A NOTE ON THE COVER ART

The cover art for the 2018 Annual Conference Program was created by AMTE graphic designer Tony Nguyen by blending textured rainbow-colored images with an iconic photograph taken by NASA Astronaut Piers J. Sellers during an 11-minute excursion outside the Space Shuttle Discovery and the International Space Station in July 2006.

The visual metaphors in the cover art illustrate the prominent role of mathematics in human discovery (represented by the astronaut) while highlighting (through rainbow hues) AMTE's priorities over the past year – continued focus on equity and social justice, dissemination of Standards for Preparing Teachers of Mathematics, and a reorganization of our work into five deeply connected divisions.

Across cultures and throughout history, understanding the movement of the sun, moon, and stars has been a primary driver of mathematical discovery. Over the past half-century, the age of human space exploration has revealed new ways to rapidly advance discovery through global cooperation.

Perhaps the astronaut's impulse to take a selfie while traveling thousands of miles an hour, protected from certain death by only a few layers of fabric and modern scientific understanding, can tell us something about the very human drive to share the knowledge we gain from experience.

*With human discovery comes great opportunities to teach and learn...*
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We would like to welcome you to the Twenty-Second Annual Conference of the Association of Mathematics Teacher Educators (AMTE). Mathematics teacher education is constantly changing and evolving, and AMTE in general and our annual conference in particular provide a reflection of the growth and development of our field. Our two first-day plenary sessions, one expanding equity in mathematics education to include LGBTQ+ people and the other a working-group session around the 2017 AMTE Standards, are two examples of how AMTE’s values are reflected in our 2018 meeting. And perhaps most significantly, AMTE’s annual conference reflects its fundamental commitment to providing opportunities for members to meet, learn from each other, and enjoy the wonderful and supportive community that we have built over many years.

INVITED SPEAKERS

The opening general session, “Expanding Equity in Mathematics Education to Include LGBTQ+ People,” is Thursday morning at 8:00 AM in Galleria II and III. The speakers include:

Laurie Rubel, Brooklyn College, The City Univ. of New York; Stephen T. Russell, University of Texas, Austin; and Randolph Philipp, San Diego State University.

The second plenary session, “Meeting the Standards for Preparing Teachers of Mathematics: What Will It Take?,” is Thursday afternoon at 1:00 PM in Galleria II and III, and will provide opportunities for participants to discuss candidate standards with writing team members. The panel includes:

Kathryn Chval, University of Missouri
Julia Aguirre, University of Washington Tacoma
James Lewis, University of Nebraska Lincoln
Travis Olson, University of Nevada Las Vegas
Nicole Rigelman, Portland State University
Marilyn Elaine Strutchens, Auburn University

Margaret (Peg) Smith gives the 2018 Judith Jacobs Lecture, with a talk titled “A Mathematics Teacher Educator’s Journey: Responding to an Evolving Field” on Friday afternoon, at 5:00 PM in Galleria I.

Signe Kastberg, recipient of the Award for Excellence in Teaching in Mathematics Teacher Education, gives a talk titled “Factors that Impact MTE’s Written Feedback Practice: Improving Practice through Inquiry” with her collaborative self-study colleagues on Friday morning, at 9:15 AM (Session 76, Galleria III).

Jennifer Tobias, recipient of the 2017 Early Career Award, will present a talk titled “Fraction Learning Trajectories in Pre-Service Teacher Education Content Courses” on Thursday afternoon, at 2:45 PM (Session 30, Plaza II).

PROGRAM INFORMATION

There are 166 sessions and 445 speakers on this year’s program (compared to 496 speakers in 2017). There were 444 proposals submitted for review, down slightly from 452 in 2017. The program committee accepted 221 proposals (49.8%) for the program, including: 137 individual presentations, discussion and extended sessions, and symposia; 35 brief reports organized into 15 thematic sessions; and 34 posters for the poster session. The third annual AMTE Poster Session is Friday afternoon from 1:00 to 2:00 PM in the Monarch room. The program also includes 10 invited presentations, 2 award-winner sessions, and 2 sessions presented by AMTE sponsors.

LEAD THE WAY

AMTE has become a complex organization, and our commitments include engaging with other organizations, providing an active webinar series, administering the STaR program for early-career faculty, producing books, monographs, standards documents, two journals, and a quarterly newsletter, and recognizing and honoring those who make special contributions to our field. And as much as AMTE now takes on, we are still, at 1,000 members, a relatively small organization; but we are highly influential, directly touching the lives each year of hundreds of thousands of prospective and practicing teachers, and indirectly touching the lives of tens of millions of K–12 students. Our annual conference is an important component of what makes AMTE what it is, and the conference flourishes because of your support and active involvement. Thank you for attending and contributing your expertise, interest, and commitment to learning and growing, and for your continued involvement as a member of AMTE.

Randolph Philipp, AMTE President
Signe Kastberg, recipient of the Award for Excellence in Teaching in Mathematics Teacher Education
Jennifer Tobias, recipient of the 2017 Early Career Award
Margaret (Peg) Smith gives the 2018 Judith Jacobs Lecture
Farshid Safi, 2018 AMTE Conference Program Chair
Tim Hendrix, AMTE Executive Director
CONFERENCE SCHEDULE

WEDNESDAY, FEBRUARY 7, 2018

4:30 PM - 7:30 PM  AMTE Registration Desk Open  Galleria Foyer

THURSDAY, FEBRUARY 8, 2018

6:45 AM - 7:45 AM  Breakfast  Woodway I
7:00 AM - 5:30 PM  AMTE Registration Desk Open  Galleria Foyer
9:30 AM - 5:15 PM  Exhibits Open  Galleria Foyer
8:00 AM - 9:45 AM  Opening Session on Equity  Galleria II and III
10:00 AM - 11:45 AM  Concurrent Sessions
11:45 AM - 1:00 PM  Lunch  Woodway I
1:00 PM - 2:30 PM  Opening Session on Standards  Galleria II and III
2:45 PM - 3:30 PM  Concurrent Sessions
3:45 PM - 4:15 PM  Break
4:15 PM - 5:00 PM  Concurrent Sessions
4:15 PM - 6:00 PM  Extended Concurrent Sessions
6:00 PM - 7:15 PM  Reception for All Conference Attendees  Woodway I

FRIDAY, FEBRUARY 9, 2018

6:45 AM - 7:45 AM  Breakfast  Woodway II
6:45 AM - 7:45 AM  Advocacy and Emerging Issues Breakfast  Woodway I
7:30 AM - 5:00 PM  AMTE Registration Desk Open  Galleria Foyer
8:45 AM - 5:00 PM  Exhibits Open  Galleria Foyer
8:00 AM - 9:00 AM  Concurrent Sessions
9:15 AM - 10:15 AM  Concurrent Sessions
10:30 AM - 11:45 AM  Concurrent Sessions
11:45 AM - 1:00 PM  Lunch  Woodway I
1:00 PM - 2:00 PM  Poster Session  Monarch Room (24th floor)
2:15 PM - 3:30 PM  Concurrent Sessions
3:00 PM - 3:30 PM  Break
3:30 PM - 4:30 PM  Concurrent Sessions
5:00 PM - 6:15 PM  Judith E. Jacobs Lecture  Galleria I
6:30 PM - 7:30 PM  Reception for Graduate Students & Early Career Faculty Galleria III

SATURDAY, FEBRUARY 10, 2018

6:45 AM - 7:45 AM  Breakfast and Affiliate Meetings  Woodway I
7:30 AM - 10:30 AM  AMTE Registration Desk Open  Galleria Foyer
8:00 AM - 8:45 AM  Concurrent Sessions
9:00 AM - 9:45 AM  Concurrent Sessions
10:00 AM - 10:45 AM  Concurrent Sessions
11:00 AM - 11:45 AM  Concurrent Sessions
11:45 AM - 1:30 PM  Lunch and Business Meeting  Woodway I
CONFERENCE INFORMATION

CONFERENCE REGISTRATION DESK
Please stop by the AMTE Registration Desk, located in the Westin Galleria Hotel on the Third Floor near the Galleria Ballroom, to obtain your conference materials, including the conference program and your nametag. If you ordered a shirt or books, you may also pick those up here.

AMTE REGISTRATION DESK HOURS

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FINDING THE CONFERENCE AREA
Conference session rooms are located on the Third Floor and the Twenty-Fourth Floor in the Westin Galleria Hotel. Meals will be held in Woodway I on the Fourth Floor.
For your convenience, a map of the hotel conference area is printed on the back of the program book. For other questions about hotel facilities, please contact the volunteers at the AMTE Registration Desk or the hotel staff.

WIRELESS INTERNET ACCESS
Complimentary wireless internet access in the conference/meeting area of the hotel for conference attendees is provided by AMTE for usage from Wednesday, February 7 through Saturday, February 10.

- Using your laptop or mobile device, look for network WestinMeetingRooms and use password: amte2018

Please note that only 600 devices can have access at a time, so please only use one device on the hotel network at a time.

Conference attendees who are staying at the Westin Galleria Hotel and who booked their guestrooms through the AMTE room block will receive complimentary internet access in individual guestrooms for the duration of the conference. Basic wifi internet is normally $9.99 per day and this charge will be removed when checking out of the hotel. Charges will be incurred when using internet at faster speed other than the basic service. Directions on how to access wireless and wired internet service can be found in each guestroom.

CANCELLATIONS AND PROGRAM CHANGES
For updated lists of cancellations and other program changes, visit amte.net/conferences/conf2018/updates.

HOTEL PARKING INFORMATION
The Westin Galleria Hotel is connected to the Galleria Shopping Center. The entrance to the Brown Parking Garage is located next to the hotel’s porte-cochère, covered entrance. The Brown Garage has designated parking for overnight hotel guests. Another option for day-only parking close to the hotel entrance is the Orange Parking Garage. Parking is complimentary in either of these garages or other Galleria Shopping Center color-named parking garages. A map of the parking options is available at parkingatthegalleria.net. Valet parking at the hotel is also available for $25 per car per day or $39 overnight (plus taxes); prices subject to change.

OPTIONS FOR DINNER
The Galleria, a shopping mall connected to the conference hotel, has a wide variety of options for dinner at a range of prices.

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, Tim Hendrix, at the conference or via email at hendrixt@meredith.edu. Thanks to Margaret Mohr-Schroeder (University of Kentucky) and Tony Nguyen (AMTE) for serving 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 or personal vehicles by conference attendees.

LOST AND FOUND
Please drop off any unclaimed found items at the AMTE Registration Desk. AMTE and the hotel are not responsible for items being left in the session rooms and in the conference area.

EXHIBITS

THURSDAY 9:30 AM - 5:15 PM
FRIDAY 8:45 AM - 5:00 PM
Make sure to visit the exhibits! Exhibitors include CPM, HP, IAP, Math Learning Center, National Geographic Learning, NCSM, NCTM, Pearson, and TODOS. See the Exhibitors Section on pages 20 and 21 for more information.

COMMITTEE MEETINGS
AMTE Committees will meet during the conference according to the schedule provided to committee leaders.

AFFILIATE MEETINGS
AMTE Affiliates will meet during breakfast on Saturday in Woodway I. This is a great time to meet each other face-to-face and discuss a game plan for the upcoming year. See pages 9 and 10 in your conference program for table locations for each affiliate.

CONFERENCE APP & SOCIAL MEDIA

USE THE FREE AMTE CONFERENCE APP TO:

- View the Conference Program
- Organize your schedule
- Find more information about speakers and attendees
- Share documents, participate in audience surveys, polls, and Q & A sessions
- Engage attendees and colleagues around the world through Social Media

The official app is available through the major app stores. Search “AMTE 2018”, or go to: AMTE2018.QUICKMOBILE.MOBI

Username = (your registration email address before the @ symbol)
Password = amte18

LIKE AMTE ON FACEBOOK
facebook.com/AMTE.net

FOLLOW AMTE ON TWITTER
@AMTEnews

Use #AMTE2018 to join public discussion around the conference.
DEDICATED SPACE FOR COLLABORATION

MONARCH ROOM (24TH FLOOR)
Catch-up and collaborate with colleagues while enjoying a panoramic view of Houston’s skyline

THURSDAY, FEBRUARY 8TH

7:00 AM – 1:00 PM  Available/Open to AMTE Conference Participants
4:15 PM – 6:00 PM  **Publications Session**: Transforming an Idea Into an AMTE Publication: Getting Feedback
6:00 PM – 7:30 PM  Available/Open to AMTE Conference Participants

FRIDAY, FEBRUARY 9TH

7:00 AM – 9:00 AM  Available/Open to AMTE Conference Participants
10:00 AM – 11:00 AM Presenters Put Up Posters
11:00 AM – 1:00 PM  Posters Available for Viewing
1:00 PM – 2:00 PM  **Poster Presentations**
2:00 PM – 4:00 PM  Posters Available for Viewing
4:00 PM – 5:00 PM  Presenters Remove Posters
6:00 PM – 7:30 PM  Available/Open to AMTE Conference Participants

SATURDAY, FEBRUARY 10TH

7:00 AM – 11:00 AM  Available/Open to AMTE Conference Participants
2018 ANNUAL CONFERENCE COMMITTEES

Conference Director: Susan Gay, University of Kansas, sgay@ku.edu
Assistant Conference Director: Carol Lucas, University of Central Oklahoma, clucas@uco.edu

CONFERENCE LEADERSHIP TEAM
Susan Gay (Conference Director), University of Kansas; sgay@ku.edu
Carol Lucas (Asst. Conference Director), University of Central Oklahoma, clucas@uco.edu
Farshid Safi (Chair, 2018), University of Central Florida, farshid.safi@ucf.edu
Holt Wilson (Chair, 2017), University of North Carolina at Greensboro, phwilson@uncg.edu
Dana Cox (Chair, 2019), Miami University, dana.cox@MiamiOH.edu

ANNUAL CONFERENCE PROGRAM COMMITTEE

2015 – 2018
David Barker, Illinois State University, dbarker@ilstu.edu
Rick Hudson, University of Southern Indiana, rhudson@usi.edu
Courtney Koestler, Ohio University, koestler@ohio.edu

2016 – 2019
Robert Berry, University of Virginia, robertberry@virginia.edu
AnnaMarie Conner, University of Georgia, aconner@uga.edu
Enrique Galindo, Indiana University, egalindo@indiana.edu
Catherine Schwartz, East Carolina University, schwartzca@ecu.edu

2017 – 2020
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Jennifer Eli, University of Arizona, jeli@math.arizona.edu
Cathy Liebars, The College of New Jersey, liebars@tcnj.edu
Jane Wilburne, Pennsylvania State University, Harrisburg, jmw41@psu.edu

CONFERENCE APP DEVELOPMENT TEAM
App Coordinator: Joe Champion, Website Director, joechampion@boisestate.edu
App Graphics Assets: Tony Nguyen, Webmaster, ttnguyen@meredith.edu

LOCAL ARRANGEMENTS COMMITTEE

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Angela Broadus, Benedictine College
Emma Bullock, Sam Houston State University
Justin Burris, University of Houston
Sandi Cooper, Baylor University
Shea Culpepper, University of Houston
Carrie Cutler, University of Houston
Colleen Eddy, University of North Texas
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Whitney Hanna, Relay Houston Graduate School of Education
Kimberly Hicks, Houston Independent School District
Dusty Jones, Sam Houston State University

Mark Klespis, Sam Houston State University
Karman Kurban, North American University
Carrie La Voy, The University of Kansas
Keith Leatham, Brigham Young University
Alyson Lischka, Middle Tennessee State University
Leeño Luthe, University of Central Oklahoma
Sararose Lynch, Westminster College
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Monica Gonzalez, University of Houston
Katrina Rothrock, The University of Kansas
Trena Wilkerson, Baylor University
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rphilipp@mail.sdsu.edu

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Paola Sztajn
North Carolina State University
Raleigh, NC
psztajn@ncsu.edu

HISTORICAL LISTING OF AMTE PRESIDENTS

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To help inform potential authors about manuscript expectations for AMTE Publications, a special extended session will be offered on Thursday, February 8 at 4:15 – 6:00 PM in the Monarch Room (24th floor). This session provides potential authors with feedback to transform ideas into manuscripts for submission for AMTE's publications—Mathematics Teacher Educator (MTE), Contemporary Issues in Technology and Teacher Education (CITE) and Connections—focusing on clarifying expectations for the relevant publication regarding scope, format, and intended audience.

