molly L Robinson, *Portland State University*

In this session we will introduce core practices for effective design of math tasks that connect to social and political issues. We will then examine the practices math teacher educators and teachers engaged in while planning these tasks.

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**Session 141** **St. Charles A**  
**Mathematics Pedagogy**  
**Individual Session**

***Rehabilitating Mathematical Tasks with Problematic Contexts: Teaching and Research***

Aubrey Neihaus, *Wichita State University*  
 Crystal Kalinec-Craig, *University of Texas at San Antonio*  
 Priya Vinata Prasad, *University of Texas at San Antonio*  
 Marcy Wood, *The University of Arizona*

When presented with tasks with problematic contexts, prospective teachers often struggle to revise the tasks while maintaining underlying mathematics. We developed a cycle of rehabilitation to support prospective teachers in revisions. We share the cycle and early findings from implementation.

**Session 142** **St. Charles B**  
**Mathematics Content and Curriculum**  
**Report Session**

***Elementary Preservice Teachers' Perceptions of Productive Struggle and How to Create It***

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

We investigated whether reflections focused on productive struggle impacted elementary preservice teachers' perceptions of themselves as doers and teachers of mathematics. We will present preservice teachers' perceptions of productive struggle and how they will apply this concept in their teaching.

***Elementary Teachers' Integration of Number Talks into Their Curriculum Assemblages***

Hilary R Tanck, *High Point University*  
 Beth Loveday MacDonald, *Illinois State University*

This report explores elementary mathematics teachers' curriculum work integrating Number Talks, short 5-15 minute discussions focusing on students' strategies for mental computation, into their curriculum assemblages. Assemblage theory was used to frame how participants modified Number Talks in their classrooms.

***Leveraging Strip Diagrams to Support Elementary Preservice Teachers' Deductive Reasoning in Early Algebra***

Teo Paoletti, *University of Delaware*

We will engage participants in 1) theory connecting deductive and algebraic reasoning, 2) research indicating the affordances of strip diagrams for building these ways of thinking, and 3) tasks we designed and the results that indicate their effectiveness for practice.

**Session 143** **Astor Ballroom I**  
**Development of Mathematics Teacher Educators**  
**Individual Session**

***Facilitating Debriefing Conversations that Support Teacher Learning: A Framework and Learning Experiences for Coaches***

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

We share our debriefing conversational framework created to help content-coaches make sense of the complex decision-making processes required of facilitating debriefing conversations. We also share a set of learning experiences developed to support coaches in learning to use the framework.

**Session 144** **Astor Ballroom II**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Discussion Session**

***Ni de Aquí Ni de Allá. Borders in Educational Spaces***

Gladys Krause, *College of William & Mary*  
 Melissa Adams Corral, *University of Texas Rio Grande Valley*  
 Luz A Maldonado Rodríguez, *Texas State University*

We invite multilingual mathematics educators to participate in sharing their understanding of and experiences with borders within their educational spaces. We will discuss their implications for extending and pushing beyond historically central themes in multilingual mathematics education.

**Session 145** **Astor Ballroom III**  
**Professional Development**  
**Individual Session**

***Encouraging Collegial Conversations During Professional Development for Mathematics Teachers***

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

This session will support mathematics teacher educators in facilitating collegial conversations during professional development settings. Rooted in the Teaching for Robust Understanding framework, participants will be introduced to facilitation structures that guide conversations into collegiality and toward teacher learning.

**Session 146** **Grand Ballroom A**  
**Practice-Based Experiences for Prospective Teachers**  
**Report Session**

***Potential Mismatch: Exploring Instructional Dilemmas Identified by Preservice Teachers and Mathematics Teacher Educators***

Raleigh Luczak, *Michigan State University*  
Sheila Orr, *Michigan State University*  
Kristen Bieda, *Michigan State University*

Mathematics teacher educators can support preservice teachers in early field experiences by helping them recognize when and how moments of uncertainty in teaching arise, but knowing what constitutes a moment of uncertainty for a preservice teacher while teaching requires further investigation.

***Preservice Elementary Teachers' Perceptions of Teaching Mathematics: A Metaphorical Approach***

Carrie S Cutler, *University of Houston*  
Linda Aidong Zhang, *Louisiana State University Shreveport*

This study shares preservice teachers' self-generated metaphors for mathematics teaching before and after their clinical experience. Emerging themes focused on the Nature of Mathematics (e.g., an art), Teaching Pedagogy (e.g., a roller coaster) and Teacher Identity (e.g., a juggler).

***Preservice Teachers' Development through a 'Three Semester plus Student Teaching' Clinical Program***

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

Through a Noyce grant-funded project, Concordia College in Moorhead, Minnesota is developing a 'three-semester internship plus one-semester student teaching' clinical model. Here, we present findings on preservice teachers' knowledge of the NCTM mathematics teaching practices, noticing skills, and mathematics beliefs.

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**Session 147** **Grand Ballroom B**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Report Session**

***Equity, Social Justice, and Mathematics Teacher Education***

***Closing the Opportunity Gap in Mathematics Education***

Candies Winfun-Cook, *The University of Mississippi*

Shifting attention from the achievement gap to opportunity gap is necessary to shrink gaps in the educational system. This study revealed lived experiences of people of color as participating in college & career mathematics readiness activities in a high school.

***Equity in Early Field Work: "That got dropped a lot."***

Susan Cannon, *Mercer University*  
Brittney Castanheira, *Mercer University*

In an ambitious field work study, we engaged preservice elementary teachers with two mathematics equity tools in their final field work semester. Of three sets of university supervisors and preservice teachers, only one set fully engaged with both tools.

***Supporting Latina Mother-Prospective Teachers to Leverage Personal Strengths and Experiences for Teaching Elementary Mathematics***

Traci Kelley Elmore, *University of Texas at San Antonio*

This report foregrounds recent research exploring how to raise awareness of, validate, and value the diverse knowledge bases that mother-prospective teachers have based in their prior experiences from within their families and backgrounds.

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**Session 148** **St. Louis**  
**Teaching and Learning with Technology**  
**NTLI Award Session**

***Implementing a Framework for Assessing Equity in STEM Tasks in a Mathematics Specialist Content Course***

Kate Roscioli, *George Mason University*  
Theresa Wills, *George Mason University*  
Jennifer M Suh, *George Mason University*

In this session, we share how we used the Equity-centered Transformative Technology Lesson Analysis Tool in a mathematics specialist course. Participants will engage with the tool and explore how it can be used with their students.

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**Session 149** **St. Ann**  
**Collaborations and Partnerships**  
**Individual Session**

***Establishing Preservice Teaching Networks to Increase Access to Diverse Voices***

Sarah Roller Dyess, *The University of Alabama in Huntsville*  
Katherine Ariemma Marin, *University of Louisville*

We share an assignment designed to engage preservice teachers in diverse learning and networking opportunities and discuss implementations and supporting materials. Results indicate the assignment successfully exposed preservice teachers to critical conversations. Participants will co-construct resources for incorporating diverse voices.

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**Session 150** **Bourbon**  
**Professional Development**  
**Individual Session**

***Sensemaking about Leading Math Discussions through Problems of Practice***

Hala Ghousseini, *University of Wisconsin-Madison*  
Alison Castro Superfine, *University of Illinois Chicago*

Our work centers problems of practice as spaces for teacher learning. We report on adaptive designs of two professional development initiatives with elementary teachers and the way they provided opportunities for teachers to examine problems of practice related to leading discussions.

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**Session 151** **Burgundy**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Individual Session**

***Breaking Out of Boxes: Pushing Beyond Gender and Mathematical Binaries***

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

Participants will engage in the validation phase of a modeling task about singular they/them pronouns. We will discuss the social and political implications of the original model, students' reflection, and potential ways to revise or expand on the task.

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**Session 152** **Toulouse A**  
**Teaching and Learning with Technology**  
**Discussion Session**

***Utilizing Virtual Manipulatives and Children's Literature to Create Social Justice Early Childhood Mathematics Connections***

Bailey Anne Kaufman, *Fordham University*

Participants will discuss the use of virtual manipulatives and children's literature to engage prospective teachers in social justice based early mathematics tasks in early childhood teacher education courses. Opportunities will be made to collaboratively develop new tasks utilizing virtual manipulatives.

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**Session 153** **Toulouse B**  
**Mathematics Pedagogy**  
**Individual Session**

***Content-Driven Integration Model in the Mathematics Classroom***

Amanda Gantt Sawyer, *James Madison University*

Come learn how to support multiple subject integration in the mathematics class using a six-step process called the Content-Driven Integration Model. We will discuss issues pre-service teachers have with implementation and provide opportunities to explore this new model!

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**Session 154** **Bienville**  
**Mathematics Content and Curriculum**  
**Individual Session**

***Building Capacity for Teaching with Real Data: Implications for the Preparation of Teachers***

Gail Burrill, *Michigan State University*

Suggestions for curricular changes recognize the increasing need for data and data science. Participants will consider the results of a study on implementing a data driven activity and discuss implications for preparing teachers to use real data and real contexts.

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**Session 155** **Iberville**  
**Practice-Based Experiences for Prospective Teachers**  
**Individual Session**

***What Do We Miss: What Do Preservice Teacher Self Reflections Conceal from Teacher Educators?***

Rachel B Snider, *The College of New Jersey*  
Calli Shekell, *Educational Testing Service*  
Dionne Cross Francis, *University of North Carolina at Chapel Hill*

In this session, we present findings from a study comparing PSTs' reflections to their video recorded instruction leading an argumentation focused discussion. The session will stimulate discussion about the role of reflections, including what they can reveal and what they obscure.



AMTE

**AFTERNOON BREAK**

**GRAND BALLROOM GALLERY**

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

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



AMTE

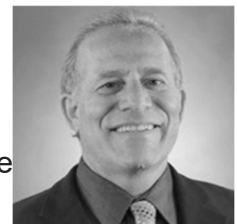
**JUDITH E. JACOBS LECTURE**

**GRAND BALLROOMS A - D**

**Grappling with the Tensions Between Building Foundations and Encouraging Change: What Does it Mean to Belong to X? (Where X might be Research Orientation, a Thought Group or AMTE.)**

*Randy Philipp, San Diego State University*

How do we understand and learn from the past while continuing to evolve? Drawing upon commitments and examples from my career, I will address the challenges we experience as we seek to grow while simultaneously building upon the scholarly traditions, ideas, and organizations that serve as the foundations on which we find traction to move forward.