During 15-minute mini-sessions, reviewers will meet with participants to discuss an outline of a potential manuscript that has been critiqued prior to the conference. For those who were unable to sign up for a mini-session, a representative for each publication will be available at a “drop-in” table to answer general questions relative to the submission and publication processes for the respective journals. Drop-in tables will not provide a review of specific manuscript outlines.

MATHEMATICS TEACHER EDUCATOR (MTE) JOURNAL

Reviewers
Tonya Bartell
Melissa Boston
Rebekah Elliott
Anthony Fernandes
Mike Steele
Dorothy White

Drop-in Table
Sandra Crespo, Editor
Kristen Bieda, Associate Editor
Gloriana González Rivera, Editorial Board Chair

CONTEMPORARY ISSUES IN TECHNOLOGY AND TEACHER EDUCATION (CITE) JOURNAL

Reviewers
Shannon Driskell
Rachel Harrington
Mi Yeon Lee
Jennifer Lovett
Robert Powers
Ann Wheeler

Drop-in Table
Asli Ösgün-Koca, Co-Editor
Beth Bos, Co-Editor

AMTE CONNECTIONS

Drop-in Table
Alyson Lischka

Session Director: Christine Browning, VP for Publications
Session Facilitator: Aj Edson
AMTE is proud to welcome members of its 24 active affiliated organizations:

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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.

Are you connected with an AMTE Affiliate? Does your state or regional area have an AMTE Affiliate? There are several opportunities to learn more about AMTE Affiliates during the annual conference.
SATURDAY BREAKFAST AFFILIATE MEETINGS

Saturday, February 10, 2018
Woodway I, Breakfast, 6:45-7:45 AM

The special Affiliates breakfast is a great opportunity to meet with colleagues in your region.

WESTERN REGION
1. CAMTE (California)
2. AMTE-TX (Texas)
3. UAMTE (Utah)
4. TOTOM (Oregon)

MIDWESTERN REGION
5. IMTE (Illinois)
6. HAMTE (Indiana)
7. MI-AMTE (Michigan)
8. (MAT)^2 (Missouri)
9. IAMTE (Iowa)
10. WI-AMTE (Wisconsin)

NORTHEASTERN REGION
11. AMTEC (Connecticut)
12. PAMTE (Pennsylvania)
13. MassMATE (Massachusetts)
14. NJAMTE (New Jersey)

SOUTHEASTERN REGION 1
15. AMMTE (Maryland)
16. SCAMTE (South Carolina)
17. AMTE-NC (North Carolina)
18. GAMTE (Georgia)
19. VA-AMTE (Virginia)

SOUTHEENER REGION 2
20. FAMTE (Florida)
21. TAMTE (Tennessee)
22. MAMTE (Mississippi)
23. AMTEA (Alabama)
24. KAMTE (Kentucky)

AFFILIATE CONNECTIONS COMMITTEE SESSION

MAKING AND STRENGTHENING AFFILIATE CONNECTIONS: STRONGER TOGETHER
Friday, February 9, 9:15 AM – 10:15 AM, Plaza II

Please join us to hear from members of the ACC, meet other Affiliate Leaders, share ideas to reach and support your membership.

If your state or regional area does not have an AMTE Affiliate and you are interested in organizing one, please contact (amteaffiliate@gmail.com). Also, you can find helpful information on the Affiliates section of the AMTE web site at amte.net/affiliates.
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, made possible by a donation by Texas Instruments) 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 Thanks to Texas Instruments for their ongoing support of this award.

2018 NTLI AWARD WINNERS

Jennifer N. Lovett, Middle Tennessee State University
Lara K. Dick, Bucknell University
Allison W. McCulloch, University of North Carolina Charlotte
Milan F. Sherman, Drake University
Kristi Martin, North Carolina State University

Title: Developing Preservice Teachers’ TPACK of Function using a Vending Machine Metaphor Applet
Location: Westin Galleria Houston Hotel, Plaza I
Time: Thursday, February 8, 11:00 to 11:45 am

Look in the 2019 Call for Proposals for information on how to submit a paper for the 2019 AMTE NTLI Award.

SCHOLARSHIPS FOR ELEMENTARY MATHEMATICS SPECIALISTS

The purpose of this Elementary Mathematics Specialist 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 2017 EMS SCHOLARSHIP RECIPIENTS!

Barbara Woodward Stamberg, Winchester, VA
Daniel Sweet, Atlanta, Georgia
Jackie Kessler, Louisville, Kentucky

Check 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:
ACKNOWLEDGEMENTS

The Twenty-Second Annual AMTE Conference would not be possible without the contributions and support of many individuals. It is not possible to name each one individually!

AMTE WISHES TO EXPRESS ITS SINCERE APPRECIATION TO THE FOLLOWING:

- The Local Arrangements Committee, especially Jennifer Chauvot, Chair, who is critical to making our conference successful;
- The University of Houston, College of Education, Department of Curriculum and Instruction, especially Rebecca Perez and Daniella Heysquierdo, for managerial support in preparation for the conference;
- All of the speakers who have contributed their time and expertise to make this conference a success;
- The many individuals who make up the AMTE infrastructure – the AMTE Board of Directors, the Conference Director and Assistant Conference Director, Executive Director, Program Committee, Conference App Team, Reception Coordinator, and Headquarters staff for providing the time and effort necessary to organize all facets of the conference;
- Joe Champion, AVP for Website Development, and Tony Nguyen, AMTE Graphic Designer & Webmaster, for their dedicated work on the conference program and materials; and
- Trish Boone, Meredith College AMTE Assistant; Haley Ervin, Meredith College Student Assistant; and Stephanie Holmes, Administrative Assistant for the Department of Mathematics & Computer Science, for their dedication and organization preparing our conference registration materials.

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 this 2018 conference.

Thank You!
AMTE would like to express our appreciation to this year’s Gold Sponsors for providing invaluable support for our conference and for our organization’s activities and initiatives.

**CPM**

CPM Educational Program 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 is pleased to support AMTE and its STaR program for new math education faculty. With matching funds, CPM supports beginning math education faculty in inspiring the next wave of math teachers across the country. CPM also provides complimentary access to our secondary curriculum materials to support pre-service teacher candidates, mathematics teacher educators, and mathematics curriculum reviewers and researchers through its University Support Program. All math education faculty are welcome to sign-up at http://cpm.org/university.

**THE MATH LEARNING CENTER**

The Math Learning Center offers innovative, standards-based programs for elementary classrooms. Bridges in Mathematics®, Number Corner®, and Bridges Intervention® are designed to develop mathematical confidence and ability not only in students but also in teachers. In support of our nonprofit mission, we also offer a range of free resources, including the Bridges University program, which provides online access to the contents of our curriculum to schools of education.

MLC is the founding sponsor of the Elementary Mathematics Specialist (EMS) 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 a certified elementary mathematics specialist. MLC also offers university instructors free access to the full contents of the Bridges in Mathematics K-5 curriculum through the Bridges University Program.
AMTE would like to express our appreciation to this year's Silver and Bronze Sponsors for providing invaluable support for our conference and for our organization's activities and initiatives.

**INFORMATION AGE PUBLISHING**

Information Age Publishing continues to partner with AMTE on multiple projects, including both the republication of the AMTE Monograph Series and the publication of the AMTE Professional Book Series: a three-volume series in the field of mathematics teacher education published over the last two years. AMTE is proud to have IAP as a sponsor—they have provided support for the AMTE Awards, and are donating books as prizes for our Early Career and Graduate Student Reception. Thanks to IAP for their continued support and growing partnership.

Founded in 1999 by George F. Johnson, IAP is a social science publisher of academic and scholarly book series and journals. IAP's goal is to develop a comprehensive list of book series, monographs and journals that break down and define specific niches that lack high-level research material in the fields of Education and Management. Our products will be offered in both print and electronic formats where possible. We at IAP sincerely hope to have you become a part of a new era in publishing as we grow.

**NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS**

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 through vision, leadership, professional development, and research. NCTM members belong to the largest community of mathematics educators committed to ensuring all students have 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—70,000 strong. Learn more about NCTM and the benefits of membership at NCTM.org.

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CPM EDUCATIONAL PROGRAM

Empowering mathematics students and teachers through exemplary curriculum, professional development, and leadership for 28 years

CPM’s University Support Program
CPM provides complimentary access to our secondary mathematics curriculum to support math teacher educators and their students. All math education faculty are welcome to visit our exhibit, meet CPM authors, see our materials, and request access today.

+ Curriculum written by a team of experienced teachers
+ Problem-based lessons for active student engagement
+ Free, comprehensive professional learning progression to support teacher expertise, growth, and leadership
+ Educational nonprofit 501(c)(3)

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Provide your education students with access to a full PK–5 math curriculum

Bridges University Program

The content of Bridges in Mathematics second edition is now available for free to schools of education. University instructors may request access to the Bridges Educator Site for themselves and for their students. This teacher portal contains a complete set of the teacher and student materials as well as a wealth of resources for implementation support.

To learn more, stop by the Math Learning Center table or join us for a presentation.

Friday, February 9th
2:15–3:00 p.m., Westin Galleria, Post Oak Room
Pamela Weber Harris—Texas State University

mathlearningcenter.org/university
SILVER SPONSOR – INFORMATION AGE PUBLISHING

AMTE 2018 Annual Conference
Association of Mathematics Teacher Educators
Titles of Interest from:

IAP—Information Age Publishing, Inc.
www.infoagepub.com

Featured Books:

- Elementary Mathematics Specialists: Developing, Refining, and Launching Programs that Support Mathematics Teaching and Learning
  Edited by Maggie B. Mckinney, University of Louisville; Nicole R. Niggen, Portland State University

- Building Support for Scholarly Practice in Mathematics Methods
  Edited by Signe T. Kasberg, Purdue University; Andrea M. Timbus, Clarion University; Alyson E. Lischka, Middle Tennessee State University; Wendy B. Sanchez, Kent State University

- International Perspectives on Mathematics Curriculum
  Edited by Denise R. Thompson, University of South Florida; Mary Ann Hurley, Cornell University; Christine Sarama, University of Ottawa

- Metacognitive Knowledge Development, Application, and Improvement
  By Joke van den Heuvel

- Out-of-School-Time STEM Programs for Females: Implications for Research and Practice Volume I: Long-Term Programs
  Edited by Linda R. Witte, University of Nevada; Jennifer L. Sanchez, University of Nevada; Heather Glynns-Crawford-Phelps, University of Nevada

- Reflecting the World: A Guide to Incorporating Equity in Mathematics Teacher Education
  By Matthew B. Malagueri, Ohio University; Kwanza McAlister, Pacific Lutheran University; Joseph M. Martinez, Pine Community College

  By Robert Geiger

- The Work of Mathematics Teacher Educators: Exchanging Ideas for Effective Practice
  Edited by Kathleen Lynch-Davis; Robin L. Rider

- Middle Math: Improving the Undergraduate Preparation of Teachers of Middle Grades Mathematics
  Edited by Mary B. Fran; Sidney L. Rachlin

- The Work of Mathematics Teacher Educators: Continuing the Conversation - 2006
  Edited by Kathleen Lynch-Davis; Robin L. Rider

- Cases in Mathematics Teacher Education: Tools for Developing Knowledge Needed for Teaching
  Edited by Margaret S. Smith; Susan N. Friel

- Inquiry Into Mathematics Teacher Education
  Edited by Fran Arbaugh; Mary Taylor

- Scholarly Practice and Inquiry in the Preparation of Mathematics Teachers
  Edited by Deanna S. Neuborn, University of Georgia; Halvayne S. Lee

- Cases for Mathematics Teacher Educators: Facilitating Conversations about Integration in Mathematics Classrooms
  Edited by Dorothy Y. White, University of Georgia; Sandra Chapman, Michigan State University; Maria Chad, The University of Arizona

- Digital Curriculum in School Mathematics
  Edited by Mag Buethe, The University of Chicago; Zalmet Ushak, The University of Chicago

- Selected writings from the Journal of the British Columbia Association of Mathematics Teachers: Celebrating 50 years of Vector
  Edited by Edgar J. Chernoff, University of Saskatchewan; Peter I. Feitl, Simon Fraser University; Sean Chorney, Simon Fraser University

- The Mathematics Education of Elementary Teachers: Issues and Strategies for Content Courses
  Edited by Lynn C. Hart, Georgia State University, USA; Susan DeLaet, Duquesne University, Canada

- Critical Mathematics Education: Theory, Praxis, and Reality
  Edited by Paul Ernest, University of Exeter, UK; Bhawuk D. Sirajan, University of Montevideo; Ruhaa Ernst

- Mathematical Understanding for Secondary Teaching: A Framework and Classroom-Based Approaches
  Edited by Kathleen Heid, The Pennsylvania State University; Patricia S. Wilson, University of Georgia; Olidson W. Burns, The Pennsylvania State University

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5 Ways NCTM Supports You as a Mathematics Educator

1. RESOURCES FOR YOU
NCTM provides the professional development you need with publications, resources, and leadership-building activities:
- Success from the Start publications provide a framework to support and develop early-career teachers.
- Principles to Actions and 5 Practices provide research-based, effective teaching strategies.
- Principles to Actions Professional Development Toolkits provide classroom videos and support materials to put Principles to Actions into practice with your teachers.
- Institutes provide 3-day intensive dives into Effective Teaching Practices and Math Practices for math education leaders.

2. PEER-REVIEWED, AWARD-WINNING JOURNALS
Build your scholarship through publishing in NCTM’s journals:
- Grade-band specific journals for teachers provide significant reach for your work to a wide range of audiences.
- Mathematics Teacher Educator builds professional knowledge for mathematics education scholars.
- Journal for Research in Mathematics Education is the premier research journal in your field.
- NCTM provides professional feedback and support in publishing your scholarship.

3. MATH EDUCATION NETWORK
NCTM provides access to more than 60,000 fellow mathematics educators, leaders, and teachers who share your commitment to teacher and student success. Enhance your teaching expertise when you exchange information about challenges, strategies, and first-hand insights. Join NCTM and access the resources, opportunities, and communities to support your work and expand your impact as a mathematics educator.

4. RESOURCES FOR FUTURE EDUCATORS
NCTM Student e-Memberships are free to all student members of an NCTM Student Affiliate or only $37 ($10 off regular $47 price with AMTE offer code) for students to purchase and have access to the following:
- All the articles from a school journal online
- Free registration at NCTM Regional Conferences
- Discounts on NCTM publications to use in class
- Access to MET grants for preservice and early-career teachers
- Access to online resources, classroom-ready activities, and more

5. LEADERSHIP AND COMMUNITY—ENGAGE WITH NCTM AFFILIATES
Affiliates play a specialized role at the grassroots level with shared goals that align with NCTM’s mission. Through work with affiliates, you can do the following:
- Build powerful relationships throughout your communities
- Strengthen relationships with teachers, school leaders, parents, legislators, business, media, and others
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AMTE expresses our appreciation to this year’s Exhibitors for providing support for our conference. Stop by the Exhibit area to see materials from the following exhibitors:

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<th>EXHIBITOR</th>
<th>ABOUT THE EXHIBIT</th>
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<tr>
<td>CPM</td>
<td>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.</td>
</tr>
<tr>
<td>HP</td>
<td>HP Inc. invites you to visit their exhibit table to see the HP Prime Ecosystem: HP Prime Graphing Calculator, HP Prime mobile apps, and Wireless Connectivity kit.</td>
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<td>INFORMATION AGE PUBLISHING</td>
<td>IAP is a social science publisher of academic and scholarly book series, monographs, handbooks and journals. IAP’s goal is to develop a comprehensive library of content that breaks down and defines specific niches that lack high-level research material in the fields of Education, Psychology, Management, Mathematics, Educational Technology and Black Studies. We are proud of our partnership with AMTE as we continue to launch new books within The Association of Mathematics Teacher Educators (AMTE) Professional Book Series. IAP has also republished the original 7 monographs that were a part of the AMTE monograph series. We have an extensive list of products in the field of mathematics and look forward to adding yours to our program. Please stop by the exhibit area to browse our current mathematics publications as well as the AMTE monographs.</td>
</tr>
<tr>
<td>THE MATH LEARNING CENTER</td>
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2018 Annual AMTE Conference
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NCSM

NCSM 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 and our publications and resources, including the NCSM Journal for Mathematics Education Leadership, Position Papers and Publications. Also learn about NCSM partnerships to support Formative Assessment and Digital Learning, and about professional learning opportunities scheduled for 2018.

PEARSON

Pearson is the leading publisher in teacher education, with best-selling products for courses in math methods. Preview the brand new 10th edition of Elementary and Middle School Mathematics: Teaching Developmentally by Van de Walle, Karp, Bay-Williams, now available with Pearson's MyLab Education. Learn more at: pearsonhighered.com.

TODOS: MATHEMATICS FOR ALL

Mathematics for ALL is an international professional organization that advocates for equity and high quality mathematics education for all students – in particular, Latinx students. One of the goals of the organization is to advance educators' knowledge and abilities that lead to implementing an equitable, rigorous, and coherent mathematics program that incorporates the role language and culture play in teaching and learning mathematics. Stop by to hear about the benefits of membership!
THURSDAY BREAKFAST  
WOODWAY I

Join your colleagues for a hot breakfast buffet in preparation for the opening session.

THURSDAY, FEBRUARY 8, 2018
6:45 AM - 7:45 AM

GENERAL SESSION  
GALLERIA II AND III

EXPANDING EQUITY IN MATHEMATICS EDUCATION TO INCLUDE LGBTQ+ PEOPLE
Randolph Philipp, San Diego State University
Laurie Rubel, Brooklyn College, The City University of New York
Stephen T. Russell, University of Texas, Austin

AMTE’s commitment to equity is reflected in its focus on the LGBTQ+ community in this plenary session, comprising three speakers who will highlight various perspectives about equity in mathematics education. Randy Philipp will discuss the decision landscape that honours and promotes AMTE’s values about equity in a hyper-politicized national environment. Laurie Rubel will describe and argue for the importance of a vision of equity in mathematics education that goes beyond equity as an “issue” and instead, embraces LGBTQ+ learners, teachers, families, and their allies. Stephen Russell will speak about LGBT students and the role of teachers in supporting positive school climates.

This session will be instructive in supporting our mathematics education community to see LGBTQ+ people as essential to our work.
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<th>Time</th>
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<td>10:00 AM - 10:45 AM</td>
<td>3. I Am New to Mathematics Teacher Education: Realities of Teaching, Scholarship, and Service- Lynch, James, Eskelson, Wilkerson, &amp; Waller</td>
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<td>4. Using Vertical Articulation to Unpack Learning Trajectories During a Coach-Facilitated Lesson Study- Suh &amp; Birkhead</td>
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<td>6. Brief Report Session: Equity and Preservice Teachers- Frank; Adams</td>
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<td>7. Building Effective High School Math Programs for Each and Every Student- Larson</td>
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<td>8. Tying It Together: Preparing Teachers of Mathematics to Integrate Equity, Formative Assessment, and Effective Teaching- Silver, Burton, &amp; Strutchens</td>
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<td>10. Developing Growth Mindsets in Preservice Elementary Teachers While Engaging in Problem Solving and Algebraic Thinking- Slate Young &amp; Roller</td>
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<td>11. Evaluating the Impact and Outcomes of Teacher Preparation Programs in Mathematics- Walkowiak</td>
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<td>12. A Rubric for Assessing Practice-Based Mathematics Teacher Education Assignments- Slavit &amp; deVincenzi</td>
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<td>13. A Mathematics Teacher Education Instrument Repository: Beta Testing the Design- van Ingen &amp; Goffney</td>
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<td>14. Collaborating With Teachers to Support Shifts in Classroom Practice- Galindo &amp; Yoder</td>
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<td>11:00 AM - 11:45 AM</td>
<td>15. Developing Preservice Teachers’ TPACK of Function Using a Vending Machine Metaphor Applet- Lovett, Dick, McCulloch, Sherman, &amp; Martin</td>
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<td>16. Activities to Facilitate Middle and Secondary Mathematics Teachers' Learning of Distribution Within Professional Development- Peters &amp; Watkins</td>
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<td>17. Whiteness in Mathematics Teacher Education: Supporting Preservice Teachers in Noticing and Challenging Whiteness in Classrooms- Battey</td>
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<td>18. Examining Preservice Teachers’ Informal Field Experiences- Matney &amp; Bostic</td>
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<td>19. Mathematical Modeling as an Equitable Teaching Practice – Using Math to Impact our Communities- Jamieson, Seshaiyer, &amp; Hunt</td>
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<td>20. Connecting Teaching Practices to Student Learning to Develop Well-Prepared Beginning (and Experienced) Teachers of Mathematics- McGatha &amp; Bay-Williams</td>
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<td>21. Why and How to Use Articles from NCTM's Practitioner Journals in Preservice Teacher Content Courses- Strand &amp; Thanheiser</td>
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<td>22. Diverse Students' Perspectives of Social Justice Mathematics: How do Experiences With Privilege and Marginalization Influence Takeaways?- Kokka</td>
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<td>23. Supporting Teams of General and Special Education Teachers Through Coaching Cycles- Harbour &amp; Livers</td>
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<td>24. Video-based Formative Feedback: Supporting Inservice Teachers' Learning- Garner, &amp; Chen</td>
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<td>25. Through the Looking Glass: A Qualitative Meta-Synthesis of Algebra I Instructional Strategies- Hott, Dibbs, &amp; Kline</td>
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<td>26. Paralleling the Five Practices to Enhance Discussion of Noticing in Classroom Video- Stockero</td>
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Session 3
Development of Mathematics Teacher Educators Symposium

I AM NEW TO MATHEMATICS TEACHER EDUCATION: REALITIES OF TEACHING, SCHOLARSHIP, AND SERVICE
Sararose Lynch, Westminster College
Julie S. James, University of Mississippi
Samuel L. Eskelson, University of Northern Iowa
Trena Wilkerson, Baylor University
Patrice Parker Waller, California State University, Fullerton

Those who are new to the mathematics teacher education community are invited to this networking opportunity. Leaders from the field, who represent a variety of rank and institution types, will lead roundtable discussions. Participants will craft their own session experience.

Session 4
Teacher Professional Development Individual Session

USING VERTICAL ARTICULATION TO UNPACK LEARNING TRAJECTORIES DURING A COACH-FACILITATED LESSON STUDY
Jennifer Suh, George Mason University
Sara Birkhead, George Mason University

In this session, we will share PD routines and tools used during a content-focused institute and lesson study to deepen teachers’ and coaches’ understanding of the mathematics learning progression of rational number concepts through the analysis of student learning trajectories.

Session 5
Teaching and Learning with Technology Individual Session

COMPARING MULTI-MEDIA PLATFORMS: APPROXIMATING PRACTICE & ALIGNING INSTRUCTION
Tracy Weston, Middlebury College
Karl Wesley Kosko, Kent State University
Julie Amador, University of Idaho
Anne Estapa, Iowa State University

We studied how multi-media platforms (LessonSketch and GoAnimate) used by prospective teachers (n=99) to create approximations of practice affected their illustrated questioning strategies. Based on our findings, we will align use of such multimedia platforms with particular instructional aims.

Session 6
Equity, Social Justice, and Mathematics Teacher Education

BRIEF REPORT SESSION: EQUITY AND PRESERVICE TEACHERS
EXPLORE THE RACIALIZED EXPERIENCES OF BLACK MATHEMATICS TEACHERS
Toya Jones Frank, George Mason University

We present findings from a study of pre- and inservice Black mathematics teachers on their racialized experiences while teaching mathematics. This research illuminates what stakeholders can learn from teachers of color experiences to inform mathematics teacher education and policy.

LEARNING FROM A MATHEMATICS LESSON TAUGHT IN BENGALI: IMPACTING PRESERVICE ELEMENTARY TEACHERS’ SUPPORT FOR ELLS
Anne E. Adams, University of Idaho

This study examined the impact on native English speaking elementary preservice teachers of a simulated mathematics lesson taught in Bengali. Participants’ written reflections and pre and post mathematics lesson plan supports for English language learners were collected and analyzed.

Session 7
NCTM Presidential Exchange Session Individual Session

BUILDING EFFECTIVE HIGH SCHOOL MATH PROGRAMS FOR EACH AND EVERY STUDENT
Matthew R. Larson, National Council of Teachers of Mathematics

Traditionally high school mathematics has supported college readiness for some students while simultaneously alienating others. This session will preview the NCTM report on High School Mathematics scheduled for release at the 2018 NCTM Annual Meeting in Washington DC.

Session 8
Equity, Social Justice, and Mathematics Teacher Education Individual Session

TYING IT TOGETHER: PREPARING TEACHERS OF MATHEMATICS TO INTEGRATE EQUITY, FORMATIVE ASSESSMENT, AND EFFECTIVE TEACHING
Edward Silver, University of Michigan
Megan Burton, Auburn University
Marilyn Elaine Strutchens, Auburn University

Equity, formative assessment, and effective mathematics instruction are often treated as distinct topics in teacher preparation. In this session we will use tasks, vignettes, and videos to illustrate how these topics can be treated in a more integrated fashion.
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<td>Preservice Teacher Field Experiences</td>
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<td><strong>VIDEO ANALYSIS SUPPORTING PRESERVICE TEACHERS' NOTICING THROUGH CYCLES OF STRUCTURED OBSERVATION AND REFLECTION</strong></td>
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<tr>
<td>Melissa Gallagher, University of Louisiana at Lafayette</td>
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<td>Preservice teachers co-taught a summer PDS Math Lab that entailed: a) Collaborative planning; b) Structured Observations focused on ambitious teaching; c) Use of the MQI. The author details the affordances and challenges of the structured observation with video analysis.</td>
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<td>Mathematics Pedagogy and Instructional Practice</td>
<td>Individual Session</td>
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<td><strong>A RUBRIC FOR ASSESSING PRACTICE-BASED MATHEMATICS TEACHER EDUCATION ASSIGNMENTS</strong></td>
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<td>David Slavit, Washington State University Vancouver</td>
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<tr>
<td>Allison Therese deVincenzi, Washington State University Vancouver</td>
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<td>Practice-based mathematics teacher education assignments include lesson planning, task modification, and problem-solving interviews. We will share our general rubric for assessing such assignments. Participants will score PST work samples and critique the content and effectiveness of the tool.</td>
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<td><strong>DEVELOPING GROWTH MINDSETS IN PRESERVICE ELEMENTARY TEACHERS WHILE ENGAGING IN PROBLEM SOLVING AND ALGEBRAIC THINKING</strong></td>
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<tr>
<td>Erica Slate Young, Appalachian State University</td>
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<tr>
<td>Sarah A. Roller, University of Alabama in Huntsville</td>
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<td>We will share results and a mindset activity from a study that incorporated lessons and discussion about how to develop a growth mindset for learning mathematics into a Math for Elementary Teachers course unit about Problem Solving and Algebraic Thinking.</td>
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<td><strong>EVALUATING THE IMPACT AND OUTCOMES OF TEACHER PREPARATION PROGRAMS IN MATHEMATICS</strong></td>
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<tr>
<td>Temple A. Walkowiak, North Carolina State University</td>
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<tr>
<td>This session shares our evaluation model for the mathematics component of our elementary teacher preparation program. We will discuss how you can adapt our evaluation model to fit your particular context in terms of program size, goals, and available resources.</td>
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<tr>
<th>Session 13</th>
<th>Tanglewood</th>
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<tr>
<td>Development of Mathematics Teacher Educators</td>
<td>Discussion Session</td>
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<tr>
<td><strong>A MATHEMATICS TEACHER EDUCATION INSTRUMENT REPOSITORY: BETA TESTING THE DESIGN</strong></td>
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<tr>
<td>Sarah Ann van Ingen, University of South Florida</td>
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<td>Imani Goffney, University of Maryland-College Park</td>
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<tr>
<td>We solicit feedback from participants on a beta version of an instrument repository. After exploring the online repository, participants will discuss how to refine the upload, search, and interactive features to best meet the needs of mathematics teacher educators.</td>
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<tr>
<th>Session 14</th>
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<tr>
<td>Teacher Professional Development</td>
<td>Individual Session</td>
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<tr>
<td><strong>COLLABORATING WITH TEACHERS TO SUPPORT SHIFTS IN CLASSROOM PRACTICE</strong></td>
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<tr>
<td>Enrique Galindo, Indiana University</td>
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<tr>
<td>Gina Borgioli Yoder, Indiana University, Indianapolis</td>
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<tr>
<td>Using a model of professional development that is responsive and emergent we collaborated with K-6 teachers to support their shifts in classroom practice. We share lessons learned as teachers developed their teaching skills and their mathematical knowledge for teaching.</td>
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</table>
### Session 15 Plaza I

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

**DEVELOPING PRESERVICE TEACHERS’ TPACK OF FUNCTION USING A VENDING MACHINE METAPHOR APPLET**  
Jennifer N. Lovett, Middle Tennessee State University  
Lara Dick, Bucknell University  
Allison McCulloch, University of North Carolina Charlotte  
Milan Sherman, Drake University  
Kristi Martin, North Carolina State University

We present a secondary methods lesson designed to develop PSTs’ TPACK of function. PSTs professionally noticed middle-school students’ work on an applet designed to develop a definition of function. Participants will engage with lesson tasks and analyze PSTs’ work.

### Session 16 Plaza II

**Teacher Professional Development**  
**Individual Session**

**ACTIVITIES TO FACILITATE MIDDLE AND SECONDARY MATHEMATICS TEACHERS’ LEARNING OF DISTRIBUTION WITHIN PROFESSIONAL DEVELOPMENT**  
Susan A. Peters, University of Louisville  
Jonathan D. Watkins, University of Louisville

Participants engage with concept-building activities that promote the teaching and learning of the foundational statistics concept of distribution for univariate and bivariate data. Discussion focuses on features of the activities identified by teachers as effective for developing their understandings.

### Session 17 Chevy Chase

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

**WHITENESS IN MATHEMATICS TEACHER EDUCATION: SUPPORTING PRESERVICE TEACHERS IN NOTICING AND CHALLENGING WHITENESS IN CLASSROOMS**  
Dan Battey, Rutgers University

This session presents a framework for whiteness in mathematics education along with classroom interactions that align with and counteract an ideology of whiteness. The goal is to support mathematics teacher educators and PSTs to notice and challenge whiteness in classrooms.

### Session 18 West Alabama

**Preservice Teacher Field Experiences**  
**Individual Session**

**EXAMINING PRESERVICE TEACHERS’ INFORMAL FIELD EXPERIENCES**  
Gabriel Matney, Bowling Green State University  
Jonathan David Bostic, Bowling Green State University

We will describe a study conducted on a mathematics education program that required PSTs to design and enact mathematics problem solving for K-12 students. Problem solving tasks will be shared along with results to leverage discussion about informal field experiences.

### Session 19 Galleria I

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

**MATHEMATICAL MODELING AS AN EQUITABLE TEACHING PRACTICE – USING MATH TO IMPACT OUR COMMUNITIES**  
Spencer Jamieson, Fairfax County (VA) Public Schools  
Padmanabhan Seshaiyer, George Mason University  
Michael E. Hunt, Houston (TX) Independent School District

See what mathematical modeling (MM) looks like in elementary school classrooms and ways in which MM promotes equitable teaching practices. We present specific ways for educators to help teachers discover their students’ interests and to formulate student-centered MM learning projects.

### Session 20 Galleria II and III

**Mathematics Pedagogy and Instructional Practice**  
**Individual Session**

**CONNECTING TEACHING PRACTICES TO STUDENT LEARNING TO DEVELOP WELL-PREPARED BEGINNING (AND EXPERIENCED) TEACHERS OF MATHEMATICS**  
Maggie McGatha, University of Louisville  
Jennifer M. Bay-Williams, University of Louisville

The Standards for Preparing Teachers of Mathematics and the NCTM Principles to Actions describe effective teaching practices. We will explore tools that help preservice and inservice teachers connect teaching practices to student learning opportunities and improve their own teaching practices.