AMTE

**BREAKFAST**

**GRAND BALLROOMS C/D**

Join colleagues for breakfast and informal conversation.

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



# OVERVIEW OF SATURDAY, FEBRUARY 4, 2023

	8:15 AM – 9:00 AM	9:15 AM - 10:15 AM	10:30 AM - 12:30 PM	11:45 AM - 12:30 PM
<b>St. Charles A</b>	156. <i>Using CODAP to Investigate Sociopolitical Issues in Secondary Mathematics Classrooms</i> - Cole		182. <i>Implementing Digital Curricula in Elementary Mathematics Classrooms: Discussion of a Case Study</i> - Rhine, Driskell, Wheeler & Harrington	197. <i>Investigating the Cognitive Demand of Integrated STEM Tasks: Learning Mathematics, Science, and Coding with Robotics</i> - Conner, Alibek & Drimalla
<b>St. Charles B</b>	157. <i>Using Desmos Polygraphs to Elicit Student Thinking to Facilitate the Act of Defining</i> - Boyd & Nirode	169. <i>Professional Development (Report Session)</i>	183. <i>Mathematics Pedagogy (Report Session)</i>	198. <i>Supporting Elementary Preservice Teachers to Develop their Pedagogical and Content Knowledge in a Geometry Course</i> - Yavuz & Galindo
<b>Astor Ballroom I</b>	158. <i>Developing Prospective Mathematics Teacher Noticing through Lesson Debriefings</i> - Cannon, Teuscher & Christensen	170. <i>Collaborative Practitioner Inquiry as a Source of Career Long Professional Learning</i> - Jasien, Amick, Bush & Mohr-Schroeder	184. <i>Creating a Community of Coaches through Online Video Coaching Clubs</i> - Kruger & Gillespie	199. <i>Beyond the Numbers</i> - Poling
<b>Astor Ballroom II</b>	159. <i>Recruitment and Retention: Practices of Productive Institutions (Featured MTEP Session)</i> - Barrett	171. <i>Leveraging Scripting Tasks Centered in Discretionary Spaces to Learn to Teach for Justice</i> - Karr & Bolyard	185. <i>Development of Mathematics Teacher Educators (Report Session)</i>	200. <i>Learning to Notice in Video Clubs: Preservice Teacher Noticing During a Varied Field Experience</i> - Cooper, Crowley & Warren
<b>Astor Ballroom III</b>	160. <i>Embracing a Partnership Approach to Supporting K-8 Mathematics Teacher Leaders to Catalyze Change</i> - Bush, Rutledge & Boston	172. <i>There and Back Again: Discussing the Residual Impact of Emergency Remote Teaching</i> - Harrington, Rhine, Wheeler & Driskell	186. <i>Enhancing Learning and Assessment through Gameplay</i> - Duarte & Hunt	201. <i>Secondary Mathematics Teachers' Dispositions Toward Students' Agency</i> - Wambua
<b>Grand Ballroom A</b>		173. <i>Equity, Social Justice, and Mathematics Teacher Education (Report Session)</i>	187. <i>Exploring Identity and Action via Working Definitions: Political Conocimiento in a Professional Learning Community</i> - Myers, Gutierrez & Kokka	202. <i>Whiteness and Anti-Critical Race Theory Legislation: What Is the Role of Mathematics Teacher Educators?</i> - Warburton & Orr
<b>Grand Ballroom B</b>	161. <i>Rural STEM Teacher Preparation and Retention: Lessons Learned from a Collaborative Project</i> - Franz, Hubbard & Whitfield	174. <i>Mathematics Content, Curriculum, &amp; Pedagogy (Report Session)</i>	188. <i>Math Education Policy, Program Issues, &amp; Pedagogy (Report Session)</i>	203. <i>Elementary Teacher Candidates' Reflections on Rehearsing and Enacting Whole Class Discussion</i> - Bacak & Colonese
<b>Grand Ballroom C/D</b>		175. <i>Presidential Panel on Equity in Mathematics Teacher Education: Challenges and Stories of Success</i> - Watkins, Glandfield, Jones, & Dykema		

	8:15 AM – 9:00 AM	9:15 AM - 10:15 AM	10:30 AM - 12:30 PM	11:45 AM - 12:30 PM
<b>St. Louis</b>	162. <i>A Framework Connecting Research Based Practices in Mathematics Education to Universal Design for Learning Guidelines</i> - Phaiah & Keazer	176. <i>Mathematical “Mirror Logic”:</i> Preservice Mathematics Teachers’ Thinking About Radian Angle Measure in Light Reflection Context - Alyami	189. <i>What’s Your Function? Four Reflections on Implementing the Same Function Tasks in Methods and Content Courses</i> - Lee, Watkins, Galanti & Kochmanski	204. <i>How can Math Teachers Praise Better? Understanding Teacher Praise and Mathematical Competence</i> - Ruef & Sun
<b>St. Ann</b>	163. <i>Connecting Technology Research Recommendations to Mathematics Teacher Educator Practices: An AMTE Technology Committee Report</i> - AMTE Technology Committee	177. <i>Upgrading Learning for Teachers in Real Analysis (ULTRA) in Action</i> - Ilaria & Hummer	190. <i>“What Would That Look Like?”: Fostering Meaningful Connections Between Cooperating Teachers, Candidates, and Teacher Educators</i> - Kwon, Leshin & Malamut	205. <i>Faculty and Student Perceptions of Mentoring Development of Preservice K-8 Teachers’ Mathematical and Professional Identities</i> - Maher, Nguyen, An & Chamblee
<b>Bourbon</b>	164. <i>MatHistories, Mathematics Teacher Efficacy, and Reconciling Relationships with Mathematics in an Elementary Mathematics Methods Course</i> - Amidon, Monroe, Winfun-Cook & Amidon	178. <i>Organizing Professional Development for Improved Job Satisfaction</i> - Borden	191. <i>Change of Plans: Expecting the Unexpected</i> - Harrison	206. <i>Design Choices: Math Instructional Coaches Use of Digital Simulation in Professional Development</i> - Benoit & Barno
<b>Burgundy</b>		179. <i>First Impressions Matter: What Prospective Teachers Notice in Curriculum Materials</i> - Quaisley, Block & Males	192. <i>Moving Beyond Performative Allyship to Support LGBTQ+ Students, Teachers, and Mathematics Teacher Educators</i> - Garner, Koestler, Lee-Hassan, Whipple & Pruitt-Britton	207. <i>Supporting Mathematics Department Colleagues to Implement Equity Minded and Active Mathematics Teaching Practices</i> - Marzocchi, Cao, Filice, Hofstetter & Luna Flores
<b>Toulouse A</b>	165. <i>Lesson Plays as a Professional Development Tool for Engendering Inclusive Inquiry Instructional Practices</i> - Alzaga Elizondo & Ellis	180. <i>“Unsettling Folks” to Move Towards Antiracist Praxis through Collaborative Mathematics Teacher Educator Self-Study</i> - Woods & Donaldson	193. <i>Highlighting the Work of Louisiana Mathematics Teacher Educators</i> - AMTE Membership Committee	208. <i>What Was Significant? Prospective Teachers’ Perceptions of Enacted Number Talks</i> - Pak, Cavanna & Jackson
<b>Toulouse B</b>	166. <i>Supporting Teachers’ Learning through Integrating Rough Drafts and Revising into Mathematics Teacher Education Coursework</i> - Jansen, Wolfe, Kalinec-Craig, Wickstrom, Druken & Wills		194. <i>One Mathematics Culture Unit, Three Modifications</i> - Silva, Eley, White & Maldonado Rodriguez	209. <i>Preservice Teachers’ Dispositions toward Detracking Mathematics: Four Cases of Future Middle School Math Teachers</i> - Sternberg
<b>Bienville</b>	167. <i>In The Moment Coaching Triads: Supporting Alignment Between Teacher Preparation Programs and Student Teaching Placements</i> - Sun & Stoehr	181. <i>Developing Pedagogical Empathy in Rehearsal Debriefs</i> - Munson	195. <i>Exploring Secondary Mathematics Preservice Teachers’ Perceptions of Real Time Coaching</i> - Arbaugh, Do, Bieda & Cirillo	210. <i>Make Your Math Face: Engaging Preservice Elementary Teachers in Overcoming Math Anxiety</i> - Wesley
<b>Iberville</b>	168. <i>Incorporating Video Cases into Secondary Methods, Content, and Technology Courses</i> - Lovett, Cayton, Dick, Lee, Yalman Ozen, Fletcher, Bailey, Muthitu & Brown		196. <i>Approximating the “Five Practices” Using Desmos Technology</i> - Meyer, McCulloch & Lovett	

**Session 156** **St. Charles A**  
**Teaching and Learning with Technology**  
**Extended Session (8:15 AM – 10:15 AM)**

**Using CODAP to Investigate Sociopolitical Issues in Secondary Mathematics Classrooms**

Sofia Jean Cole, *University of Northern Colorado*

This workshop focuses on how CODAP can be incorporated in statistics and probability methods classes. Through the context of statistical investigations of sociopolitical issues, participants will be introduced to tools and resources designed to support student learning through CODAP.

**Session 157** **St. Charles B**  
**Mathematics Content and Curriculum**  
**Individual Session**

**Using Desmos Polygraphs to Elicit Student Thinking to Facilitate the Act of Defining**

Brian Boyd, *Wright State University*  
 Wayne Nirode, *Miami University*

This session shares results from research of students engaging in an introductory Desmos Polygraph activity. Participants will learn how to use student questions from the Polygraph to facilitate the act of defining. Bring your own device for a hands-on experience.

**Session 158** **Astor Ballroom I**  
**Practice-Based Experiences for Prospective Teachers**  
**Individual Session**

**Developing Prospective Mathematics Teacher Noticing through Lesson Debriefings**

Tenille Cannon, *Brigham Young University*  
 Dawn Teuscher, *Brigham Young University*  
 Sharon Christensen, *Brigham Young University*

Preservice teachers learning to facilitate mathematics instruction involves shifting their lenses from observing as students to noticing as teachers. We report on how lesson debriefings provide opportunities to notice important teaching practices and a possible learning trajectory for preservice teachers.