### Session 21 Bellaire

**Mathematics Content, Processes, and Practices**  
**Individual Session**

**WHY AND HOW TO USE ARTICLES FROM NCTM’S PRACTITIONER JOURNALS IN PRESERVICE TEACHER CONTENT COURSES**  
Krista Strand, California State University, Chico  
Eva Thanheiser, Portland State University

In this session, we will share: (1) evidence-based ways to use articles from NCTM’s practitioner journals in content courses for preservice K-8 teachers, and (2) insights from our research on PSTs’ online discussions of such articles.
DIVERSE STUDENTS’ PERSPECTIVES OF SOCIAL JUSTICE MATHEMATICS: HOW DO EXPERIENCES WITH PRIVILEGE AND MARGINALIZATION INFLUENCE TAKEAWAYS?

Kari Kokka, University of Pittsburgh

This comparative case study investigates how students relate to Social Justice Mathematics and how their reactions to SJM may be influenced by their experiences with privilege and/or marginalization, taking into consideration the fluid and context-dependent nature of privilege and marginalization.

SUPPORTING TEAMS OF GENERAL AND SPECIAL EDUCATION TEACHERS THROUGH COACHING CYCLES

Kristin Harbour, University of Alabama
Stefanie Livers, Missouri State University

We highlight the development and implementation of coaching cycles situated in a larger professional development model to support teams of co-teachers in inclusive elementary mathematics classrooms. Coaching sessions centered on co-teaching practices, differentiation strategies, and high-quality mathematics tasks.

VIDEO-BASED FORMATIVE FEEDBACK: SUPPORTING INSERVICE TEACHERS’ LEARNING

Brette Garner, Vanderbilt University
Grace Chen, Vanderbilt University

We share findings from the development and implementation of video-based formative feedback cycle to support mathematics teachers’ learning opportunities. Participants will learn about the details of implementation, impacts on teachers’ learning opportunities, and implications for future work.

THROUGH THE LOOKING GLASS: A QUALITATIVE META-SYNTHESIS OF ALGEBRA I INSTRUCTIONAL STRATEGIES

Brittany Lynn Hott, Texas A&M University-Commerce
Rebecca A. Dibbs, Texas A&M University - Commerce
Taylor Kline, Texas A&M University-Commerce

This session shares results of a qualitative meta-analysis of Algebra I instructional strategies. The majority of studies focused on the use of technology, task based interviews, and group work. Implications for practice and future directions will be discussed.

PARALLELING THE FIVE PRACTICES TO ENHANCE DISCUSSION OF NOTICING IN CLASSROOM VIDEO

Shari L. Stockero, Michigan Technological University

Practices that parallel Smith and Stein's (2011) Five Practices for engaging students in productive mathematics discourse may enhance the orchestration of discussion of teachers' noticing in video. Examples will illustrate how such practices can support the facilitation of video-based discussions.
THURSDAY, FEBRUARY 8, 2018 11:45 AM - 1:00 PM

AMTE

THURSDAY LUNCH

WOODWAY I

Join your colleagues for lunch prior to the Thursday afternoon general session.

THURSDAY, FEBRUARY 8, 2018 1:00 PM - 2:30 PM

AMTE

GENERAL SESSION

GALLERIA II AND III

MEETING THE STANDARDS FOR PREPARING TEACHERS OF MATHEMATICS: WHAT WILL IT TAKE?

Kathryn Chval, University of Missouri
Julia Aguirre, University of Washington Tacoma
James Lewis, University of Nebraska Lincoln
Travis Olson, University of Nevada Las Vegas
Nicole Rigelman, Portland State University
Marilyn Elaine Strutchens, Auburn University

This session will provide opportunities for participants to discuss Candidate Standards with writing team members. A panel discussion will set the foundation for working group time. The panel will engage with participants to support implementation efforts at institutions.

After the beginning panel discussion, attendees will move into working groups in these rooms:

- Early Childhood: Post Oak & Westchester
- Upper Elementary: San Felipe & Sage
- Middle Level: Galleria Ballroom I
- High School: Bellaire & Tanglewood
### OVERVIEW OF THURSDAY AFTERNOON SESSIONS, FEBRUARY 8, 2018

<table>
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<tr>
<th>Time</th>
<th>Sessions</th>
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<tr>
<td>2:45 PM - 3:45 PM</td>
<td>29. Preparing Mathematics Teacher Educators to Advocate and Respond to Emerging Issues - Drake, Heid, McLeod, &amp; Jett</td>
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<td>30. Fraction Learning Trajectories in Preservice Teacher Education Content Courses - Tobías</td>
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<td>31. Improving Mathematical Knowledge for Teaching and Learning Proportional Reasoning - Ozgun-Koca, Lewis, &amp; Edwards</td>
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<td>32. Addressing Access and Equity in Secondary Methods Courses - Waller, Baldinger, &amp; Id-Deen</td>
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<td>33. Mathematics Teacher Educators’ Responsibilities and Roles in Advocating for LGBTQ+ Students, Teachers, and University Colleagues - Koestler, Whipple, Dubbs, &amp; Jacobs</td>
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<td>34. AMTE Equity Committee Exploration: To What Extent are AMTE Members Addressing/Met the Indicators Toward Equity - Civil, Bartell, Bullock, &amp; Fernandes</td>
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<td>35. Comparing Teachers’ and Teacher Educators’ Values for Secondary Methods Courses - Otten, Yee, &amp; Taylor</td>
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<td>36. Going Beyond the Framework: Operationalizing an Equity Framework in Designing Quantitative Surveys - Mohr-Schroeder, Jackson, Maiorca, Delaney, &amp; Roberts</td>
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<td>37. Brief Report Session: Planning for Instruction - Munter &amp; Haines; Webel, Engledowl, &amp; Yeo; Willingham &amp; Gibson</td>
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<td>38. Variation and Intentionality in Teaching Mathematics Methods Courses: A Focus on Video Cases - Casey, Fox, &amp; Lischka</td>
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<td>39. Early School-Based Learning Field Experiences: Embedding and Enacting Core Teaching Practices in Authentic Classroom Settings - Billings, Ball, &amp; Benincasa</td>
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<td>40. Using the Instructional Quality Assessment (IQA) as a Professional Development Tool With Mathematics Teachers - Candela &amp; Boston</td>
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<td>4:15 PM - 6:00 PM</td>
<td>41. Informal Reflection as a Stimulus of Teacher Learning - Rupnow &amp; Barker</td>
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<td>42. Brief Report Session: Elementary Grades Preservice Teachers - Nurnberger-Haag; Utley, Reeder, &amp; Redmond-Sanogo</td>
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<td>43. Brief Report Session: Equity and Teachers - Chen &amp; Garner; Raygoza; Lee</td>
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<td>45. Launching Learning, Learning Launching: Developing Shared Images of Launching Rich Tasks - Wieman, Jackson, Jansen, Kelemanik, Land, &amp; Tyminski</td>
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<td>46. Hidden Figures: Analyzing Race and Gender Bias in Mathematics Education - Jacobs &amp; Sherman</td>
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<td>47. Examining the Elementary Mathematics Project’s Curriculum for Preservice Elementary Mathematics Content Courses - Feldman, Callis, Starks, &amp; Batista</td>
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<td>49. Collaborating to Align Programs With the Standards for Preparing Teachers of Mathematics - Bay-Williams, Bezuk, Martin, &amp; Clements</td>
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<td>51. Advanced Mathematics Courses for Secondary Teachers: An Instructional Model for Connecting to Secondary Teaching Practice - Wasserman &amp; McGuffey</td>
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<td></td>
<td>52. Attending to the Social, Historical, and Institutional Contexts of Education in Mathematics Methods Courses - Yeh, Stoehr, Chao, Ozturk, &amp; Lin</td>
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</table>
PREPARING MATHEMATICS TEACHER EDUCATORS TO ADVOCATE AND RESPOND TO EMERGING ISSUES
Corey Drake, Michigan State University
M.Kathleen Heid, Pennsylvania State University
Kevin McLeod, University of Wisconsin-Milwaukee
Christopher Jett, University of West Georgia

Given recent changes in education policy, it is critical that mathematics teacher educators are prepared to advocate proactively on behalf of students, teachers, and mathematics education. This session will support mathematics teacher educators in developing strategies and tools for advocacy.

FRACTION LEARNING TRAJECTORIES IN PRESERVICE TEACHER EDUCATION CONTENT COURSES
Jennifer M. Tobias, Illinois State University

Results from two studies, analyzing the ways in which preservice elementary and middle school teachers develop an understanding of fraction concepts and operations, will be shared. Learning trajectories from each study will be compared and discussed.

IMPROVING MATHEMATICAL KNOWLEDGE FOR TEACHING AND LEARNING PROPORTIONAL REASONING
S. Asli Ozgun-Koca, Wayne State University
Jennifer M. Lewis, Wayne State University
Thomas G. Edwards, Wayne State University

This session describes professional development delivered and aimed at improving proportional reasoning instruction using mathematical/engineering tasks set in authentic contexts. PD positively influenced participants’ MKT in ways that fostered improved instruction, with students working on authentic application tasks set in engaging contexts.

ADDRESSING ACCESS AND EQUITY IN SECONDARY METHODS COURSES
Patrice Parker Waller, California State University, Fullerton
Erin E. Baldinger, University of Minnesota
Lateefah Id-Deen, University of Louisville

This session addresses two dilemmas encountered when working with preservice secondary mathematics teachers: (1) the belief that mathematics is politically-neutral and there is no room for integration with social justice CRP and (2) the superficial implementation of CRP in designing mathematics tasks.
<table>
<thead>
<tr>
<th>Session 36</th>
<th>Post Oak</th>
<th>Equity, Social Justice, and Mathematics Teacher Education</th>
<th>Individual Session</th>
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</table>
| **GOING BEYOND THE FRAMEWORK: OPERATIONALIZING AN EQUITY FRAMEWORK IN DESIGNING QUANTITATIVE SURVEYS**
Margaret J. Mohr-Schroeder, University of Kentucky
Christa Jackson, Iowa State University
Cathrine Maiorca, California State University, Long Beach
Ashley Delaney, Iowa State University
Thomas Roberts, Bowling Green State University

We operationalize Gutiérrez's (2009) four dimensions of equity for investigating STEM literacy. We will engage the participants in the process of the creation of survey items on a quantitative survey that explicitly measures STEM literacy using Gutiérrez's work. |

<table>
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<tr>
<th>Session 37</th>
<th>Sage</th>
<th>Mathematics Pedagogy and Instructional Practice</th>
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| **BRIEF REPORT SESSION: PLANNING FOR INSTRUCTION**
**MATHEMATICS TEACHERS' ENACTMENT OF COGNITIVELY DEMANDING TASKS AND STUDENTS' PERCEPTION OF RACIAL DIFFERENCES IN OPPORTUNITY**
Charles Munter, University of Missouri
Cara Haines, University of Missouri

An examination of whether urban secondary students perceived racial differences in opportunities in mathematics, whether those perceptions differed by race, and the relation of those perceptions to a key instructional practice: teachers' choice and use of mathematical tasks. |

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<tr>
<th>Session 38</th>
<th>San Felipe</th>
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</table>
| **VARIATION AND INTENTIONALITY IN TEACHING MATHEMATICS METHODS COURSES: A FOCUS ON VIDEO CASES**
Stephanie Casey, Eastern Michigan University
Ryan Fox, Belmont University
Alyson E. Lischka, Middle Tennessee State University

Attendees will engage in analysis of a video case that was the focus of a survey study. Results showing variation among MTEs' reactions to the video will be shared, with focus on the differences among MTEs holding different theoretical perspectives. |

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<tr>
<th>Session 39</th>
<th>Tanglewood</th>
<th>Preservice Teacher Field Experiences</th>
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| **EARLY SCHOOL-BASED LEARNING FIELD EXPERIENCES: EMBEDDING AND ENACTING CORE TEACHING PRACTICES IN AUTHENTIC CLASSROOM SETTINGS**
Esther M.H. Billings, Grand Valley State University
Dayna Ball, Grand Valley State University
Oriana Benincasa, Grand Valley State University

We describe a school partnership where elementary preservice teachers take a 200-level integrated content-pedagogy math class (focused on number and operations) at a local urban school, learning about and enacting core teaching practices with grade-school children. |

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<tr>
<th>Session 40</th>
<th>Westchester</th>
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| **USING THE INSTRUCTIONAL QUALITY ASSESSMENT (IQA) AS A PROFESSIONAL DEVELOPMENT TOOL WITH MATHEMATICS TEACHERS**
Amber Grace Candela, University of Missouri - St. Louis
Melissa Boston, Duquesne University

This session will provide an overview of how an observational tool, Instructional Quality Assessment (IQA), can be used to frame professional development. Participants will analyze professional development activities and consider how the tool could support teachers' self-reflection and instructional improvement. |
THURSDAY AFTERNOON BREAK

GALLERIA FOYER

This is a great time to stretch, catch-up with colleagues, and visit the exhibitors.
Session 41
Teacher Professional Development
Individual Session

INFORMAL REFLECTION AS A STIMULUS OF TEACHER LEARNING
Theodore J. Rupnow, University of Nebraska at Kearney
David Barker, Illinois State University

In this session we describe one high school mathematics teacher's learning through informal reflection. We will share three types of reflection that produced learning and engage in a discussion of how to use these reflective practices individually and with teachers.

Session 42
Mathematics Content, Processes, and Practices

BRIEF REPORT SESSION: ELEMENTARY GRADES
PRESERVICE TEACHERS

PRESERVICE TEACHERS CRITIQUE CHILDREN'S TRADE BOOKS ABOUT SHAPES TO IMPROVE THEIR OWN KNOWLEDGE
Julie Nurnberger-Haag, Kent State University

The session reports the impact of an activity used with more than 200 preservice teachers (PSTs) in mathematics content and elementary mathematics methods courses designed to improve teachers' knowledge of geometric shapes as well as understand potential student conceptions.

REFLECTING ON BELIEFS ABOUT TEACHING MATHEMATICS: DRAW A MATHEMATICS TEACHER TEST AND RUBRIC
Juliana Utley, Oklahoma State University
Stacy Reeder, University of Oklahoma
Adrienne Anne Redmond-Sanogo, Oklahoma State University

Prospective teachers need the opportunity to reflect upon their beliefs about teaching mathematics. This session will examine the development of the Draw a Mathematics Teacher Test and rubric as well as how preservice elementary teachers envision their future mathematics classrooms.

Session 43
Equity, Social Justice, and Mathematics Teacher Education

BRIEF REPORT SESSION: EQUITY AND TEACHERS

HOW VETERAN MATHEMATICS TEACHERS (LEARN TO) ACT FOR EQUITY AND SOCIAL JUSTICE
Grace Chen, Vanderbilt University
Brette Garner, Vanderbilt University

From a longitudinal study of veteran mathematics teachers in a large urban district who are dedicated to equity and social justice, we share emerging findings about how they understand and act upon their commitments, and lessons for teacher educators.

MATHEMATICS TEACHERS' REFLECTIONS ON TEACHING ABOUT SOCIETAL INEQUALITY AS LESSONS FOR TEACHER EDUCATION
Mary Candace Raygoza, University of California, Los Angeles

This research report describes a study on mathematics teachers who teach about economic inequality (e.g. lessons about the distribution of wealth) and the lessons we can take away from their stories as mathematics teacher educators.