**Session 159** **Astor Ballroom II**  
**Mathematics Education Policy and Program Issues**  
**Featured MTEP Individual Session**

**Recruitment and Retention: Practices of Productive Institutions**

Diane Barrett, *University of Hawai'i at Hilo*

This session is to share successful practices and programmatic features of mathematics teacher education programs that produce above average numbers of mathematics teacher candidates. Specific attention will be given to programmatic features that might be replicated at other institutions.

**Session 160** **Astor Ballroom III**  
**Collaborations and Partnerships**  
**Individual Session**

**Embracing a Partnership Approach to Supporting K-8 Mathematics Teacher Leaders to Catalyze Change**

Sarah B Bush, *University of Central Florida*  
 Treshonda Rutledge, *University of Central Florida*  
 Melissa D Boston, *Duquesne University*

We share our development of a meaningful partnership between university, school district, and non-profit to support K-8 Mathematics Teacher Leaders through an Ed.D. program and Teacher Leader Academy to flourish as confident advocates, positioned to catalyze change in their schools/district.

**Session 161** **Grand Ballroom B**  
**Practice-Based Experiences for Prospective Teachers**  
**Individual Session**

**Rural STEM Teacher Preparation and Retention: Lessons Learned from a Collaborative Project**

Dana Pomykal Franz, *Mississippi State University*  
 Keith Hubbard, *Stephen F. Austin State University*  
 Jennifer Whitfield, *Texas A&M University*

This session will include initial results from a collaborative research project examining mathematics teacher preparation, recruitment, and retention across 14 rural serving programs. Presenters will share strategies used and lessons learned from a nation-wide study of 14 teacher preparation programs.

**Session 162** **St. Louis**  
**Mathematics Pedagogy**  
**Individual Session**

**A Framework Connecting Research Based Practices in Mathematics Education to Universal Design for Learning Guidelines**

Jennifer Ann Phaiah, *Sacred Heart University*  
 Lindsay M Keazer, *Sacred Heart University*

In mathematics education, while numerous research-based practices have shown gains, complex challenges necessitate an integrated approach. We propose a framework that maps research-based practices onto the Universal Design for Learning guidelines, offering a network of considerations for improving equitable access.

**Session 163**  
**AMTE Committee Session**

St. Ann

***Connecting Technology Research Recommendations to Mathematics Teacher Educator Practices: An AMTE Technology Committee Report***

AMTE Technology Committee

The updated AMTE Position on Technology overviewed five research-based ways MTEs should incorporate technology in their work. This presentation connects each of the five recommendations to specific practices MTE can incorporate, using examples from recent published sources supplemented with the committee's own experience working with technology.

**Session 164**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Individual Session**

Bourbon

***MathHistories, Mathematics Teacher Efficacy, and Reconciling Relationships with Mathematics in an Elementary Mathematics Methods Course***

Joel Amidon, *The University of Mississippi*  
Ann Elizabeth Monroe, *The University of Mississippi*  
Candies Winfun-Cook, *The University of Mississippi*  
Kathryn Amidon, *The University of Mississippi*

The presenters contend a preservice teacher's meaningful experiences with mathematics influence their overall relationship with mathematics, and connect to measures of efficacy in teaching mathematics. We will present efforts at reconciling relationships with mathematics within an elementary mathematics methods course.

**Session 165**  
**Professional Development**  
**Individual Session**

Toulouse A

***Lesson Plays as a Professional Development Tool for Engendering Inclusive Inquiry Instructional Practices***

Tenchita Alzaga Elizondo, *Portland State University*  
Brittney Ellis, *Portland State University*

In our session, we discuss how lesson plays are used in a PD program to support post-secondary instructors to productively work with student thinking in whole-class discussions while also attending to practices that can support more inclusive classroom environments.

**Session 166**  
**Mathematics Pedagogy**  
**Extended Session (8:15 AM – 10:15 AM)**

Toulouse B

***Supporting Teachers' Learning through Integrating Rough Drafts and Revising into Mathematics Teacher Education Coursework***

Amanda Jansen, *University of Delaware*  
Jennifer A Wolfe, *The University of Arizona*  
Crystal Kalinec-Craig, *University of Texas at San Antonio*  
Megan Hope Wickstrom, *Montana State University*  
Bridget Kinsella Druken, *California State University, Fullerton*  
Theresa Wills, *George Mason University*

Panelists from six universities will offer ways that integrating rough drafts and revising can support teachers' learning about mathematics and pedagogy. Participants will engage in drafting and revising a framework of Rough Draft Math Practices for Mathematics Teacher Education.

**Session 167**  
**Practice-Based Experiences for Prospective Teachers**  
**Individual Session**

Bienville

***In The Moment Coaching Triads: Supporting Alignment Between Teacher Preparation Programs and Student Teaching Placements***

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

The session focuses on an in the moment coaching model designed to build greater alignment between teacher preparation programs and field placement sites. This session will also discuss how this model can be modified for other teacher professional development programs.

**Session 168**  
**Teaching and Learning with Technology**  
**Extended Session (8:15 AM – 10:15 AM)**

Iberville

***Incorporating Video Cases into Secondary Methods, Content, and Technology Courses***

Jennifer Lovett, *Middle Tennessee State University*  
Charity Cayton, *East Carolina University*  
Lara Dick, *Bucknell University*  
Hollylynn S Lee, *North Carolina State University*  
Demet Yalman Ozen, *Middle Tennessee State University*  
Samantha Fletcher, *Middle Tennessee State University*  
Nina G Bailey, *University of North Carolina at Charlotte*  
Purity Kendi Muthitu, *North Carolina State University*  
Abigail Brown, *East Carolina University*

Engage in tasks for a variety of courses that incorporate authentic videos of secondary students to develop PSTs' pedagogical skills (noticing, 5 practices) on technology tasks. Also, hear from a panel on how they incorporate these tasks into different courses.

**Session 169**  
**Professional Development**  
**Report Session**

St. Charles B

***Elementary Mathematics Specialists as Informal Teachers Leaders: Engagement and Agency***

Susan Swars Auslander, *Georgia State University*  
 Carla Lynn Tanguay, *Georgia State University*  
 Kayla Daffinson Myers, *University of West Georgia*  
 Debra Smith Fuentes, *Georgia State University*

Research findings illuminate how Elementary Mathematics Specialists (N=27) as informal teacher leaders were engaging and practicing agency in their work, especially coaching, and how a professional development project influenced the content and practices of these efforts.

***Instructional Coaching and Teacher Perceptions of Curriculum-Embedded Mathematics Professional Learning Programs***

Ethan Smith, *University of Delaware*

In the context of curriculum-embedded professional learning programs, we examine how aspects of the teacher-coach relationship predict how mathematics teachers perceive the quality of their professional learning and curriculum. Results indicate a nuanced role of coaching in supporting teacher learning.

***Unpacking the Work of an Effective Mathematics Coach: Attending to Teachers' Attributes***

Dionne Cross Francis, *University of North Carolina at Chapel Hill*  
 Kathryn Habib, *University of North Carolina at Chapel Hill*

In this study we describe a coaching model designed to attend to the unique ways teachers' knowledge, beliefs, emotions and identity interact to inform instructional planning and enactment. We describe the model and show how it influenced teacher learning.

**Session 170**  
**Professional Development**  
**Individual Session**

Astor Ballroom I

***Collaborative Practitioner Inquiry as a Source of Career Long Professional Learning***

Lisa Amick, *University of Kentucky*  
 Lara Jasien, *CPM Educational Program*  
 Sarah B Bush, *University of Central Florida*  
 Margaret J Mohr-Schroeder, *University of Kentucky*

Participants will gain resources for supporting reflective, innovative teaching as they learn about and experience activities from two practitioner inquiry programs that bring together teachers from across the nation to collaborate on identifying and inquiring into shared problems of practice.

**Session 171**  
**Practice-Based Experiences for Prospective Teachers**  
**Individual Session**

Astor Ballroom II

***Leveraging Scripting Tasks Centered in Discretionary Spaces to Learn to Teach for Justice***

Joshua Harlan Karr, *West Virginia University*  
 Johnna Bolyard, *West Virginia University*

This session explores using discretionary spaces of teaching as the subject matter of scripting tasks seeking ways to support elementary and secondary mathematics teacher candidates to enact practice that disrupts normalized systems of injustice.

**Session 172**  
**Teaching and Learning with Technology**  
**Discussion Session**

Astor Ballroom III

***There and Back Again: Discussing the Residual Impact of Emergency Remote Teaching***

Rachel Harrington, *Western Oregon University*  
 Steve Rhine, *Pacific University*  
 Ann Wheeler, *Texas Woman's University*  
 Shannon O Driskell, *University of Dayton*

Join us to discuss the impact that emergency remote learning and its aftermath have had on teacher preparation. Come and discuss changes you have made, what worked, and what we want to sustain.

**Session 173** **Grand Ballroom A**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Report Session**

***Impact of Secondary Mathematics Preservice Teachers' Engagement in Geometry Focused Ethnomodeling Explorations***

Siddhi Desai, *Fairleigh Dickinson University*  
Farshid Safi, *University of Central Florida*

We report on a study in which secondary preservice teachers engaged in a sequence of geometry-focused ethnomodeling explorations. Through such intentional integrations teacher educators can advocate for and model the teaching and learning mathematics in more connected and humanizing ways.

***Preservice Teachers' Experience with a Task Designed to Elicit Empathy for English Language Learners***

Zareen Gul Rahman, *James Madison University*

Come learn teaching practices in a methods course for middle school prospective teachers. Prospective teachers engaged in an activity to elicit empathy for mathematics learning experiences of ELLs. Come reflect, share, and brainstorm ideas for your own courses.

***Supporting Preservice Mathematics Teachers in Culturally Responsive Lesson Design***

David Pugalee, *University of North Carolina at Charlotte*  
Jordan Trombly Register, *University of North Carolina at Charlotte*

Anthony Fernandes, *University of North Carolina at Charlotte*

This report will share the findings of a study that engaged middle and secondary PSTs in designing culturally responsive mathematics lessons. Products include two interconnected planning and observation tools modified from Aguirre and Zavala's (2013) CRMT tool.