TEACHERS OF COLOR AND THEIR NEEDS TO SUPPORT EQUITY IN MATHEMATICS EDUCATION
Ji Hye Lee, The Ohio State University

The report explores teachers of color in the United States and examines what their needs are to support equity in mathematics education.
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<td>LEVERAGING WHAT STUDENTS KNOW: IMPROVING TEACHER NOTICING USING REAL-TIME FEEDBACK ON PROGRESS ALONG LEARNING TRAJECTORIES</td>
<td>Jere Confrey, North Carolina State University</td>
<td>William Gabriel McGowan, North Carolina State University</td>
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<td>Meetal Shah, North Carolina State University</td>
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<td>Explore a digital tool that provides real-time diagnostic assessment data to students and teachers, while providing PD opportunities for middle school math content and pedagogy. We share the results from one design study, documenting teachers' moves toward learner-centered instruction.</td>
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<td>LAUNCHING LEARNING, LEARNING LAUNCHING: DEVELOPING SHARED IMAGES OF LAUNCHING RICH TASKS</td>
<td>Rob Wieman, Rowan University</td>
<td>Kara Jackson, University of Washington</td>
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<td>Amanda Jansen, University of Delaware</td>
<td>Grace Kelemanik, Fostering Math Practices</td>
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<td>Tonia Jo Land, Drake University</td>
<td>Andrew Tyminski, Clemson University</td>
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<td>What do effective launches look like? What is expertise in launching? In this session, researchers, teacher educators and curriculum developers will share examples and will engage participants in discussion about effective launches.</td>
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<td>Equity, Social Justice, and Mathematics Teacher Education</td>
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<td>HIDDEN FIGURES: ANALYZING RACE AND GENDER BIAS IN MATHEMATICS EDUCATION</td>
<td>Judith E. Jacobs, JEJMath</td>
<td>Diana Sherman, Saint Anselm College</td>
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<td>Hidden Figures is the story of three Black women mathematicians who were an essential part of NASA's early space missions. After viewing videos, participants will analyze and identify the portrayed gender and racial biases and ways they were addressed</td>
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<td>Mathematics Content, Processes, and Practices</td>
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<td>EXAMINING THE ELEMENTARY MATHEMATICS PROJECT'S CURRICULUM FOR PRESERVICE ELEMENTARY MATHEMATICS CONTENT COURSES</td>
<td>Ziv Feldman, Boston University</td>
<td>Laura Kyser Callis, Curry College</td>
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<td>Rachel Starks, Boston University</td>
<td>Lisa Nguyen Batista, Boston University</td>
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<td>The Elementary Mathematics Project has created a robust set of instructional materials for teacher educators who teach mathematics content courses for preservice elementary teachers. This workshop session will give participants opportunities to examine &amp; consider using EMP materials in their teaching.</td>
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<tr>
<td>Mathematics Pedagogy and Instructional Practice</td>
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<tr>
<td>PREPARING ELEMENTARY TEACHERS TO ENGAGE FAMILIES IN MATHEMATICS: ESSENTIAL ROUTINE PRACTICES</td>
<td>Emily Bonner, University of Texas at San Antonio</td>
<td>Crystal Kalinec Craig, University of Texas at San Antonio</td>
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<td>Julia Aguirre, University of Washington Tacoma</td>
<td>Amy Roth McDuffie, Washington State University</td>
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<td>Meaningful family engagement in mathematics learning is an essential practice. Unfortunately, this essential practice is often under-emphasized in mathematics methods courses. This session examines specific ways to better prepare preservice teachers to engage families around mathematics through adapting routine practices.</td>
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<td>Mathematics Education Policy and Program Issues</td>
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<tr>
<td>COLLABORATING TO ALIGN PROGRAMS WITH THE STANDARDS FOR PREPARING TEACHERS OF MATHEMATICS</td>
<td>Jennifer M. Bay-Williams, University of Louisville</td>
<td>Nadine Bezuk, San Diego State University</td>
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<td>W. Gary Martin, Auburn University</td>
<td>Douglas H. Clements, University of Denver</td>
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<td>This session will focus on the Standards for Preparing Teachers of Mathematics' call for action to improve teacher preparation programs by facilitating an extended discussion around these standards, with particular focus on program and course design (Program Standards P.2-P.4).</td>
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### Session 50
**Teacher Professional Development**
#### Extended Session

**GUIDING TEACHING PRINCIPLES TO IMPLEMENTING MATHEMATICAL MODELING IN THE ELEMENTARY GRADES**
Padmanabhan Seshaiyer, George Mason University
Jennifer Suh, George Mason University
Rachel Levy, Harvey Mudd College
Mary Alice Carlson, Montana State University
Spencer Jamieson, Fairfax County (VA) Public Schools
Michael E. Hunt, Houston (TX) Independent School District

In this session, we will share Mathematical Modeling tasks designed from real-world situations, introduced to elementary classroom teachers during a professional development program, that helped to enhance both teacher content knowledge and their pedagogical practices.

### Session 51
**Mathematics Content, Processes, and Practices**
#### Extended Session

**ADVANCED MATHEMATICS COURSES FOR SECONDARY TEACHERS: AN INSTRUCTIONAL MODEL FOR CONNECTING TO SECONDARY TEACHING PRACTICE**
Nicholas Wasserman, Teachers College, Columbia University
Will McGuffey, Teachers College, Columbia University

An instructional model for teaching advanced mathematics courses for secondary teachers is shared. Participants will explore two research-based tasks designed for and implemented in a real analysis course for secondary teachers. Implications for mathematics teacher education will be discussed.

### Session 52
**Equity, Social Justice, and Mathematics Teacher Education**
#### Extended Session

**ATTENDING TO THE SOCIAL, HISTORICAL, AND INSTITUTIONAL CONTEXTS OF EDUCATION IN MATHEMATICS METHODS COURSES**
Cathery Yeh, Chapman University
Kathleen Jablon Stoehr, Santa Clara University
Theodore Chao, The Ohio State University
Ayse Ozturk, The Ohio State University
Hochieh Lin, The Ohio State University

This session focuses on an integration of equity and access within three mathematics methods courses. Participants will engage in three activities aimed at developing awareness of and responsiveness to the social, historical, and institutional contexts of mathematics teaching and learning.

### Session 53
**AMTE Publications Session**
#### Extended Session

**PUBLICATIONS SESSION**
**MONARCH ROOM (24TH FLOOR)**

**TRANSITIONING AN IDEA INTO AN AMTE PUBLICATION: GETTING FEEDBACK**
Christine Browning, Western Michigan University

This session allows for personal feedback to potential authors for the quality improvement of manuscripts for AMTE's publications: Mathematics Teacher Educator, Contemporary Issues in Technology and Teacher Education-Math (CITE) and Connections, focusing on clarification of expectations for the relevant publication.
Hosted by AMTE President, Randolph Philipp

AMTE welcomes representatives of five organizations, all working in the Houston area, who will describe the services and support they provide to advance positive changes in attitudes, behaviors, and policies regarding equality and respectful treatment of LGBTQ+ individuals, families, and communities. All AMTE conference attendees are invited to attend, to learn, and to enjoy hors d’oeuvres.

ABOUT THE PARTICIPATING ORGANIZATIONS

**Equality Texas** is the largest statewide organization dedicated solely to securing full equality for LGBTQ Texans through political action, education, community organizing, and collaboration.

*Representative:* Lou Weaver
*equalitytexas.org*

**Gender Infinity** creates affirming spaces for families, learners, advocates, and providers to advance relationships, knowledge, and resources that empower gender diverse individuals. In our journey together we promote justice, equity, and hope in the celebration of infinite gender possibilities.

*Representatives:* Megan Mooney, PhD
Robbie Sharp, PhD
*genderinfinity.org*

**GLSEN Austin** strives to assure that each member of every school community is valued and respected regardless of sexual orientation or gender identity/expression. Since 1990, GLSEN has focused on LGBTQ issues in K-12 education by promoting healthy school climates that engender a positive sense of self, which is the basis of educational achievement and personal growth.

*Representative:* Nathan Smith, PhD
*glsen.org*

**PFLAG** members are dedicated to supporting lesbian, gay, bisexual, transgender and queer (LGBTQ) people and keeping them united with family members, friends and allies. PFLAG’s goal is to protect civil rights and promote equality for all citizens through a three-fold mission of support, education and advocacy.

*Representative:* Evelyn Carlson, President
*pflaghouston.org*

**The Montrose Center’s School House Program** strives to develop positive school environments through confidential, on-campus group counseling led by a Montrose Center therapist and the Gay-Straight Alliance (GSA) Resource Network which hosts trainings and support for GSA student leaders and staff facilitators. These measures significantly improve school retention and reduce student drop-out rates.

*Representative:* Debra Murphy, BS
Youth Services Specialist
*montrosecenter.org*
*hatchyouth.org*

Thank you to our guests for joining us at this event and to Angela Broaddus, Benedictine College, for coordinating the arrangements for this reception.
Conference participants have two options for breakfast.

**ADVOCACY & EMERGING ISSUES BREAKFAST**  WOODWAY I
Karen King, National Science Foundation
Della B. Cronin, Washington Partners, LLC

The annual AMTE Advocacy and Emerging Issues Breakfast highlights up-to-date initiatives and events related to policy in mathematics teacher education. Our invited speakers will participate in an open discussion about how they approach advocacy in various contexts and will highlight important issues AMTE members need to consider related to research and practice in our field. After brief introductions, the panel will respond to questions prepared by the Emerging Issues Committee (EIC). We will end with an open forum inviting questions from the audience and further discussion from the panel.

**FRIDAY BREAKFAST**  WOODWAY II
Join colleagues for breakfast and casual conversation.
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<tr>
<th>Time</th>
<th>Session Title</th>
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<td>8:00 AM</td>
<td>57. Teachers’ Orientations Around Using Student Mathematical Thinking as a Resource During Whole-class Discussion</td>
<td>Plaza I</td>
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<td>58. Co-Designing Statewide Efforts to Improve Mathematics Education Through Partnerships</td>
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<td>59. Brief Report Session: Eliciting and Responding to Student Thinking in Elementary Grades</td>
<td>Chevy Chase</td>
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<td>60. Preservice Teachers’ Beliefs and Competencies Related to Real World Problem Posing</td>
<td>West Alabama</td>
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<td>61. Elaborations of the Standards for the Preparation of Early Childhood Teachers of Mathematics</td>
<td>Galleria I</td>
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<td>62. Practical Measures of Instruction: Improving Mathematics Teaching With Quick, Actionable Feedback</td>
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<td>63. Strengths-based Mathematics Instructional Design for Struggling Learners</td>
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<td>65. Infusing Mathematics With History: A Capstone Course for Prospective Secondary Mathematics Teachers</td>
<td>Post Oak</td>
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<td>66. Meeting Teachers Where They Go and Where They Are: A New Form of Professional Development</td>
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<td>67. Enhancing the Student Teaching Experience Through Mentor Training - Roles, Responsibilities, and Characteristics of Good Mentors</td>
<td>San Felipe</td>
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<td>68. Three Courses Designed to Develop and Expand Middle Level Preservice Teachers’ Mathematical Content Capacities</td>
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<td>69. Brief Report Session: Equity and Students</td>
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<td>9:15 AM</td>
<td>70. Secondary Preservice Teachers’ Opportunities to Learn in Cycles of Enactment and Investigation (CEIs)</td>
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<td>71. Making and Strengthening Affiliate Connections:</td>
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<td>72. The Power of Debriefs in Practice-Based Mathematics Education Courses</td>
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<td>73. Successes and Challenges in Preparing Secondary Mathematics Teachers to Teach Probability and Statistics</td>
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<td>75. Early Career Mathematics Teachers’ Use of Technology to Teach Mathematics</td>
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<td>76. Factors That Impact MTEs’ Written Feedback Practice: Improving Practice Through Inquiry</td>
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<td>77. Using the PrimeD Framework to Understand, Guide, and Assess Secondary Mathematics Teacher Preparation</td>
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<td>78. Mathematics Classroom Observation Protocols:</td>
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<td>79. Supporting Teachers’ Understanding of Fractions:</td>
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<td>80. Exploring Disciplinary Computational Thinking and TPACK in Science, Technology, Engineering, and Mathematics With Robotics</td>
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<td>81. Molding Teachers’ Visions of Algebraic Learning and Teaching: Reflecting on a Three-Year Algebra Professional Development</td>
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<td>82. Brief Report Session: Developing Mathematics Teacher Educators</td>
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<td>PLAZA I</td>
<td>83. Mathematics Teacher Educators’ Inquiry Into Their Practice: Unpacking Methodologies for Professional and Personal Growth- Suazo Flores, Kastberg, Ward, &amp; Cox</td>
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<td>PLAZA II</td>
<td>84. Considering the AMTE Standards for Preparing Teachers of Mathematics: Implications for the Work of MTEs- Castro Superfine, Tyminski, Marshall, Shaughnessy, &amp; Goffney</td>
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<td>CHEVY CHASE</td>
<td>85. Supporting Teachers’ Use of Argumentation in the Mathematics Classroom- Gomez, Conner, Staples, &amp; Cavanna</td>
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<tr>
<td>WEST ALABAMA</td>
<td>86. Brief Report Session: Preservice Teachers- Zhao &amp; Haines; Callis; Gerstenschlager &amp; Barlow</td>
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<td>GALLERIA I</td>
<td>87. Mathematical Modeling and Social Justice: A Powerful Combination for Teacher Learning and Preparation- Aguirre, Anhalt, Simic-Muller, Turner, &amp; Cortez</td>
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<td>GALLERIA II</td>
<td>88. Online Mathematics Teacher Collaboration: Twitter and Blogs as Learning Spaces for Mathematics Teachers- Wilhelm, Jansen, Litke, &amp; Parrish</td>
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<td>GALLERIA III</td>
<td>89. Using Virtual Spaces to Promote Teacher Professional Growth: Acting to Believing- Milewski, Amidon, Bardelli, &amp; Boileau</td>
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<td>BELLAIRE</td>
<td>90. Preparing Prospective Mathematics Teacher Educators to Teach Via Problem Solving- Masingila, Altindis, Wambua, Wambua, Waswa, &amp; Wilson</td>
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<td>POST OAK</td>
<td>91. Supporting Mathematics Teacher Educators in Online and Hybrid Teaching- Swartz, Junor Clarke, Wheeler, Wieman, Rhine, Smith, &amp; Perry</td>
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<td>SAGE</td>
<td>92. A Shared Vision for Teacher Improvement: Adapting Professional Development for Local Context by Leveraging District-Developed Tools- Fong, Dyer, &amp; Gomez Zaccarelli</td>
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<tr>
<td>SAN FELIPE</td>
<td>93. Creating Opportunities for Prospective Elementary Teachers to Learn Mathematics: Perspectives and Personal Journeys- Stump, Underwood, Berry, &amp; Max</td>
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<tr>
<td>WESTCHESTER</td>
<td>95. Building Concept Images of Core Algebraic Ideas: Implications for Teacher Preparation- Dick, Burrill, &amp; Zbiek</td>
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</table>
### Session 57 Plaza I  
**Mathematics Pedagogy and Instructional Practice**  
**Individual Session**

**TEACHERS’ ORIENTATIONS AROUND USING STUDENT MATHEMATICAL THINKING AS A RESOURCE DURING WHOLE-CLASS DISCUSSION**

Keith R. Leatham, Brigham Young University  
Shari L. Stockero, Michigan Technological University  
Mary A. Ochieng, Western Michigan University  
Laura R. Van Zoest, Western Michigan University  
Blake E. Peterson, Brigham Young University

We characterize teachers’ orientations related to using student mathematical thinking as a resource during whole-class discussion. We consider the potential these orientations provide to either support or hinder the development of the practice of building on student mathematical thinking.

### Session 58 Plaza II  
**School and University Partnerships and Projects**  
**Individual Session**

**CO-DESIGNING STATEWIDE EFFORTS TO IMPROVE MATHEMATICS EDUCATION THROUGH PARTNERSHIPS**

Jared Webb, University of North Carolina, Greensboro  
Holt Wilson, University of North Carolina, Greensboro  
Michelle L. Stephan, University of North Carolina, Charlotte

We report on an effort to co-design a statewide initiative related to new state mathematics content standards with an aim of promoting more equitable learning opportunities for students, including results from an ongoing study of district mathematics leaders and teachers.

### Session 59 Chevy Chase  
**Mathematics Pedagogy and Instructional Practice**

**BRIEF REPORT SESSION: ELICITING AND RESPONDING TO STUDENT THINKING IN ELEMENTARY GRADES**

**EXPLORING PEDAGOGIES OF PRACTICE: THE DEVELOPMENT OF PRESERVICE TEACHERS’ CAPACITY TO ENACT MATHEMATICAL TEACHING PRACTICES**

Kathleen Nitta, Washington State University

This session reports on a pilot study that explored how pedagogies of practice support the development of preservice teachers’ knowledge and skills to elicit and respond to student thinking. The study settings included both university and elementary classroom contexts.