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**Session 174** **Grand Ballroom B**  
**Mathematics Content and Curriculum**  
**Report Session**

***Co-Teaching in Elementary Mathematics***

Laurel Ann Dias, *University of Utah*

Through lesson observations and teacher interviews, I investigate how one teacher pair uses a variety of co-teaching models in an elementary mathematics classroom. Findings illuminate how different co-teaching models provide students access to cognitively demanding math learning opportunities.

***Criteria for Selecting Math Tasks: A Novice and Expert Comparison***

Maria Nielsen Stewart, *University of Missouri*

This brief report shares findings from a qualitative study comparing the criteria novice and expert Algebra teachers have in mind when looking for and selecting math tasks to use in their classrooms.

***Teaching that Promotes Student Noticing of Mathematically Important Features of Quadratic Functions***

Charles Hohensee, *University of Delaware*

Yue Ma, *University of Delaware*

Srujana Vinaykumar Acharya, *University of Delaware*

This report examines important features of quadratic functions that teaching promotes students to notice that may be non-self-evident to teachers. Identifying these non-self-evident features informs the field about which important features teachers should be more purposefully promoting students to notice.

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**Session 175** **Grand Ballroom C/D**  
**AMTE President Exchange**

***Presidential Panel on Equity in Mathematics Teacher Education: Challenges and Stories of Success***

Laura Watkins, *American Mathematics Association of Two-Year Colleges*

Florence Glandfield, *TODOS Mathematics for ALL*

Shelly Jones, *Benjamin Banneker Association*

Kevin Dykema, *National Council of Teachers of Mathematics*

This session will involve a panel discussion of presidents of major mathematics education organizations with a focus on equality in mathematics teacher education. Presidents from AMATYC, TODOS, BBA, and NCTM will lead the panel discussions.

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**Session 176** **St. Louis**  
**Mathematics Content and Curriculum**  
**Discussion Session**

***Mathematical “Mirror Logic”: Preservice Mathematics Teachers’ Thinking About Radian Angle Measure in Light Reflection Context***

Hanan Alyami, *Purdue University Fort Wayne*

Despite many reforms towards integrated Science, Technology, Engineering, and Mathematics (iSTEM), mathematics remains underrepresented in iSTEM curriculum. I share how emphasizing mathematics in an iSTEM curricular approach contributes to mathematical thinking, and brings mathematics into relationship with other STEM disciplines.

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**Session 177** **St. Ann**  
**Mathematics Content and Curriculum**  
**Individual Session**

***Upgrading Learning for Teachers in Real Analysis (ULTRA) in Action***

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

This session will include an interactive discussion to share how we revised our BSED program to include to content-pedagogy courses using the ULTRA materials and principles. We will also share student work from our first implementation.

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**Session 178** **Bourbon**  
**Professional Development**  
**Individual Session**

***Organizing Professional Development for Improved Job Satisfaction***

Margaret Leak Borden, *North Carolina State University*

This session will examine how effective practices for student learning can inform the design of professional development for mathematics teachers. We will collaboratively imagine how this model can improve retention by valuing teacher expertise and increasing teacher autonomy.

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**Session 179** **Burgundy**  
**Mathematics Pedagogy**  
**Individual Session**

***First Impressions Matter: What Prospective Teachers Notice in Curriculum Materials***

Kelsey Quaisley, *University of Nebraska-Lincoln*  
Scott Block, *University of Nebraska-Lincoln*  
Lorraine Marie Males, *University of Nebraska-Lincoln*

Our interactive session focuses on what prospective secondary mathematics teachers notice when they are interacting with curriculum materials, and how their initial impressions of curriculum materials influence their later understandings of curriculum materials.

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**Session 180** **Toulouse A**  
**Development of Mathematics Teacher Educators**  
**Discussion Session**

***“Unsettling Folks” to Move Towards Antiracist Praxis through Collaborative Mathematics Teacher Educator Self-Study***

Dawn M Woods, *Oakland University*  
Sara Donaldson, *Wheaton College*

In this discussion session, we examine how mathematics teacher educators leverage self-study methodology to examine identities, interrogate biases, and re-envision approaches in preparing mathematics teachers. This approach supports MTEs and PK-12 teachers to disrupt bias and racism in schools.

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**Session 181** **Bienville**  
**Professional Development**  
**Discussion Session**

***Developing Pedagogical Empathy in Rehearsal Debriefs***

Jen Munson, *Northwestern University*

This session focuses on how teachers can develop pedagogical empathy through rehearsal debriefs. Using data from secondary mathematics teachers’ debriefs, we will share how teachers’ emotions influenced and contributed to learning opportunities. We will discuss implications for practice-based professional development.



**Session 182** **St. Charles A**  
**Teaching and Learning with Technology**  
**Discussion Session**

**Implementing Digital Curricula in Elementary Mathematics Classrooms: Discussion of a Case Study**

Steve Rhine, *Pacific University*  
 Shannon O Driskell, *University of Dayton*  
 Ann Wheeler, *Texas Woman's University*  
 Rachel Harrington, *Western Oregon University*

Join us to examine the instructional decisions of an elementary mathematics teacher who implements digital curricula with 3rd grade students. Required to use a scripted curriculum, she modifies the curriculum to more effectively engage her students.

**Session 183** **St. Charles B**  
**Mathematics Pedagogy**  
**Report Session**

**Making Sense of Noticing: Conceptualizing Mathematics and Science Teacher Noticing**

Tracy L Weston, *Middlebury College*

We report a synthesis of mathematics and science teacher noticing research. We synthesized the terminology and frameworks that have been used to conceptualize/operationalize teacher noticing from 2002-2022 to help Mathematics Teacher Educators gain clarity about variations in ideas about noticing.

**Preparing Beginning Teachers for Effectively Teaching Mathematical Modeling Through Curricular and Professional Noticing**

Rui Kang, *Georgia College & State University*

This presentation reports a study that examined how beginning teachers' understandings of mathematics modeling developed as they analyzed and enacted modeling tasks and made sense of the tasks' curricular and pedagogical opportunities through the lens of curricular and professional noticing.

**Supporting Teachers' Use of Contextual Problems to Ground Students' Mathematical Understanding**

Luke Reinke, *University of North Carolina at Charlotte*

By analyzing discourse surrounding contextualized problems, we identified a particular teacher move that explicitly grounds students' mathematical work to their understandings of problem contexts. We argue this explicit contextualization is essential for equitable implementation of contextualized problem-based instruction.

**Session 184** **Astor Ballroom I**  
**Development of Mathematics Teacher Educators**  
**Discussion Session**

**Creating a Community of Coaches through Online Video Coaching Clubs**

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

In this session, we describe our model of synchronous online video clubs for mathematics coaches, and how this model created collaborative communities of new and experienced coaches that were leveraged to collectively investigate content-focused coaching.

**Session 185** **Astor Ballroom II**  
**Development of Mathematics Teacher Educators**  
**Report Session**

**Struggling with Struggle: Two Collaborating Mathematics Teacher Educators Share Their Collaboration Facilitating Productive Struggle Opportunities**

Melissa Sutherland, *Purdue University*  
 Betsy Berry, *Purdue University Fort Wayne*

In this session, we will share our journey of collaboration as we focus on facilitating our students' productive struggle in our mathematics content courses for elementary teachers. We will discuss our progress, our successes and challenges, and seek participant input.

**(What) Can We Learn from Teachers' Decisions and Ways of Justifying their Practice?**

Amanda Marie Brown, *University of Michigan*  
 Patricio G Herbst, *University of Michigan*  
 Robert G Beckemeyer, *University of Michigan*  
 Andrew Spiteri, *University of Michigan*

We share data from 524 teachers from instruments designed to gather information about how teachers reason about student work in instructional situations drawn from Algebra 1. We consider how findings from this data inform the work of teacher educators.

**Session 186** **Astor Ballroom III**  
**Mathematics Content and Curriculum**  
**Individual Session**

**Enhancing Learning and Assessment through Gameplay**

Alejandra Duarte, *North Carolina State University*  
 Jessica H Hunt, *North Carolina State University*

In this session participants will explore how a game-embedded curriculum can enhance students' opportunities for deep mathematical thinking. They will also discuss how teachers can leverage students' gameplay for formative assessment and targeted instructional decisions.

**Session 187** **Grand Ballroom A**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Individual Session**

***Exploring Identity and Action via Working Definitions: Political Conocimiento in a Professional Learning Community***

Marrielle Myers, *Kennesaw State University*  
Rochelle Gutierrez, *University of Illinois Urbana-Champaign*  
Kari Kokka, *University of Nevada, Las Vegas*

We explore how teachers' understandings of equity, justice, antiracism, abolition, and rehumanizing mathematics were entangled with our broader goals of developing political knowledge for teaching mathematics. Attendees will unpack their understandings of these terms and examine data from teacher participants.

**Session 188** **Grand Ballroom B**  
**Mathematics Education Policy and Program Issues**  
**Report Session**

***Black Women's Liberatory Mathematics Pedagogy***

Elzena McVicar, *University of Washington*

What can we learn from the liberatory mathematics pedagogy of Black women elementary mathematics teachers? This session highlights research on elements of Black feminist mathematics pedagogy by studying how lived mathematics and racial experiences influences Black women's elementary mathematics practices.

***Preservice Teachers' Reactions to Reading Mathematics Education Professional Organizations' Statements on Racial Injustice***

Daniel Lee Clark, *Western Kentucky University*

Elementary preservice teachers completed an assignment where they reacted to leading mathematics education professional organizations' statements on racial injustice. A symbolic convergence theory framework will be used to understand what the preservice teachers took from the statements.

***The Road Less Traveled: Examining Alternative Routes to Elementary Teacher Preparation in Mathematics***

Kelly Overby Byrd, *University of South Alabama*  
Susan N Ferguson, *University of South Alabama*

We will share participant identified strengths and deficits of alternative teacher certification programs surrounding preparation to teach mathematics, approaches to and recommendations for content knowledge, coursework, concept fluency, depth of knowledge, and content pedagogy related to the different mathematical domains.

**Session 189** **St. Louis**  
**Mathematics Pedagogy**  
**Individual Session**

***What's Your Function? Four Reflections on Implementing the Same Function Tasks in Methods and Content Courses***

Alees Lee, *Weber State University*  
Jonathan D Watkins, *Ball State University*  
Terrie Galanti, *University of North Florida*  
Nicholas Kochmanski, *University of North Carolina at Greensboro*

Four early career mathematics teacher educators from different institutions reflect on implementing the same function tasks in methods and content courses for different aims. We seek to begin conversations around incorporating content in methods courses and pedagogy in content courses.

**Session 190** **St. Ann**  
**Collaborations and Partnerships**  
**Discussion Session**

***"What Would That Look Like?": Fostering Meaningful Connections Between Cooperating Teachers, Candidates, and Teacher Educators***

Faith Kwon, *Stanford University*  
Miriam Simone Leshin, *Stanford University*  
James Malamut, *Stanford University*

This Working Group will invite mathematics teacher educators to collectively brainstorm possibilities within our math methods courses for fostering meaningful connections between cooperating teachers and teacher candidates and for more coherently aligning theory and practice in math instruction.

**Session 191** **Bourbon**  
**Mathematics Pedagogy**  
**Individual Session**

***Change of Plans: Expecting the Unexpected***

Taylor Ray Harrison, *Northwest Missouri State University*

An examination of how and why secondary statistics teachers respond to unexpected events in the classroom, focusing on adjustments teachers make to lesson plans. Includes video excerpts of classroom instruction and interviews.

**Session 192** **Burgundy**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Discussion Session**

***Moving Beyond Performative Allyship to Support LGBTQ+ Students, Teachers, and Mathematics Teacher Educators***

Brette Garner, *University of Denver*  
Courtney Koestler, *Ohio University*  
Alexa Lee-Hassan, *University of Illinois Chicago*  
Kyle S Whipple, *University of Wisconsin-Eau Claire*  
Tiffini Pruitt-Britton, *American Institutes for Research*

In this session, we will discuss how to meaningfully support and advocate for LGBTQ+ students and educators. Specifically, we will discuss how to move beyond surface level gestures (performative allyship) to take concrete actions that support and sustain LGBTQ+ communities (accompliceship).

**Session 193** **Toulouse A**  
**AMTE Committee Session**

***Highlighting the Work of Louisiana Mathematics Teacher Educators***

AMTE Membership Committee

Join us to hear about the important work of MTEs right here in Louisiana. You'll have the opportunity to learn new ideas, pose questions, and consider implications for your own work as an MTE.

**Session 194** **Toulouse B**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Individual Session**

***One Mathematics Culture Unit, Three Modifications***

Juanita M Silva, *Texas State University*  
Peter Madison Eley, *Fayetteville State University*  
Dorothy Y White, *University of Georgia*  
Luz A Maldonado Rodríguez, *Texas State University*

Teaching mathematics methods courses with an explicit focus on culture and mathematics requires reflection and analysis by MTEs. This session describes modifications to a Cultural Awareness Unit at two different universities to encourage PSTs to reflect on power and privilege.

**Session 195** **Bienville**  
**Practice-Based Experiences for Prospective Teachers**  
**Individual Session**

***Exploring Secondary Mathematics Preservice Teachers' Perceptions of Real Time Coaching***

Fran Arbaugh, *Pennsylvania State University*  
Seonmi Do, *Pennsylvania State University*  
Kristen Bieda, *Michigan State University*  
Michelle Cirillo, *University of Delaware*

We engaged in real time coaching during secondary preservice teachers' teaching episodes in an early field experience. In this session, we present findings and engage in discussions about the preservice teachers' perspectives on how real time coaching benefited their learning.

**Session 196** **Iberville**  
**Teaching and Learning with Technology**  
**Extended Session (10:30 AM – 12:30 PM)**

***Approximating the "Five Practices" Using Desmos Technology***

Dan Meyer, *Desmos*  
Allison McCulloch, *University of North Carolina at Charlotte*  
Jennifer Lovett, *Middle Tennessee State University*

Engage in a high-fidelity simulation of the 5 Practices you can implement with secondary teachers. We will approximate this work in such a way that allows teachers to think about and discuss the choices they are making. Bring a laptop.

**Session 197** **St. Charles A**  
**Collaborations and Partnerships**  
**Individual Session**

***Investigating the Cognitive Demand of Integrated STEM Tasks: Learning Mathematics, Science, and Coding with Robotics***

AnnaMarie Conner, *University of Georgia*  
 Aida Alibek, *University of Georgia*  
 James Drimalla, *University of Georgia*

Come engage with integrated STEM and robotics tasks as we problematize the cognitive demand of integrated tasks at the elementary level. We will examine the cognitive demand of coding and mathematics tasks as set up and enacted with elementary students.

**Session 198** **St. Charles B**  
**Mathematics Content and Curriculum**  
**Individual Session**

***Supporting Elementary Preservice Teachers to Develop their Pedagogical and Content Knowledge in a Geometry Course***

Selim Yavuz, *Indiana University*  
 Enrique Galindo, *Indiana University*

We share highlights from the ways in which we support elementary preservice teachers to develop their pedagogical and content knowledge in a geometry course. We report findings about their growth understanding quadrilaterals as evidenced by the van Hiele levels displayed.

**Session 199** **Astor Ballroom I**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Individual Session**

***Beyond the Numbers***

Lisa Poling, *Appalachian State University*

In this session, activities that support critical mathematics education pedagogy will be shared. Participants will engage in select contextual social justice activities, review research data related to student growth, and participate in dialogue focused on advancement of this research agenda.

**Session 200** **Astor Ballroom II**  
**Practice-Based Experiences for Prospective Teachers**  
**Individual Session**

***Learning to Notice in Video Clubs: Preservice Teacher Noticing During a Varied Field Experience***

Sandi Cooper, *Baylor University*  
 Brandy Crowley, *Emporia State University*  
 Kenley Ritter, *Baylor University*  
 Michael Warren, *Baylor University*

This session will focus on the implementation of a video club to engage preservice teachers in noticing during a summer field experience. The authors will share the analysis of data and lead a discussion of the implications for teacher education.

**Session 201** **Astor Ballroom III**  
**Mathematics Pedagogy**  
**Individual Session**

***Secondary Mathematics Teachers' Dispositions Toward Students' Agency***

Mitchelle M Wambua, *University of Missouri*

Join us in a conversation about teachers' dispositions toward students' mathematical agency. We will discuss how teachers think about students' agency, how they support it in class, and how these dispositions (mis)align with what they learned in their teacher education program.

**Session 202** **Grand Ballroom A**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Symposium**

***Whiteness and Anti-Critical Race Theory Legislation: What Is the Role of Mathematics Teacher Educators?***

Trevor Warburton, *Utah Valley University*  
 Sheila Orr, *Michigan State University*

In this multi-facet symposium, we put three separate projects in conversation with each other to examine how Whiteness surfaces in mathematics teacher education. Participants will engage in conversations to consider MTEs roles in response to anti-CRT legislation.

**Session 203** **Grand Ballroom B**  
**Practice-Based Experiences for Prospective Teachers**  
**Individual Session**

***Elementary Teacher Candidates' Reflections on Rehearsing and Enacting Whole Class Discussion***

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

Rehearsals are one way for teacher candidates to engage in an approximation of the skills necessary for teaching mathematics. In this session, we share teacher candidates' experiences with and reflections on rehearsals and the enactments of lessons in clinic placements.

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**Session 204** **St. Louis**  
**Mathematics Pedagogy**  
**Individual Session**

***How can Math Teachers Praise Better? Understanding Teacher Praise and Mathematical Competence***

Jennifer L Ruef, *University of Oregon*  
Kathy Sun, *Santa Clara University*

This session focuses on (1) better understanding the role of praise in mathematics classrooms to support equitable learning opportunities for students and (2) collectively identifying strategies to support mathematics teachers in strategically using praise.

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**Session 205** **St. Ann**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Individual Session**

***Faculty and Student Perceptions of Mentoring Development of Preservice K-8 Teachers' Mathematical and Professional Identities***

Eryn Michelle Maher, *Georgia Southern University*  
Ha Nguyen, *California State University, Dominguez Hills*  
Tuyin An, *Georgia Southern University*  
Gregory Chamblee, *Georgia Southern University*

We describe a pilot mentoring program intended to increase diversity of K-8 teachers who study mathematics. We share developed resources, including recruitment strategies, mentor/mentee handbook, and a semi-structured adaptive approach to discovering and supporting mentees' interests and needs.

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**Session 206** **Bourbon**  
**Professional Development**  
**Individual Session**

***Design Choices: Math Instructional Coaches Use of Digital Simulation in Professional Development***

Gregory Benoit, *Boston University*  
Erin Barno, *Boston University*

Simulations are an increasingly popular approach for teachers to practice and in this session, participants will experience how a district instructional coach has used digital simulations to reimagine her coaching cycles and teacher professional learning at her school.

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**Session 207** **Burgundy**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Individual Session**

***Supporting Mathematics Department Colleagues to Implement Equity Minded and Active Mathematics Teaching Practices***

Alison S Marzocchi, *California State University, Fullerton*  
Carolynn K Cao, *California State University, Fullerton*  
Michael Filice, *California State University, Fullerton*  
Cedar Hofstetter, *California State University, Fullerton*  
Olga Luna Flores, *California State University, Fullerton*

As mathematics education faculty, colleagues often turn to us to lead department pedagogical innovation initiatives. The TEAM Tool supports faculty in goal-setting and reflection around teaching equity-minded and active mathematics. Participants will experience the tool during a live lesson demonstration.

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**Session 208** **Toulouse A**  
**Mathematics Pedagogy**  
**Individual Session**

***What Was Significant? Prospective Teachers' Perceptions of Enacted Number Talks***

Byungeun Pak, *Utah Tech University*  
Jillian M Cavanna, *University of Hartford*  
Brent Jackson, *WestEd*

Number talks can support ambitious mathematics instruction. To utilize them as a learning opportunity, teacher educators need to understand how prospective teachers perceive number talks. Session participants will discuss 11 prospective teachers' reflections on number talks enacted in fieldwork classrooms.

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**Session 209** **Toulouse B**  
**Equity, Social Justice, and Mathematics Teacher**  
**Education**  
**Individual Session**

***Preservice Teachers' Dispositions toward Detracking Mathematics: Four Cases of Future Middle School Math Teachers***

Kateri A Sternberg, *University of Delaware*

This session shares the stories of four middle school math pre-service teachers who express different dispositions to detracking math classrooms. We will explore ways in which we can support different pre-service teachers in developing more equity-focused dispositions toward detracking.