**TEACHING ELEMENTARY METHODS COURSES THROUGH COGNITIVELY GUIDED INSTRUCTION (CGI)**

Luz Angelica Maldonado, Texas State University

This session describes how CGI is used in teaching elementary mathematics methods courses. Implementation examples are shared regarding a semester long project involving collaboration with first grade teachers where the focus is children’s mathematical strategies and teacher instructional decision making.

**USING MEANING FIELDS TO UNDERSTAND STUDENTS’ MATHEMATICAL DRAWINGS**

Theodore Savich, Indiana University  
Erik Jacobson, Indiana University

How do teachers promote students’ flexible use of mathematical drawings in the classroom? We report on 4th grade student work samples (n = 1710) and teacher interviews (n = 10) to explore why drawings are hard to teach and learn.

### Session 60 West Alabama  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Individual Session**

**PRESERVICE TEACHERS’ BELIEFS AND COMPETENCIES RELATED TO REAL WORLD PROBLEM POSING**

Ksenija Simic-Muller, Pacific Lutheran University  
Anthony Fernandes, University of North Carolina Charlotte

This session investigates preservice teacher beliefs about teaching mathematics through real world contexts and their capacity for and interest in creating authentic problems about real world contexts, particularly controversial issues and injustices. We present findings from a survey, interviews, and assignments.
Session 61  
Mathematics Education Policy and Program Issues  
Individual Session  

ELABORATIONS OF THE STANDARDS FOR THE PREPARATION OF EARLY CHILDHOOD TEACHERS OF MATHEMATICS  
Douglas H. Clements, University of Denver  
DeAnn Huinker, University of Wisconsin-Milwaukee  
Nicole Rigelman, Portland State University  
Dorothy Y. White, University of Georgia  

Examine and discuss the knowledge, skills, dispositions, and actions that well-prepared beginning Early Childhood mathematics teachers need to develop, the implications for high-quality preservice programs, and the alignment (or mis-alignment) to the Standards for Preparing Teachers of Mathematics.

Session 62  
Mathematics Pedagogy and Instructional Practice  
Individual Session  

PRACTICAL MEASURES OF INSTRUCTION: IMPROVING MATHEMATICS TEACHING WITH QUICK, ACTIONABLE FEEDBACK  
Nicholas Kochmanski, Vanderbilt University  
Michael Jarry-Shore, Stanford University  
Kara Jackson, University of Washington  
Emma Trevino, San Francisco (CA) Unified School District  
Hilda Borko, Stanford University  

In this session, participants will examine two brief surveys that assess students’ perceptions of classroom discussions. They will interpret representations displaying students’ answers to these surveys, and consider how the data might be useful in their work supporting teacher learning.

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

STRENGTHS-BASED MATHEMATICS INSTRUCTIONAL DESIGN FOR STRUGGLING LEARNERS  
Karen Karp, Johns Hopkins University  

Preservice teachers are traditionally taught to identify and remediate students’ mathematical misconceptions and weaknesses, particularly for students with disabilities. This session discusses reframing students’ mathematical learning opportunities by identifying their strengths (not deficits) as the basis for building mathematical understanding.

Session 64  
Teaching and Learning with Technology  
Individual Session  

TECHNOLOGY FOR ELEMENTARY TEACHERS: WHAT’S IN THE BOOK?  
Dusty Jones, Sam Houston State University  
Mark L. Klespis, Sam Houston State University  

How is technology presented in mathematics textbooks for elementary teachers? We share the results of a research study of popular textbooks, illustrating commonalities and unique features. Participants will discuss the roles of instructor, textbook, and technology in mathematics content courses.

Session 65  
Mathematics Content, Processes, and Practices  
Individual Session  

INFUSING MATHEMATICS WITH HISTORY: A CAPSTONE COURSE FOR PROSPECTIVE SECONDARY MATHEMATICS TEACHERS  
Jane Keiser, Miami University  
Suzanne Rushton Harper, Miami University  

We will introduce and share materials from our mathematics history course. One module will be explored in depth, giving participants time to interact with the mathematics from a historical perspective. A discussion of how participants integrate CAEP history standards will follow.

Session 66  
Teacher Professional Development  
Individual Session  

MEETING TEACHERS WHERE THEY GO AND WHERE THEY ARE: A NEW FORM OF PROFESSIONAL DEVELOPMENT  
Zandra de Araujo, University of Missouri  
Samuel Otten, University of Missouri  
Wennmin Zhao, University of Missouri  
Sheunghyun Yeo, University of Missouri  

This session introduces a new form of mathematics teacher professional development that utilizes social media to share instructional ideas in a manner that fits within teachers’ planning constraints. Discussion involves reconceptualizing the characteristics of effective professional development into online settings.

Session 67  
Preservice Teacher Field Experiences  
Individual Session  

ENHANCING THE STUDENT TEACHING EXPERIENCE THROUGH MENTOR TRAINING - ROLES, RESPONSIBILITIES, AND CHARACTERISTICS OF GOOD MENTORS  
James Beyers, The College of New Jersey  
Cathy Liebars, The College of New Jersey  

Being an effective teacher does not necessarily translate to being an effective mentor. Participants will learn techniques used to support mentors of student teachers, and reflect on how such support can benefit cooperating teachers as well as student teachers.
THREE COURSES DESIGNED TO DEVELOP AND EXPAND MIDDLE LEVEL PRESERVICE TEACHERS’ MATHEMATICAL CONTENT CAPACITIES
Janet A. White, Millersville University of Pennsylvania
Cynthia E. Taylor, Millersville University of Pennsylvania
Michael Wismer, Millersville University of Pennsylvania

Perspectives will be shared from a three course mathematics content sequence designed for all middle level majors focusing on developing relevant mathematical knowledge. Successes and challenges with course implementation and resources, including a colleague’s new algebra textbook, will be discussed.

BRIEF REPORT SESSION: EQUITY AND STUDENTS
AUTHORITY DYNAMICS OF PRESERVICE MIDDLE SCHOOL TEACHERS DURING GROUP WORK PENCASTS: AUTHORITY VS. INFLUENCE
Rebecca A. Dibbs, Texas A&M University - Commerce

This case study explored the development of authority, influence, and participation during group work. A discourse analysis was performed to discover several relationships among three different theoretical frameworks. These relationships have critical implications for both practitioners and researchers.

PRINCIPLES TO RESEARCH PRACTICE: A SYSTEMATIC REVIEW OF META-ANALYSIS IN MATHEMATICS EDUCATION TO PROMOTE EQUITY
Jamaal Rashad Young, University of North Texas

A systematic review of 43 meta-analyses conducted between 2000 and 2017 was conducted. Particular attention is placed on the examination of equity moderators (race, ability, etc.). Implications are provided for research, teaching, and learning to support the NCTM Equity Principle.
### Session 70  
**Plaza I**  
**Mathematics Pedagogy and Instructional Practice**  
**Individual Session**  

**SECONDARY PRESERVICE TEACHERS’ OPPORTUNITIES TO LEARN IN CYCLES OF ENACTMENT AND INVESTIGATION (CEIS)**  
Fran Arbaugh, Pennsylvania State University  
Ben Freeburn, MOST Research Associate  
Nursem Konuk, Pennsylvania State University  
Duane Graysay, Syracuse University  

Participants in this session will learn about and discuss the details of a Cycle of Enactment and Investigation (CEI) implemented in a secondary mathematics methods course and consider the opportunities for PST learning during each phase of the cycle.

### Session 71  
**Plaza II**  
**Mathematics Education Policy and Program Issues**  
**Symposium**  

**MAKING AND STRENGTHENING AFFILIATE CONNECTIONS: STRONGER TOGETHER**  
Thomas Evitts, Shippensburg University  
Maureen Grady, East Carolina University  
Mary Pat Sjostrom, Winthrop University  
Michelle L. Stephan, University of North Carolina, Charlotte  
Hartono Tjoe, Pennsylvania State University, Berks Campus  

In this session, representatives of AMTE affiliates can make connections with other affiliates and affiliate leaders, learn more about connections among affiliates and with AMTE, and share ideas for connecting to their members and to policy makers.

### Session 72  
**Chevy Chase**  
**Preservice Teacher Field Experiences**  
**Individual Session**  

**THE POWER OF DEBRIEFS IN PRACTICE-BASED MATHEMATICS EDUCATION COURSES**  
Melinda Knapp, Oregon State University-Cascades  
Rajeev Virmani, Sonoma State University  
Dawn Woods, Southern Methodist University  
Catherine Schwartz, East Carolina University  
Barbara Ann Swartz, McDaniel College  
Sararose Lynch, Westminster College  

This presentation discusses findings from how carefully planned and facilitated debriefing conversations had the potential to increase PSTs’ noticing of productive teaching moves associated with eliciting and responding to student thinking within the context of practice-based mathematics education courses.

### Session 73  
**West Alabama**  
**Mathematics Content, Processes, and Practices**  
**Individual Session**  

**SUCCESSES AND CHALLENGES IN PREPARING SECONDARY MATHEMATICS TEACHERS TO TEACH PROBABILITY AND STATISTICS**  
Maryann Huey, Drake University  
Wendy Weber, Central College  

This session is based upon our research and experiences in preparing four cohorts of secondary teachers to teach probability and statistics content aligned with the CCSS-M. Successes and challenges will be shared to inform future professional development efforts.

### Session 74  
**Galleria I**  
**Equity, Social Justice, and Mathematics Teacher Education**  
**Discussion Session**  

**SEEING POWER AND WHITENESS: A CRITICAL SELF-EXAMINATION ON THE DESIGN OF EQUITY-ORIENTED PROFESSIONAL DEVELOPMENT**  
Beth Herbel-Eisenmann, Michigan State University  
Sungwhan Byun, Michigan State University  
Courtney Koestler, OHIO Center for Equity  
Tonya Bartell, Michigan State University  

We critically examine professional development we designed that aimed to engage teachers in equity-oriented action research. This work can be educative for mathematics education researchers and teacher educators who want to interrogate acts of privilege occurring in common academic practices.

### Session 75  
**Galleria II**  
**Teaching and Learning with Technology**  
**Individual Session**  

**EARLY CAREER MATHEMATICS TEACHERS’ USE OF TECHNOLOGY TO TEACH MATHEMATICS**  
Karen Hollebrands, North Carolina State University  
Allison McCulloch, University of North Carolina Charlotte  
Asli Mutlu, North Carolina State University  
Taylor Ray Harrison, North Carolina State University  

In this session, we report findings from a study of 21 early career mathematics teachers’ use of technology and share information about open-access curricula for mathematics teacher educators, which includes a new video resource library entitled, “Voices from the Field”.
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<td>2018 Award for Excellence in Teaching</td>
<td>FACTORS THAT IMPACT MTE'S WRITTEN FEEDBACK PRACTICE: IMPROVING PRACTICE THROUGH INQUIRY</td>
<td>Teaching and Learning with Technology</td>
<td>EXPLORING DISCIPLINARY COMPUTATIONAL THINKING AND TPACK IN SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS WITH ROBOTICS</td>
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<tr>
<td>Discussion Session</td>
<td>Signe Kastberg, Purdue University Alyson E. Lischka, Middle Tennessee State University Susan L. Hillman, Saginaw Valley State University</td>
<td>The AMTE Excellence in Teaching Award Winner and her collaborative self-study colleagues will engage participants in a reflective discussion of key factors that influence feedback practice, framed as a relational practice within mathematics teacher education. Ideas for improving MTE feedback as an instantiation of practice for prospective teachers will be explored.</td>
<td>Leslie Ann Suters, Tennessee Tech University This session describes activities and findings from two summer institutes focused on programming and robotics as a means to improve teachers' math and science content and pedagogical knowledge. Embedding computational thinking within STEM provides opportunities to prepare creative/critical thinkers.</td>
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<tr>
<td>Mathematics Education Policy and Program Issues</td>
<td>USING THE PRIMED FRAMEWORK TO UNDERSTAND, GUIDE, AND ASSESS SECONDARY MATHEMATICS TEACHER PREPARATION</td>
<td>Mathematics Pedagogy and Instructional Practice Symposium</td>
<td>MOLDING TEACHERS' VISIONS OF ALGEBRAIC LEARNING AND TEACHING: REFLECTING ON A THREE-YEAR ALGEBRA PROFESSIONAL DEVELOPMENT</td>
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<td>Individual Session</td>
<td>Christopher Rakes, University of Maryland Baltimore County Robert Nicholas Ronau, National Science Foundation Sarah B. Bush, University of Central Florida Margaret J. Mohr-Schroeder, University of Kentucky</td>
<td>This session will describe how the Professional Development: Implementation, Research, and Evaluation (PrimeD) framework guided the goals, implementation activities, evaluation, and research of a secondary mathematics teacher preparation program.</td>
<td>Jean S. Lee, University of Indianapolis Brooke Max, Purdue University Rick A. Hudson, University of Southern Indiana Yi-Yin Ko, Indiana State University Christine Taylor, Indiana State University Doris Mohr, University of Southern Indiana</td>
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<td>Development of Mathematics Teacher Educators</td>
<td>MATHEMATICS CLASSROOM OBSERVATION PROTOCOLS: INFORMING FUTURE RESEARCH AND PRACTICE</td>
<td>Mathematics Content, Processes, and Practices</td>
<td>SUPPORTING TEACHERS' UNDERSTANDING OF FRACTIONS: A MEASUREMENT APPROACH</td>
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<td>Discussion Session</td>
<td>Jonathan David Bostic, Bowling Green State University Kristin Lesseig, Washington State University Vancouver Milan Sherman, Drake University Melissa Boston, Duquesne University</td>
<td>Individual Session</td>
<td>Muteb Alqahtani, SUNY Cortland Arthur B. Powell, Rutgers University</td>
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<td>Our session goals are: (1) To engage in meaningful discussion around the issues associated with making claims about instructional quality based on classroom observations; and (2) To reflect on the affordances and constraints of choosing tools with substantive validity evidence.</td>
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<td>We report on how a measurement approach shapes preservice teachers' understanding and representation of fractions. In a two-week pedagogical intervention, teachers worked in small groups and engaged in mathematical activities using Cuisenaire rods to discuss fractions and operations on fractions.</td>
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BRIEF REPORT SESSION: DEVELOPING MATHEMATICS TEACHER EDUCATORS

"IT WAS LIKE BEING A FIRST YEAR TEACHER": DOCTORAL STUDENTS' EXPERIENCES BECOMING MATHEMATICS TEACHER EDUCATORS
Kari Jurgenson, Iowa State University

Teacher educators (TEs) prepare quality teachers, but how are quality TEs prepared? This session will attend to three doctoral students’ experiences and preparation in becoming new TEs. Their experiences will provide insight into suggestions for potential ways to prepare mathematics TEs.

BEING "CHALLENGED" AND MASKING MY OWN UNCERTAINTY: MY PARALLEL JOURNEY WITH ELEMENTARY PROSPECTIVE TEACHERS
Amber Simpson, Binghamton University

Do mathematics teacher educators outside of their grade band need specialized training? A self-study methodology was employed to understand the development of teaching and learning of mathematics as a discipline through interactions with elementary prospective teachers.

SURVEY REPORT ON PEDAGOGICAL PRACTICES FOR ONLINE MATHEMATICS TEACHER EDUCATION
Dinglei Huang, The Ohio State University

Results will be shared from a national survey on mathematics teacher educators’ pedagogical practices of online efforts to engage the community in a conversation about knowledge for conducting online mathematics teacher education.
### Session 83
**Plaza I**

**Equity, Social Justice, and Mathematics Teacher Education Symposium**

**MATHEMATICS TEACHER EDUCATORS’ INQUIRY INTO THEIR PRACTICE: UNPACKING METHODOLOGIES FOR PROFESSIONAL AND PERSONAL GROWTH**

Elizabeth Suazo Flores, Purdue University  
Signe Kastberg, Purdue University  
Jennifer Ward, University of South Florida  
Dana C. Cox, Miami University

MTEs engage in conversations about using narrative inquiry, self-study, and auto-ethnography to implement studies. These methodologies allowed us to empathetically and respectfully collaborate with teachers while also giving us an opportunity to develop self-awareness of our identity, experience, and bias.