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**Session 210** **Bienville**  
**Mathematics Content and Curriculum**  
**Individual Session**

***Make Your Math Face: Engaging Preservice Elementary Teachers in Overcoming Math Anxiety***

Whitney Wesley, *Slippery Rock University*

The purpose of this session is to share the outcomes of a case study of the prevalence of math anxiety among pre-service Pk-4 majors. Participants will be engaged in discussion and participate in activities used to address pre-service teachers' anxieties.

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**SATURDAY, FEBRUARY 4, 2023**

**12:30 PM - 1:30 PM**



**LUNCH: WORKING TOWARDS AMTE LONG-TERM GOALS:  
A DISCUSSION WITH AMTE LEADERSHIP**

**GRAND BALLROOMS C/D**

Please join us for lunch and a feedback session.

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



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Caviness, Stephen	Syracuse University	Harbour, Kristin E	University of South Carolina
Cayton, Charity	East Carolina University	Hardison, Hamilton	Texas State University
Cengiz-Phillips, Nesrin	University of Michigan	Harper, Frances K	The University of Tennessee, Knoxville
Chahine, Iman	UMass Lowell	Harrison, Taylor Ray	Northwest Missouri State University
Champion, Joe	Boise State University	Hawley, Lisa A.	Grand Valley State University
Chandler, Kayla	East Carolina University	Hawthorne, Casey	Furman University
Chauvot, Jennifer B	University of Houston	Heacock, Kayla	Ohio University
Chen, Fan	El Paso Community College	Heikila, Tara	Washington State University Vancouver
Chesler, Joshua	California State University, Long Beach	Hertel, Joshua	University of Wisconsin-La Crosse
Colen, Jung	Chadron State College	Hillen, Amy	Kennesaw State University
Colonnese, Madelyn	University of North Carolina at Charlotte	Hohensee, Charles	University of Delaware
Conner, AnnaMarie	University of Georgia	Hood, Christine E.	University of Denver
Contreras, Jose N	Ball State University	Howell, Heather	Educational Testing Service

Huang, Rongjin	Middle Tennessee State University	McLeod, Kevin	University of Wisconsin-Milwaukee
Hudson, Rick A	University of Southern Indiana	McMahon, Mary Troy	North Central College
Huey, Maryann	Drake University	McManus, Christine Anne	Washington State University
Huffman, Amanda	Purdue University	McVicar, Elzena	University of Washington
Hughes, Elizabeth	University of Northern Iowa	Meador, Audrey	West Texas A&M University
Hummer, Jenifer	West Chester University	Meiners, Amanda	Northwest Missouri State University
Jackson, Brent	WestEd	Merritt, Monica	Mount Saint Mary College
Jacobson, Erik	Indiana University	Miller, Jamie-Marie Louise	Eastern Kentucky University
Jansen, Amanda	University of Delaware	Miller, Katherine	University of Massachusetts Lowell
Jarry-Shore, Michael	Boise State University	Mitchell, Morgan Love	University of Houston
Jensen, Jess	California Polytechnic State University	Moldavan, Alesia Mickle	Georgia Southern University
Johnson, Cheryll Crowe	Asbury University	Monastra, Jen Crooks	University of South Carolina
Johnston, Christopher	Cambium Assessment	Moon, Peter F	University of Maryland
Jong, Cindy	University of Kentucky	Morge, Shelby	University of North Carolina Wilmington
Joseph, Manjula	Fresno Pacific University	Morton, Karisma	University of North Texas
Judson-Garcia, Julia	Chandler-Gilbert Community College	Myers, Kayla Daffinson	University of West Georgia
Kamlue, Nitchada	Western Michigan University	Myers, Marrielle	Kennesaw State University
Karr, Joshua Harlan	West Virginia University	Naresh, Nirmala	University of North Texas
Kasmer, Lisa Anne	Grand Valley State University	Newton, Jill	Purdue University
Katt, Susie	Lincoln Public Schools	Nguyen, Giang-Nguyen T	University of West Florida
Kaufman, Bailey Anne	Fordham University	Nirode, Wayne	Miami University
Keiser, Jane M	Miami University	Norton, Anderson III	Virginia Tech University
Kelley Elmore, Traci	University of Texas at San Antonio	Nuzzi, Jessica Tybursky	Montclair State University
Kent, Laura Brinker	University of Arkansas	Odiwuor, Brian	Syracuse University
Kirwan, J Vince	Kennesaw State University	Olanoff, Dana	Widener University
Ko, Yi-Yin (Winnie)	Indiana State University	Orr, Sheila	Michigan State University
Kochmanski, Nicholas	University of North Carolina at Greensboro	Ozgun-Koca, Asli	Wayne State University
Koester, Mark I	Metropolitan State University of Denver	Ozturk, Ayse	The Ohio State University, Newark
Kosko, Karl W	Kent State University	Pak, Byungeun	Utah Tech University
Krause, Gladys	College of William & Mary	Paoletti, Teo	University of Delaware
Krejci, Brooke	University of Wisconsin - River Falls	Park, Hyejin	Drake University
Kulow, Torrey	Portland State University	Pate, Kaleigh H	The University of Alabama
Lambert, Rachel	University of California, Santa Barbara	Peters, Susan	University of Louisville
Lanius, Melinda	Auburn University	Peterson, Blake E	Brigham Young University
LaValley, Bethany	The University of Mississippi	Phaiah, Jennifer Ann	Sacred Heart University
Lavoy, Carrie	University of Kansas	Pinilla, Robyn Kristine	Southern Methodist University
Leatham, Keith R	Brigham Young University	Pitvorec, Kathleen	University of Illinois at Chicago
Lee, Alees	Weber State University	Poling, Lisa	Appalachian State University
Lee, Hollylyne S	North Carolina State University	Polojac-Chenoweth, Denise	Hillsborough County Public Schools
Lee, Hyunjeong	Indiana University	Powers, Robert	University of Northern Colorado
Lee, Melisa Ann	Sam Houston State University	Prasad, Priya Vinata	University of Texas at San Antonio
Lee, Yi-Jung	University of Arkansas	Priest, Shannon	University of Mississippi
Lee-Hassan, Alexa	University of Illinois Chicago	Prosser, Sherri Kay	Austin Peay State University
Lesseig, Kristin	Washington State University Vancouver	Prough, Sam	University of Delaware
Li, Jingxian	University of Southern California	Provost, Amanda	Montclair State University
Lim, Dexter	Tusculum University	Purington, Stephanie B	Marist College
Litke, Erica	University of Delaware	Pynes, D'Anna	University of Michigan
Litster, Kristy	Valdosta State University	Quaisley, Kelsey	University of Nebraska-Lincoln
Liu, Jinqing	University of California Irvine	Rahman, Zareen Gul	James Madison University
Livers, Stefanie D	Missouri State University	Rainwater, Tabatha	The University of Tennessee, Knoxville
Lock, Kayla	Arizona State University	Rathouz, Margaret	University of Michigan-Dearborn
LoPresto, Kevin	Francis Marion University	Ray, Amy	Sam Houston State University
Luczak, Rileigh	Michigan State University	Raygoza, Mary Candace	Saint Mary's College of California
Lynch, Sararose DeVore	Slippery Rock University	Reinke, Luke	University of North Carolina at Charlotte
MacDonald, Beth Loveday	Illinois State University	Reiten, Lindsay	University of Northern Colorado
Magiera, Marta T	Marquette University	Rhine, Steve	Pacific University
Maher, Eryn Michelle	Georgia Southern University	Rhodes, Sam	Georgia Southern University
Mainzer, Emily A	Pennsylvania State University	Rich, Erin E	The University of Alabama
Makowski, Martha	The University of Alabama	Ritter, Kenley B	Baylor University
Males, Joshua R.	Lincoln Public Schools	Rocha, Abby	Arizona State University
Mannix, J. P.	Ball State University	Roscioli, Kate	George Mason University
Marin, Katherine Ariemma	University of Louisville	Rosencrans, Brenda L	Portland State University
Martin, Kristi	Sam Houston State University	Rothrock, Katrina Stullken	University of Wisconsin-Eau Claire
Martin, W Gary	Auburn University	Rupe, Kathryn Mary	Western Washington University
Martínez Hinestroza, José Manuel	Texas State University	Schack, Edna O	Morehead State University
Masingila, Joanna O	Syracuse University	Schmidt, Ashley	University of Central Florida
Massey, Johanna Lee	Alabama A&M University	Scott, Mallika	California State University, Fullerton
Mastrup, Kayce L	University of California Davis	Shaughnessy, Meghan	Boston University
Matranga, Anthony	California State University San Marcos	Shelton, Ryann	Baylor University
Max, Brooke	Purdue University	Sherman, Diana Lynn	Saint Anselm College
Mbewe, Rose	Purdue University	Shih, Jeffrey	University of Nevada, Las Vegas
McCloskey, Andrea	Pennsylvania State University	Simpson, Amber	Binghamton University
McCulloch, Allison	University of North Carolina at Charlotte	Skultety, Lisa	University of Central Arkansas
McKie, Kelly Alexandra	University of Ottawa	Smith, Brian Alexander	University of Michigan



Smith, Erin	The University of Southern Mississippi	Villa, Anthony Muro	University of California, Riverside
Smith, Ryan	Radford University	Vomvoridi-Ivanovic, Eugenia	University of South Florida
Smith, Wendy	University of Nebraska-Lincoln	Waddell Jr, Glenn H	University of Nevada, Reno
Smithy, Montana	Georgia Southern University	Wall, Honora	Concordia University Chicago
Snider, Rachel B	The College of New Jersey	Walsh, Patricia A	Indiana University
Somers, John W.	University of Indianapolis	Walton, Margaret	University of Maryland
Staples, Megan	University of Connecticut	Ward, Jennifer	Kennesaw State University
Stenger, Cynthia L	University of North Alabama	Warshauer, Hiroko K	Texas State University
Stephan, Michelle	University of North Carolina at Charlotte	Watkins, Jonathan D	Ball State University
Sternberg, Kateri A	University of Delaware	Weiland, Travis	University of Houston
Stewart, Maria Nielsen	University of Missouri	Weingarden, Merav	University of New Hampshire
Stoddard, Elyssa	State University of New York at Oneonta	Weiss, Christine H.	University of North Carolina Charlotte
Stump, Sheryl L	Ball State University	Wesley, Whitney	Slippery Rock University
Sturgill, Derek Joseph	University of Wisconsin-Stout	Westby, Kathryn R	Michigan State University
Suazo-Flores, Elizabeth	Purdue University	Whipple, Kyle S	University of Wisconsin-Eau Claire
Suh, Jennifer M	George Mason University	Wieman, Rob	Rowan University
Sullivan, Patrick L	Missouri State University	Wilhelm, Anne Garrison	Southern Methodist University
Sun, Kathy	Santa Clara University	Wilkerson, Trena L.	Baylor University
Sundrani, Anita	University of Houston	Williams, Alison Sydney	San Diego State University
Sutherland, Melissa	Purdue University	Wilson, David C	State University of New York, Buffalo State
Sztajn, Paola	North Carolina State University	Wonsavage, F Paul	University of Florida
Tackie, Nii Ansah	University of Louisiana at Lafayette	Woods, Dawn M	Oakland University
Tanck, Hilary R	High Point University	Woodward, Jerry	Ball State University
Tate, Holly	George Mason University	Wrightsmen, Elizabeth	Texas State University
Taylor, Cynthia E	Millersville University	Yavuz, Selim	Indiana University
Teuscher, Dawn	Brigham Young University	Yeo, Sheunghyun	The University of Alabama
Thomas Zapata, Johana Elizabeth	Washington State University	Yow, Jan A.	University of South Carolina
Thrasher, Emily Plunkett	North Carolina State University	Yurekli, Bilge	University of Pittsburgh
Tidwell, Stephenie	Montclair State University	Zambak, Vecihi Serbay	Monmouth University
Tjoe, Hartono	Pennsylvania State University, Berks	Zbiek, Rose Mary	Pennsylvania State University
Toreky, Carrie	Florida Gateway College	Zelkowski, Jeremy	The University of Alabama
Tremaine, Rachel	Colorado State University	Zhang, Linda Aidong	Louisiana State University Shreveport
Troutd, Melissa	University of Wisconsin-Eau Claire	Zhou, Zhenji	University of Nebraska-Lincoln
Turkovich, Dawn M.	Saint Vincent College	Zimmerman, Stacey	Western Carolina University
Udell, Ashley Lauren	Kansas City, Kansas Public Schools	Zolfaghari, Maryam	Kent State University
Uy, Frederick	California State University	Zuniga-Ruiz, Sandra	University of California, Berkeley
Varley Gutierrez, Maura	The University of Arizona	Рижков, Михайло Aleksij	Klugino-Bashkir Lyceum
Velasco, Richard	University of Oklahoma		

# 2023 AMTE BUSINESS MEETING AGENDA

Friday, February 3, 2023

- A. WELCOME MEGAN BURTON, *AMTE PRESIDENT*, PRESIDING
- B. APPROVAL OF THE MINUTES CYNTHIA TAYLOR
- C. TREASURER AND MEMBERSHIP REPORT ALLYSON HALLMAN-THRASHER  
SHARI STOCKERO
- D. CONFERENCE REPORT JULIE JAMES
- E. YEARLY HIGHLIGHTS MEGAN BURTON
- F. RECOGNITIONS
- G. NEW BUSINESS
- H. INSTALLATION OF NEW BOARD MEMBERS
- I. ADJOURNMENT

# 2022 AMTE BUSINESS MEETING MINUTES

*SATURDAY, FEBRUARY 12, 2022*

*SALON I-II, HILTON LAKE LAS VEGAS RESORT AND SPA, HENDERSON NEVADA*

Megan Burton, President, called the meeting to order at 12:22 p.m. (PST).

## **I. Welcome**

**Megan Burton, AMTE President, Presiding**

Megan Burton started by welcoming everyone to the meeting and noted that voting would occur in chat within the app and not on zoom, for those in attendance virtually.

## **II. Approval of The Minutes**

**Cynthia Taylor, Secretary**

Cynthia Taylor presented the minutes from last year's business meeting from the 2021 Conference.

*Motion to accept the minutes as presented moved by Jenny Bay-Williams and seconded by Suzanne Harper. Motion passed unanimously.*

## **III. Treasurer and Membership Report**

**Sarah Quebec Fuentes, Treasurer**  
**Shari Stockero, Executive Director**

Sarah Quebec Fuentes shared the 2021 fiscal year (FY) financial report. The 2021 FY income was \$268,998.44 and expenses were \$125,769.32. Bank accounts totaled \$499,961.50 as of June 30<sup>th</sup>, 2021. Subtracting the money earmarked for specific purposes leaves \$278,022.85 in deep reserves. A goal for the organization over the past couple of years was to increase the amount in deep reserves. In the past year, we have increased the amount by about \$70,000.

In FY 2021, the Total Income and Total Expenses were less than originally budgeted due to the COVID-19 pandemic. The Board planned the FY 2022 budget to accurately reflect our pre-pandemic income and expenses. The increase in the budgeted Total Income and Expenses is due to sponsoring events for multiple STaR cohorts, as seen in the Communications and Outreach division.

Goals for the upcoming year are to (1) make fiscal decisions that reflect the mission and goals of AMTE, (2) budget responsibly, and (3) continue to increase the amount of money in deep reserves to the amount of one year's operating budget, which is about \$500,000.

Shari reported that current membership is 1053, which is up from last year (1010 members at the same time last year). About 52% of our members pre-registered for the 2022 conference (either in person or virtual). Currently, there are 200 graduate student members and 35 Emeritus members. Current members are from 49 states in the U.S., plus DC, Puerto Rico, and 4 Canadian provinces. In addition, there are members from India, Malaysia, South Africa, Saudi Arabia, Kuwait, and the Philippines. An interesting note is that 268 individuals have been a member for 10 years or more and 38 current members have been a member since 2000 or before.

Shari encouraged everyone to complete the volunteer form and if you do not get a committee assignment one year, to please volunteer the next year. She also asked everyone to complete the conference feedback survey by February 21, 2022 on the conference app.

## IV. Conference Report

Colleen Eddy, *AVP for Conferences*

Colleen Eddy, AVP for Conferences, offered thanks to the 2022 conference committee (Suzanne Harper, Julie James, Lateefa Id-Deen, Gail Stewart, and Gabriel Matney; board liaison Enrique Galindo). She recognized Julie James as the next AVP for Conferences and Enrique Galindo as the Board Liaison to the Conferences Committee this past year. Colleen reminded everyone to complete the conference survey.

Megan Burton recognized the Conference Program Committee and thanked Julie Amador, AVP for Conference Program and her committee for putting together a great program this year. Megan noted that Jeremy Zelkowski will be the program chair next year and thanked Rick Hudson for his leadership during the virtual 2021 Conference. Megan publicly recognized proposal reviewers for the 2022 conference and encouraged people to volunteer. Megan also thanked the local arrangements committee, which included Jeff Shih and Travis Olson. She thanked AVP for Communications Steve Rhine, AVP for Technology Dawn Woods, and Immediate Past President Mike Steele for their technology support during the conference.

## V. Division Reports and Recognitions

Megan shared the 2021 annual report is available within the app and on the website found [HERE](#). She reminded attendees of the five division structure and how the budget reflects divisional efforts. She encouraged AMTE members to read and share the 2021 Annual Report with colleagues, administrators, those who may be interested in volunteering on a committee as the report includes descriptions for each of the 19 committees.

### a. Headquarters Division

**Shari Stockero, Executive Director**

Megan Burton recognized Jennifer Bay-Williams, outgoing AVP for Nominations & Elections and incoming AVP Amber Candela. She recognized outgoing AVP for Constitution & By-Laws, Barbara Swartz and incoming AVP Daniel Clark. (Report for this division can be found on pages 8-9 of the AMTE 2021 Annual Report.) Megan noted the upcoming election for Member-at-Large and Secretary in 2022.

### b. Membership Division

**Lisa Poling, Vice-President**

Lisa Poling provided an overview of the three committees for the division and shared that the membership committee will have three new members to support the AVP for membership who had been working solo for the past several years. The membership committee introduced the community circles of which now there are six standing circles that meet throughout the year. These community circles are open to all interested AMTE members. In addition, the membership committee, along with AER, has been working this past year to establish a mentoring program within AMTE. Lisa recognized the three AVPs for this division which includes: AVP for Affiliates: outgoing Hartono Tjoe and incoming Pam Bailey; AVP for Awards: Todd Abel, who will continue in this role and Yi-Jung Lee who is the AVP designee; and AVP for Membership: Temple Walkowiak, who will continue in this role. Lisa also welcomed two new AMTE affiliates which include: New York State (NYSAMTE), President Monica Merritt; and Nevada (AMTE-NV), President Diana Moss. (Report for this division can be found on pages 15-17 of the AMTE 2021 Annual Report.)

### c. Professional Learning Division

**Jennifer Suh, Vice-President**

Jennifer Suh thanked Enrique Galindo for serving as the AMTE Board Liaison for the past three years of the division and welcomed Farshid Safi as the new Board Liaison for this coming year. She encouraged members to look at the annual report for highlights of the work committees did this past year and what the various committees do in the Professional Learning Division.

Jennifer recognized the AVPs for this division which includes: AVP for Conference Committee: outgoing Colleen Eddy and incoming Julie James; AVP for Program Committee: outgoing Julie Amador and incoming Jeremy Zelkowski; AVP for Professional Development: outgoing Denise Polojac-Chenoweth and incoming Ruby Ellis; AVP for STaR Committee: outgoing Maria Fernandez and incoming Judith Quander; and AVP for Technology Committee: outgoing Dawn Woods and incoming

David Glassmeyer. (Report for this division can be found on pages 18-23 of the AMTE 2021 Annual Report.)

**d. Publications Division**

**Babette Benken, Vice-President**

Babette Benken thanked Farshid Safi, AMTE Board Liaison this past year and welcomed Kristin Lesseig who will be the new AMTE Board Liaison this coming year. She encouraged members to check out the review of Volume 4 in the Professional Book Series in Teachers College Record that was published a couple of weeks ago and announced that the fifth book of the Professional Learning Series titled Reflection on Past, Present, and Future: Paving the Way for the Future of Mathematics Teacher Education is expected to be published Fall 2022.