### Session 84
**Plaza II**

**Development of Mathematics Teacher Educators Symposium**

**CONSIDERING THE AMTE STANDARDS FOR PREPARING TEACHERS OF MATHEMATICS: IMPLICATIONS FOR THE WORK OF MTEs**

Alison Castro Superfine, University of Illinois at Chicago  
Andrew Tyminski, Clemson University  
Anne Marie Marshall, Lehman College  
Meghan Shaughnessy, University of Michigan  
Imani Goffney, University of Maryland-College Park

In this symposium, we consider the implications of the AMTE Standards for the work of MTEs. We will illustrate the nature of our work and facilitate discussion of the knowledge and practices MTEs might need to effectively adopt them.

### Session 85
**Chevy Chase**

**Mathematics Pedagogy and Instructional Practice Symposium**

**SUPPORTING TEACHERS’ USE OF ARGUMENTATION IN THE MATHEMATICS CLASSROOM**

Carlos Nicolas Gomez, Clemson University  
AnnaMarie Conner, University of Georgia  
Megan Staples, University of Connecticut  
Jilllan Cavanna, University of Connecticut

Panelists from three projects focusing on developing and supporting teachers' argumentation in the mathematics classroom share the goals of their projects, perspectives on argumentation, and what they have learned about supporting teachers' argumentation in the mathematics classroom.

### Session 86
**West Alabama**

**Mathematics Content, Processes, and Practices**

**BRIEF REPORT SESSION: PRESERVICE TEACHERS**

**A LEARNING TRAJECTORY OF PROSPECTIVE TEACHERS’ CONCEPTION OF MATHEMATICAL MODELING**

Wenmin Zhao, University of Missouri  
Cara Haines, University of Missouri

This session will present findings about a hypothetical learning trajectory of secondary prospective teachers' understanding of mathematical modeling. We will also share implications of our study about how mathematical modeling can be infused into a methods course.

**INSTRUCTIONAL PRACTICES USED IN MATHEMATICS CONTENT COURSES FOR PRESERVICE TEACHERS: A LARGE SCALE SURVEY STUDY**

Laura Kyser Callis, Curry College

This session will present the findings of a large scale (n=458) survey on the instructional practices used in mathematics courses for preservice elementary teachers and the impact instructors' academic and professional background has on the use of these practices.

**NUMBER TALKS WITH PRESERVICE TEACHERS TO DEVELOP THREE LEVELS OF UNIT FOR FRACTIONS**

Natasha Erika Gerstenschlager, Western Kentucky University  
Angela T. Barlow, Middle Tennessee State University

We describe how we developed a series of number talks as a way to develop preservice teachers' understanding of three levels of unit within fractions with the anticipated outcome of teachers having a better understanding of fraction multiplication.

### Session 87
**Galleria I**

**Equity, Social Justice, and Mathematics Teacher Education Symposium**

**MATHEMATICAL MODELING AND SOCIAL JUSTICE: A POWERFUL COMBINATION FOR TEACHER LEARNING AND PREPARATION**

Julia Aguirre, University of Washington Tacoma  
Cynthia Oropesa Anhalt, University of Arizona  
Ksenija Simic-Muller, Pacific Lutheran University  
Erin Turner, University of Arizona  
Ricardo Cortez, Tulane University

This session addresses the challenge to prepare equity-based teachers of mathematics. Utilizing mathematical modeling tasks connected to environmental justice and fairness, presenters share ways to deepen teachers' understanding of mathematics and social justice in content courses, methods, and professional development.
Session 88
Teacher Professional Development
Symposium

ONLINE MATHEMATICS TEACHER COLLABORATION: TWITTER AND BLOGS AS LEARNING SPACES FOR MATHEMATICS TEACHERS
Anne Garrison Wilhelm, Southern Methodist University
Amanda Jansen, University of Delaware
Erica Litke, University of Delaware
Christopher Parrish, University of South Alabama

In this session, we will share and discuss across three different research projects aimed at supporting or understanding mathematics teachers’ participation in an online network of mathematics teachers, the Math Twitter Blogosphere.

Session 89
Mathematics Pedagogy and Instructional Practice
Symposium

USING VIRTUAL SPACES TO PROMOTE TEACHER PROFESSIONAL GROWTH: ACTING TO BELIEVING
Amanda M. Milewski, University of Michigan
Joel Amidon, University of Mississippi
Emanuele Bardelli, University of Michigan
Nicolas Boileau, University of Michigan

We examine the use of virtual spaces for supporting mathematics teacher education. We detail the problems of practice that led to the development of three different virtual environments for supporting both inservice and preservice teachers’ engagement in professional experimentation.

Session 90
Development of Mathematics Teacher Educators
Symposium

PREPARING PROSPECTIVE MATHEMATICS TEACHER EDUCATORS TO TEACH VIA PROBLEM SOLVING
Joanna O. Masingila, Syracuse University
Nigar Altindis, Syracuse University
Mitchelle Mbete Wambua, Syracuse University
Victoria Mwia Wambua, Syracuse University
Anne Nyarotso Waswa, Syracuse University
Tonya Rae Wilson, Syracuse University

We will discuss developing mathematical knowledge for teaching teachers through a Community of Practice engaged in teaching via problem solving. Participants will engage in tasks, discuss challenges when supporting prospective teachers, and reflect on experiences for prospective mathematics teacher educators.

Session 91
Teaching and Learning with Technology
Symposium

SUPPORTING MATHEMATICS TEACHER EDUCATORS IN ONLINE AND HYBRID TEACHING
Barbara Ann Swartz, McDaniel College
Pier Angeli Junor Clarke, Georgia State University
Ann Wheeler, Texas Woman’s University
Rob Wieman, Rowan University
Steve Rhine, Pacific University
Ryan C. Smith, Radford University
Jill A. Perry, Rowan University

Mathematics teacher educators may struggle to teach online and/or hybrid classes. Participants will explore strategies to promote effective instruction in online learning environments through breakout sessions based on different online instructional options/tools and experience with teaching online.

Session 92
School and University Partnerships and Projects
Symposium

A SHARED VISION FOR TEACHER IMPROVEMENT: ADAPTING PROFESSIONAL DEVELOPMENT FOR LOCAL CONTEXT BY LEVERAGING DISTRICT-DEVELOPED TOOLS
Alissa Barnett Fong, Stanford University
Elizabeth Dyer, Stanford University
Florence Gomez Zaccarelli, Stanford University

We present our work adapting existing professional development programs for mathematics teachers and teacher leaders to local context by incorporating frameworks and documents developed and used by a school district. Benefits, challenges, and strategies for this work will be discussed.

Session 93
Mathematics Content, Processes, and Practices
Symposium

CREATING OPPORTUNITIES FOR PROSPECTIVE ELEMENTARY TEACHERS TO LEARN MATHEMATICS: PERSPECTIVES AND PERSONAL JOURNEYS
Sheryl Stump, Ball State University
Diana Underwood, Purdue University Northwest
Betsy Berry, Indiana University Purdue University Fort Wayne
Brooke Max, Purdue University

Four mathematics teacher educators who teach mathematics content courses will describe their own personal journeys and the unique perspective of the courses in their programs in relation to the three indicators of AMTE Standard P.2 Opportunities to Learn Mathematics.
FAMILY MATH NIGHT PROJECTS FOR FUTURE ELEMENTARY TEACHERS IN CONTENT COURSES: WHAT, HOW, AND WHY
Alison S. Marzocchi, California State University, Fullerton
Eva Thanheiser, Portland State University
Krista Strand, California State University, Chico
Casey Hawthorne, Furman University

Family Math Nights (FMNs) in mathematics content courses can motivate and deepen future elementary teachers’ knowledge for teaching mathematics. Session attendees will experience sample FMN activities, learn four perspectives on facilitating FMNs, and discuss FMN themes in breakout sessions.

BUILDING CONCEPT IMAGES OF CORE ALGEBRAIC IDEAS: IMPLICATIONS FOR TEACHER PREPARATION
Thomas Dick, Oregon State University
Gail Burrill, Michigan State University
Rose Mary Zbiek, Pennsylvania State University

An interactive discussion will focus on a technology-leveraged approach for developing understanding of basic algebraic concepts. The emphasis is on using a coherent approach to building robust concept images of expressions and equations by exploiting dynamic visualization across multiple representations.
Session 97

POSTER SESSION - MONARCH ROOM (24TH FLOOR)

A1. BUILDING RURAL K-8 MATH TEACHERS' CONFIDENCE, KNOWLEDGE, AND SKILLS
Liza Cope, Delta State University

This poster will contain an overview of our professional development program, a description of our participants, our research design, the evaluation methods we used, the results of our study, and conclusions that we have drawn.

A2. CHANGING TIMES IN MATHEMATICS TEACHING RESOURCES AND STRATEGIES: A NATIONAL SURVEY OF STUDENT TEACHERS
Katrina Stullken Rothrock, University of Kansas
Susan Gay, University of Kansas

How is mathematics being taught in today's middle and high school classrooms? Insight about print and digital textbooks, access to and use of other resources, and preferred use of traditional and newer instructional strategies will be shared.

A3. COLLEGE ALGEBRA STUDENTS' UNDERSTANDING OF RATIONAL FUNCTIONS THROUGH THE USE OF MYMATHLAB LEARNING AIDS
Avijit Kar, University of Georgia

The poster describes college students' understanding of rational function, and changes in their understandings when using MyMathLab. Four categories of students' impressions (task difficulty, problem types, tools available, and character of the function) were identified as influencing understanding.

A4. DEEPENING THE IMPACT OF EARLY FIELD EXPERIENCES
Karen Anderson, Stonehill College
Kate Ariemma Marin, Stonehill College

This poster demonstrates that early instructionally focused, supervised field experiences not only provide PSTs with exposure to research-based instructional practices, they also have the potential to foster many of the intellectual and practical skills key to a liberal arts education.

A5. DEVELOPING PRESERVICE TEACHERS' BELIEFS AND KNOWLEDGE ABOUT PROBLEM-BASED LEARNING THROUGH TASK COMPARISONS
Rebecca Layton, University of Tennessee Knoxville
Jo Ann Cady, University of Tennessee, Knoxville

This study examined how preservice teachers' beliefs and knowledge about problem-based learning were influenced by task comparisons. The study took place in an introductory mathematics methods course that aimed to emphasize a student-centered, problem-based approach to teaching mathematics.
A6. ELEMENTARY & MIDDLE SCHOOL PRESERVICE TEACHERS’ UNDERSTANDING OF VARIABILITY AND THE USE OF DYNAMICAL STATISTICAL SOFTWARE
Yaomingxin Lu, Western Michigan University

The purpose of this presentation is to share findings about how the usage of TinkerPlots affects preservice teachers’ understanding of variability. This proposal encourages thinking further about the usage of technology in developing students’ understanding in major statistical concepts.

A7. EXPLORING MATHEMATICAL MODELING IN RELATION TO SECONDARY PRESERVICE TEACHERS’ CONTENT KNOWLEDGE
Aline Abassian, University of Central Florida
Farshid Safi, University of Central Florida

This session discusses how secondary preservice teachers make sense of a mathematical modeling task and reflect on the process. The participants’ content knowledge while solving the task will be examined. The results of the study, implications and limitations will be discussed.

A8. FEATURES THAT SUPPORT ENACTING CHANGES IN GEOMETRIC DISCOURSE
Peter Wiles, Eastern Illinois University
Rick Anderson, Eastern Illinois University

Using Sfard’s work, this presentation further informs features of discourse regarding the design of a series of short tasks focused on shapes and their properties and to characterize how teachers can transform discourse to create learning opportunities for fourth grade students.

A9. FIVE FREE COLLEGE AND CAREER READY MATH RESOURCES YOUR TEACHER CANDIDATES SHOULD KNOW AND LOVE
Barbara Beske, Student Achievement Partners

This poster showcases highly respected free resources used across the US in K-12 districts and how they can be an integral support for preservice teachers. The resources help educators understand and implement the focus and coherence built within the CCSS.

A10. HISTORY OF MATHEMATICS MEETS ETHNOMATHEMATICS
Laura Beene, Texas A&M University - Commerce

This poster describes the results of a mixed methods case study that combined culturally responsive pedagogy with a history of mathematics content course for preservice middle school mathematics teachers. There was a significant improvement in cultural awareness.

A11. IMPLEMENTING A SITE-BASED COURSE: INTEGRATING REHEARSALS AND ENACTMENTS WITH STUDENT THINKING AND FUNDS OF KNOWLEDGE
Rajeev Virmani, Sonoma State University

This poster will present the development of, and research conducted on, a site-based math methods course held in a 2nd grade urban classroom that used instructional activities to support PSTs learning about student thinking and community funds of knowledge.

A12. INTEGRATING CHEMISTRY AND MATHEMATICS TO FOSTER CONCEPTUAL UNDERSTANDING OF LOGARITHMS
David Glassmeyer, Kennesaw State University
Andrew Smith, Kennesaw State University

This study describes how preservice and inservice teachers thought about logarithms in the science context of pH and how a specific lesson impacted their conceptual understanding of logarithms.

B13. INVESTIGATING THE USE OF HYPOTHETICAL LEARNING TRAJECTORIES WITH A GRADUATE TEACHING ASSISTANT
Ashley Duncan, Arizona State University

This study reports results of how a teacher’s mathematical meanings and instructional planning decisions transformed while participating in, and then generating a hypothetical learning trajectory on angle measure.

B14. ISSUES THAT EMERGED IN THE PROCESS OF DESIGNING, IMPLEMENTING AND REFLECTING ON LESSONS
Marggie Gonzalez, University of Puerto Rico at Mayaguez

The poster examined secondary mathematics teachers as they engaged in a Lesson Study approach to professional development where they planned and taught lessons that integrate technology. Results about issues regarding knowledge of technology, and knowledge of mathematics will be shared.

B15. MATHEMATICAL KNOWLEDGE FOR TEACHING AND MATHEMATICAL QUALITY OF INSTRUCTION OF NOVICE ELEMENTARY SCHOOL TEACHERS
Jiwon Lee, University of California, Irvine
Rossella Santagata, University of California, Irvine

This study explores the relationship between first year elementary school teachers’ mathematical knowledge for teaching (MKT) and their mathematical quality of instruction (MQI) captured in videotaped lessons. Teachers with higher MKT performed at higher levels in the MQI than their counterparts.

B16. MATHEMATICS INTERVENTION FOR STUDENTS WITH AUTISM: A SINGLE CASE STUDY
Ja’Bria M. Miles, Texas A & M University Commerce

Surprisingly, students with autism struggle with mathematics when the material becomes more abstract. The poster will show a single case study about an intervention to help two students on the autism spectrum with algebra.
B17. MATHEMATICS PROJECTS FOR ELEMENTARY PRESERVICE TEACHERS: APPLICATIONS TO THE K-8 CLASSROOM
Winifred Mallam, Texas Woman’s University
As mathematics educators, projects in our mathematics courses are typically assigned that focus on preservice mathematics teacher preparation. The poster highlights projects assigned and how they relate to elementary and middle school classrooms. Interactions with school districts will be shared.

B18. MATHEMATICS TEACHER PREPARATION FOR CANDIDATES WITH UNDERGRADUATE STEM DEGREES
Allyson Hallman Thrasher, Ohio University
Derek Joseph Sturgill, Ohio University
An image of a teacher preparation program for individuals with STEM content degrees will be shared. Furthermore, the effectiveness of two program courses, and what was learned from them about a population of teacher candidates with undergraduate STEM degrees will be discussed.

B19. MICRO-LESSON STUDY, SELF AND PEER EDITING AND TEACHING THROUGH PROBLEM SOLVING
Kadisha Mills, Florida International University
The present study used Micro-Lesson study, Self and Peer editing and Teaching Through Problem Solving as a teaching strategy to enrich teachers’ conceptual understanding of fractions.

B20. PRESERVICE MATHEMATICS TEACHERS’ ATTITUDES ABOUT STATISTICS: PILOT STUDY OF A NEW INSTRUMENT
Douglas Whitaker, University of Wisconsin-Stout
This poster reports on a pilot study of a new instrument for assessing preservice and inservice teachers’ attitudes toward statistics, the SOMAS. A description of the development process and preliminary results from the pilot study are to be presented.

B21. PRESERVICE TEACHERS’ CONTENT KNOWLEDGE AFTER COMPLETING MATHEMATICS FOR TEACHERS COURSES
Judy Werner, Slippery Rock University
Mike Long, Howard Community College
The poster will identify issues in mathematics content preparation of preservice teachers who have completed mathematics for teachers course(s). Performance of how the teacher candidates scored on tests aligned with state standards that reflect the CCSSM will be shared.

B22. REFLECTING ON THE ACT OF DEFINING
Dana C. Cox, Miami University
Jane Keiser, Miami University
Suzanne Rushton Harper, Miami University
This presentation will present a qualitative study that examined preservice teachers’ dispositions toward the act of defining mathematical terms as well as their beliefs about the role definitions play in the learning of mathematics for adults as well as children.

B23. RESPONSIVE MIDDLE LEVEL MATHEMATICS TEACHING: CONVERGING DEVELOPMENTALISM AND CULTURAL RESPONSIVENESS IN MIDDLE LEVEL MATHEMATICS
Eugenia Vomvoridi-Ivanovic, University of South Florida
In this poster I will outline a framework for Responsive Middle Level Mathematics Teaching (RMLMT), defined as mathematics teaching that is simultaneously culturally and developmentally responsive to the characteristics, needs, and interests of young adolescent learners.

C24. SELECTING EXAMPLES: PRESERVICE AND INSERVICE TEACHER KNOWLEDGE AND PRACTICE
Rachel B. Snider, The College of New Jersey
This poster session considers the complex relationship between knowledge and practice by drawing on two studies of how secondary mathematics preservice and inservice teachers enact knowledge while selecting examples. Implications for teacher education and research on teaching will also be discussed.

C25. SHIFTING THE EXPERIENCE: DE/REPROGRAMMING PRESERVICE TEACHERS’ MATHEMATICS KNOWLEDGE NEEDED FOR TEACHING
Tashana Howse, Georgia Gwinnett College
Lakesia L. Dupree, University of South Florida
This poster will present how preservice teachers engaged in an investigation of their learning experiences about whole numbers and operations during their university coursework. We will share the connections to the development of PSTs’ mathematical pedagogy and future instructional practice.

C26. SUPPORTING PRESERVICE TEACHERS TO LEARN PROBABILITY AND STATISTICS TOPICS THROUGH THE CONTEXT OF SCHOOL CHOICE
Heidi Eisenreich, Georgia Southern University
Ha Nguyen, Georgia Southern University
This poster explores how using the context of school choice supported learning probability and statistics topics in a content course for K-8 preservice teachers. Connecting mathematics to a current event helped make learning more relevant. Preliminary findings will be shared.
C27. SUPPORTING TEACHER REFLECTION ON UNCONSCIOUS BIAS THROUGH CLASSROOM OBSERVATIONS
Daniel Lee Reinholz, San Diego State University
Beth Herbel-Eisenmann, Michigan State University

The EQUIP observation tool generates quantitative descriptions of discourse patterns in a classroom, according to social markers (e.g., race, gender). With EQUIP, we engage in collaborative action research with teachers to use these data to reflect on their practice.

C28. TEACHERS’ JOURNEY IN IMPLEMENTING THE FIVE PRACTICES TO FACILITATE MEANINGFUL DISCUSSIONS ABOUT PROPORTION
Olof B. Steinthorsdottir, University of Northern Iowa
Elizabeth Hughes, University of Northern Iowa

This presentation will demonstrate evidence of teachers’ professional growth from engaging in a two year PD program focused on proportion and facilitating mathematical discussions. Qualitative and quantitative data from RTOP, pre-post content knowledge assessment, teacher surveys and reflections will be shared.

C29. TEACHERS’ VALIDITY ARGUMENTS FOR MATHEMATICAL MODELING: COMPETENCY MEASURES AND CONNECTIONS
Celil Ekici, University of the Virgin Islands
Cigdem Alagoz-Ekici, University of the Virgin Islands

This study presents scoring, interpretation, and uses of the scores from mathematical modeling assessment as a formative performance tool accounting for disciplinary and interdisciplinary connections. Content experts evaluated and created the learning outcomes and attributes targeted by the project lessons.

C30. THE CHALLENGE OF RECRUITING MIDDLE LEVEL MATHEMATICS TEACHERS IN RURAL COMMUNITIES
George J. Roy, University of South Carolina
Matthew J. Irvin, University of South Carolina

Rural schools have a difficult time recruiting and retaining teachers across the US. Accordingly, we undertook a preliminary survey of preservice middle level teachers (n=33) to better understand factors that may be related to PSTs’ interest in teaching in a rural setting.

C31. THE NATURE OF STUDENT THINKING AVAILABLE IN A SECONDARY MATHEMATICS CLASSROOM
Mary A. Ochieng, Western Michigan University
Joshua M. Ruk, Western Michigan University
Laura R. Van Zoest, Western Michigan University
Keith R. Leatham, Brigham Young University
Blake E. Peterson, Brigham Young University

Our investigation of a lesson revealed ways in which student thinking is not a uniform construct. We will illustrate the manner in which different types of student mathematical thinking provide different resources for instruction and require different responses from teachers to be used effectively.

C32. USING CHILDREN’S LITERATURE TO FOSTER MATHEMATICAL IDEAS: RESEARCH AND PRACTICE
Dittika Gupta, Midwestern State University

This poster presents a qualitative research study that examined the growth in attitudes and perceptions of preservice teachers towards integrating children’s literature in elementary mathematics methods. Results, integration model, and implications for mathematics education will be shared.

C33. WHAT KNOWLEDGE RESOURCES ARE TEACHERS USING TO SOLVE PROPORTIONAL REASONING TASKS?
Rachael Eriksen Brown, Pennsylvania State Abington
Chandra Hawley Orrill, University of Massachusetts Dartmouth

We will share a preliminary analysis of two task-based interviews by 32 participants. Using Epistemic Network Analysis, our participants fell into two broad groups: primarily relying on proportional reasoning knowledge and primarily on problem solving knowledge.

C34. WRITING WORD PROBLEMS TO MATCH MATHEMATICAL EXPRESSIONS: NOT SO EASY FOR ALL FUTURE TEACHERS
Sarah J. Hicks, Rockhurst University

Creating mathematical word problems with various types of numbers and operations was found to not always be easy for preservice teachers. These findings are illustrated with data collected during a mathematics for elementary school teachers course.
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<td>PLAZA I</td>
<td>98. A Framework for Investigating the Professional Noticing of Mathematics Coaches- Carlson, Williams, &amp; Heaton</td>
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<td>PLAZA II</td>
<td>99. Using Mini-Cases to Support Preservice Teachers’ Development of Mathematical Knowledge for Teaching- Nabors Olah, DeLucia, &amp; Lai</td>
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<td>CHEVY CHASE</td>
<td>100. Developing Knowledge of Teaching Mathematics to ELLs Through an Online Learning Community- I &amp; Martinez</td>
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<td>GALLERIA I</td>
<td>102. How Do You Prepare Beginning Teachers to Provide Equitable Mathematics Experiences for Each and Every Student?- Schrock</td>
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<td>GALLERIA II</td>
<td>103. Mathematics Specialists: What Do They Do? Do They Make a Difference? Analyzing Responsibilities and Impact- Fennell, Kobett, &amp; Wray</td>
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<td>104. Mathematical Modeling in the Non-STEM Classroom- Ham</td>
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<td>105. A Commitment to Equity: One District’s Systemic Approach to Change in High School Mathematics Education- Lawler &amp; Leaf</td>
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<td>POST OAK</td>
<td>106. Learn How to Incorporate Free PK-5 Math Curriculum Into Your Courses- Harris</td>
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<td>107. Inscriptions: Developing, Recording, and Communicating Mathematical Understandings- Edson, Phillips, &amp; Grant</td>
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<td>TANGLEWOOD</td>
<td>109. Promoting Teacher Reflection with Q-Sorts- Wilburune &amp; Franz</td>
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<td>110. Lessons Learned From Teaching Mathematics Methods in Close Partnership With an Elementary Class- Chinen &amp; McVicar</td>
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<td>3:30 PM - 4:30 PM</td>
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<td>111. Teacher Preparation Response to the Surge of Web-based Mathematics Curricula Resources- Driskell, Rhine, Wheeler, Ives, Harrington, Lee, &amp; Earnest</td>
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<td>112. Help Elementary Teachers Know Mathematics Well Enough to Make it Accessible to All Students- Howe &amp; Li</td>
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<td>113. Messages for Doctoral Programs in Mathematics Education Based on Feedback From Over 500 Doctoral Graduates- Shih &amp; Engledowl</td>
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<td>114. A Consideration of Mathematical Content Knowledge for Elementary Teaching: Connecting to Children’s Thinking- Siegfried &amp; Philipp</td>
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<td>115. The Impact of a Sustained Professional Development Model in Third-Fifth Grade Mathematics Classrooms- Melhuish, White, Fagan, &amp; Rosencrans</td>
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<td>116. Supporting Elementary Mathematics Teachers and Teacher Leaders through School-University Partnerships- Rigelman &amp; McGatha</td>
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<td>117. National Science Foundation Funding and Research Opportunities for Mathematics Teacher Educators- Richardson, Hjalmarson, &amp; Ronau</td>
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<td>118. Supporting Respectful and Effective Implementation of the AMTE Standards for Preparing Teachers of Mathematics- Hauk &amp; Jackson</td>
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<td>120. Facilitation Factors that Impact Discourse During Mathematics Professional Development for Elementary Teachers- Tauber, Maroto Vargas, &amp; Sztajn</td>
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<td>121. Using NCTM Membership to Support Preservice and Inservice Teacher Growth and Development- Barnes &amp; Andrews</td>
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<td>122. Designing Effective Professional Development in an Online Environment to Support Teachers’ Learning- Mojica, Lee, &amp; Lovett</td>
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<td>123. The Impact of Developing a Vision for Mathematics Teaching with Elementary Preservice Teachers- Middleton, Lee, Schwartz, &amp; Belford</td>
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Session 98  
**Mathematics Pedagogy and Instructional Practice**  
**Individual Session**  

**A FRAMEWORK FOR INVESTIGATING THE PROFESSIONAL NOTICING OF MATHEMATICS COACHES**  
Mary Alice Carlson, Montana State University  
Molly Williams, University of Nebraska-Lincoln  
Ruth Heaton, University of Nebraska  

A framework for mathematics coach noticing will be used by participants to examine and discuss transcript examples of three coaches’ noticings. Participants will discuss variation in types of noticing and implications for coaching professional development and future research.

Session 99  
**Mathematics Content, Processes, and Practices**  
**Discussion Session**  

**USING MINI-CASES TO SUPPORT PRESERVICE TEACHERS’ DEVELOPMENT OF MATHEMATICAL KNOWLEDGE FOR TEACHING**  
Leslie Nabors Olah, Educational Testing Service  
Maria DeLucia, Middlesex County College  
Yvonne Lai, University of Nebraska-Lincoln  

Implementing AMTE’s Standards requires materials targeting mathematics and pedagogy. We introduce Mathematical Knowledge for Teaching (MKT) mini-cases that support teacher educators in developing their students’ MKT. Participants will experience how the mini-cases emphasize mathematical structure, instructional decision-making, and student thinking.

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

**DEVELOPING KNOWLEDGE OF TEACHING MATHEMATICS TO ELLS THROUGH AN ONLINE LEARNING COMMUNITY**  
Ji Yeong I, Iowa State University  
Ricardo Martinez, Iowa State University  

Join the discussion as we share our online class Teaching Mathematics to English Language Learners and talk about the following topics: Who are ELLs?, Culturally Responsive Teaching, ELL-focused Strategies, Academic Language, Mathematical Discussion, and ELL-focused Lesson Planning.

Session 101  
**West Alabama**  
**Mathematics Content, Processes, and Practices**  
**Individual Session**  

**MATHEMATICAL MODELING, “MODELING THINKING,” AND THE MATHEMATICAL HORIZON OF ELEMENTARY SCHOOL TEACHERS**  
Cynthia Oropesa Anhalt, University of Arizona  
Ricardo Cortez, Tulane University  

In work with elementary prospective teachers (EPTs), this session presents a holistic view of the mathematical modeling process through focused competency-building tasks that foster “modeling thinking” as a way to position teachers to build horizon knowledge in mathematical modeling.

Session 102  
**Galleria I**  
**NCSM Presidential Exchange Session**  
**Individual Session**  

**HOW DO YOU PREPARE BEGINNING TEACHERS TO PROVIDE EQUITABLE MATHEMATICS EXPERIENCES FOR EACH AND EVERY STUDENT?**  
Connie S. Schrock, Emporia State University  

AMTE’s Standards call for teachers to understand the importance of providing opportunities for each and every student to learn mathematics. This session will be spent discussing ideas to target this call and for engaging other organizations around Action 7.

Session 103  
**Galleria II**  
**School and University Partnerships and Projects**  
**Individual Session**  

**MATHEMATICS SPECIALISTS: WHAT DO THEY DO? DO THEY MAKE A DIFFERENCE? ANALYZING RESPONSIBILITIES AND IMPACT**  
Skip Fennell, McDaniel College  
Beth McCord Kobett, Stevenson University  
Jon Wray, Howard County (MD) Public Schools  

This session presents a multi-year analysis of the responsibilities and perceived impact of mathematics specialists/coaches. Participants will be engaged in discussing the analysis and considering implications for programs for specialists/coaches as well as supporting and advocating for such positions.

Session 104  
**Galleria III**  
**AMATYC Presidential Exchange Session**  
**Individual Session**  

**MATHEMATICAL MODELING IN THE NON-STEM CLASSROOM**  
James Ham, American Mathematical Assoc. of Two-Year Colleges  

Several national reports recommend a greater attention to modeling in the mathematics classroom. Modeling examples and activities appropriate for high school courses and courses in the first two years of college, particularly in the non-STEM pathway will be shared.
Session 105  
Teacher Professional Development  
Individual Session  

A COMMITMENT TO EQUITY: ONE DISTRICT'S SYSTEMIC APPROACH TO CHANGE IN HIGH SCHOOL MATHEMATICS EDUCATION  
Brian R. Lawler, Kennesaw State University  
Abi Leaf, Escondido (CA) Union High School District  

We present our effort to rehumanize mathematics experiences for students and teachers in one high school district. Emphasis will be to describe a four(plus)-year project to shift mathematics instruction, an emergent three-year teacher curriculum, and tensions provoked by our aims.

Session 106  
AMTE Gold Sponsor  
Individual Session  

LEARN HOW TO INCORPORATE FREE PK-5 MATH CURRICULUM INTO YOUR COURSES  
Pamela Weber Harris, Texas State University  

The content of Bridges in Mathematics PK-5 from The Math Learning Center is now available for free to schools of education. Join Bridges author and university instructor Pam Harris to learn how this program can enhance your math methods courses.

Session 107  
Mathematics Content, Processes, and Practices  
Individual Session  

INSCRIPTIONS: DEVELOPING, RECORDING, AND COMMUNICATING MATHEMATICAL UNDERSTANDINGS  
Alden Jack Edson, Michigan State University  
Elizabeth Phillips, Michigan State University  
Yvonne Grant, Connected Mathematics Project  

This session focuses on how students use inscriptions to develop, record, and communicate their mathematical understandings. Participants will discuss the many opportunities and challenges teachers face with the interplay between student inscriptions and the development of mathematical understandings.

Session 108  
Mathematics Pedagogy and Instructional Practice  
Individual Session  

STORYLINES ABOUT MATHEMATICS LEARNING IN TASK-BASED MATHEMATICS INSTRUCTION  
Megan F. Martin, University of North Carolina-Greensboro  
Jared Webb, University of North Carolina, Greensboro  
Holt Wilson, University of North Carolina, Greensboro  

In this session, we share initial work identifying the storylines about learning mathematics in secondary mathematics classrooms as teachers engage students in mathematically rich tasks.

Session 109  
Teacher Professional Development  
Individual Session  

PROMOTING TEACHER REFLECTION WITH Q-SORTS  
Jane M. Wilburne, Pennsylvania State University, Harrisburg  
Dana Pomykal Franz, Mississippi State University  

This session will describe the Q-sort process and how it was used to promote reflection on effective teaching practices with inservice classroom teachers. Participants will engage in a sample