Babette recognized outgoing members and incoming members of various committees in the division and the AVPs of this division which includes: AVP for Connections! Newsletter: Susan Swars Auslander who will continue in this role; AVP for CITE Journal: outgoing Shannon Driskell and incoming Ann Wheeler; AVP for MTE Editorial Panel: outgoing Matt Campbell and incoming Alison Castro Superfine; AVP for MTE Editors: outgoing Karen Hollebrands and Valerie Faulkner and incoming Mike Steele and Kate Johnson; and AVP for Publications Review: outgoing Dawn Woods and incoming Theresa Gurl. Please see the Annual Report for more information. (Report for this division can be found on pages 24-29 of the AMTE 2021 Annual Report.)

**e. Advocacy, Equity and Research Division**

**Sarah van Ingen Lauer, Vice-President**

Sarah van Ingen Lauer shared that this was the first year for the Advocacy Committee which was switched from the charge of the Emerging Issues Committee. She noted that members can access anti-racist resources on the AMTE website that the committee put together this past year. Sarah welcomed Crystal Kalinec-Craig as the incoming VP for the division and announced the Research Committee submitted a proposal for a new Dissertation Award the AMTE Board is considering and to look for that next year. She thanked the 2021 AVPs for the division which includes: co-AVPs for Advocacy: outgoing Zandra de Araujo and Rob Wieman who will continue in this role; co-AVPs for Equity: outgoing Carlos López Leiva and Crystal Kalinec-Craig and incoming Natasha Ramsey-Jordan; and co-AVPs for Research: outgoing Meghan Shaughnessy and Mary Candace Raygoza who will continue in this role. (Report for this division can be found on pages 30-33 of the AMTE 2021 Annual Report.)

**f. Communications and Outreach Division**

**Dusty Jones, Vice-President**

Dusty Jones shared there were increased efforts by the STaR Fundraising committee to increase money raised for the STaR program this year. The results from the 2021 STaR cohort challenge included 113 former STaR fellows giving back to the AMTE STaR program with donations of over \$10,600 to support six future STaR fellows. There was a STaR cohort challenge to see which one could raise the most money in direct contributions. In third place the 2016 cohort donated \$1,025. In second place the first cohort from 2010 donated \$1,800. In first place, the 2015 cohort donated \$3,375. Eighteen episodes were released of the Teaching Mathematics Teaching podcasts since the 2021 AMTE Conference and they have had over 15,000 downloads in the past 12 months. Dusty also welcomed Joel Amidon as the new VP for the division.

Dusty recognized AVPs for this division, all of whom will continue in this role for next year. AVPs for the division includes: AVP for Communications: Steve Rhine; AVP for Sponsorship: Ray LaRochelle; AVP for Marketing: Sandi Cooper; AVP for STaR Fundraising: Jeff Wanko; AVP for Social Media: Amanda Jansen; and AVPs for TMT Podcast: Eva Thanheiser, Joel Amidon, and Dusty Jones. (Report for this division can be found on pages 34-36 of the AMTE 2021 Annual Report.)

## **VI. New Business Burton**

**Megan**

### **1. Long Term Goals**

Megan reminded members that the long-term goals document is available on the website, including updates for 2021-2022 activities related to the four long-term goals.

### **2. Constitution and By Laws**

Shari Stockero presented the proposed amendments to the Constitution and By-Laws. She noted that the main changes to the Constitution are changing references from physical mail to electronic voting, changing to gender-neutral pronouns, clarifying the process for petitioning for a referendum, and clarifying the process for making changes to the Constitution.

The process is for members to vote at the business meeting and if ratified, the changes will be put to a vote to the broader membership.

The vote for changes to the Constitution passed unanimously via electronic vote.

Shari summarized that the changes to the By-Laws reflect gender-neutral pronouns, voting processes, and references to physical mail.

The vote for changes to the By-Laws passed unanimously via electronic vote.

No additional new business was offered.

## **VII. Installation of New Board Members**

**Megan Burton**

Megan recognized outgoing board members: Sarah Quebec Fuentes (Treasurer), Enrique Galindo (Board Member at Large), Dusty Jones (VP for Communications and Outreach), Sarah van Ingen Lauer (VP for Advocacy, Equity, and Research), and Mike Steele (Immediate Past President). She recognized incoming board members: Allyson Hallman-Thrasher (Treasurer), Kristin Lesseig (Member-at-Large), Enrique Galindo (President-Elect), Crystal Kalinec-Craig (VP for Advocacy, Equity, and Research), and Joel Amidon (VP for Communications and Outreach).

## **IX. Adjournment Burton**

**Megan**

*Motion: To adjourn the 2022 AMTE Annual Business Meeting. Moved by Shari Stockero and seconded by Mike Steele. Motion passed unanimously.*

Meeting adjourned 1:26 (PST)  
Respectfully submitted by Cynthia Taylor

## MORE INFORMATION ON AMTE.NET

- AMTE Leadership, including members serving on committees and task forces
- AMTE Awards, including the Excellence in Scholarship Award and the Early Career Award
- Susan Gay Graduate Student Conference Travel Scholarship
- Elementary Mathematics Specialist (EMS) Scholarship
- Call for Manuscripts, Reviewers, Readers, & Comments for *CITE-Math Journal*
- Call for Manuscripts for *Mathematics Teacher Educator*
- Call for Manuscripts for *Connections*

## 2024 ANNUAL AMTE CONFERENCE



*See you in Orlando!*

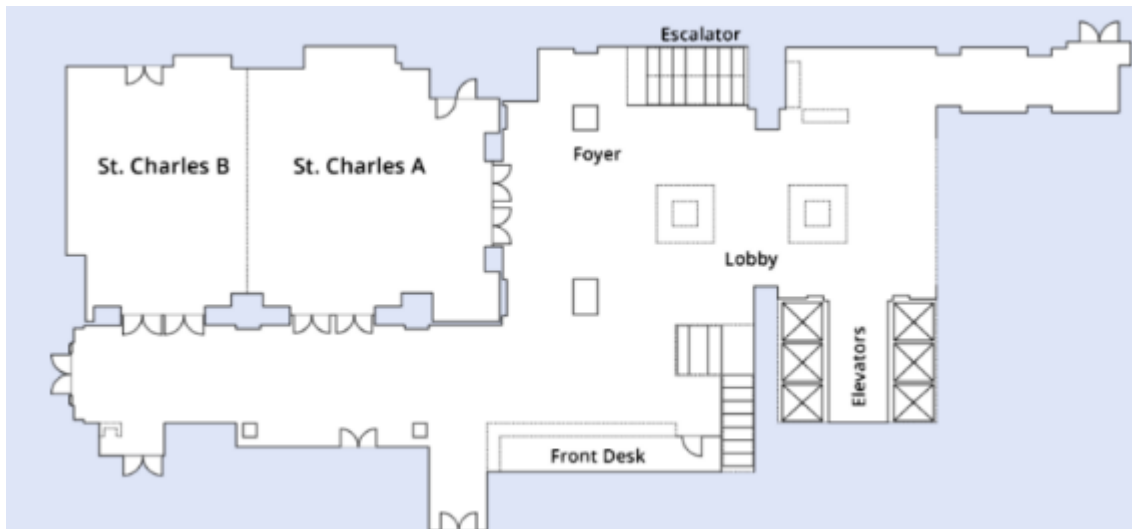
We invite you to attend and present at the Twenty-Eighth Annual AMTE Conference, to be held **February 8-10, 2024**, at the Rosen Centre Hotel in **Orlando, FL.**

The Call for Proposals will be available on the AMTE website ([amte.net](http://amte.net)) in March 2023, and in the next issue of *AMTE Connections*. The Associate Vice President for Conference Programs is Jennifer Ward, Kennesaw State University ([programchair@amte.net](mailto:programchair@amte.net)).

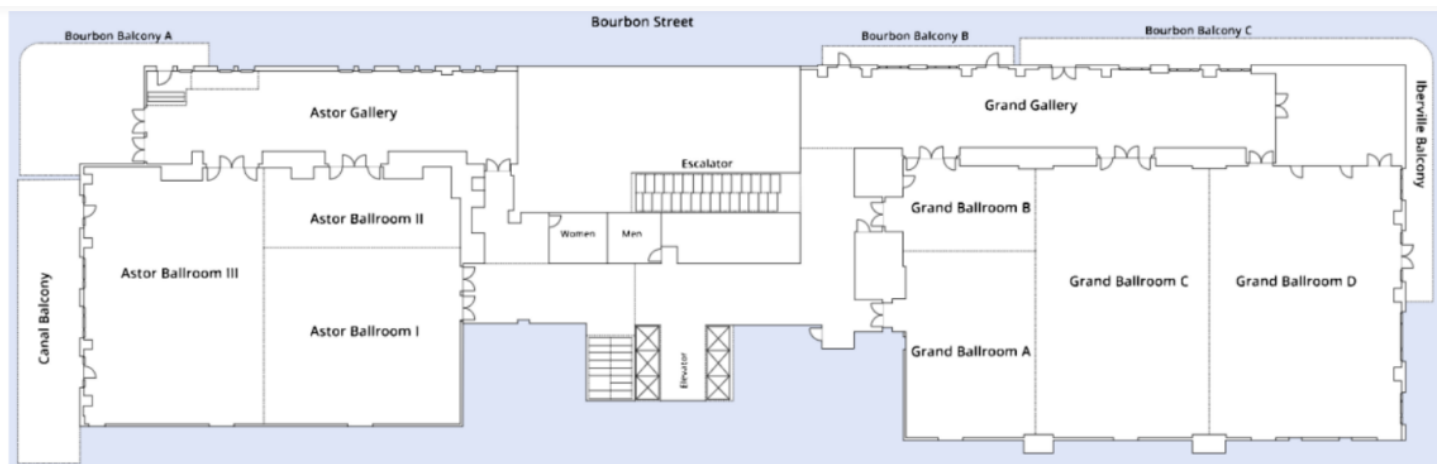
THE DEADLINE FOR SUBMITTING PROPOSALS  
FOR THE 2024 ANNUAL CONFERENCE IS **MAY 15, 2023.**

Visit [amte.net/conferences](http://amte.net/conferences) for updated information about past and future conferences.

## First Floor Lobby Level



## Second Floor



## Second Floor Mezzanine

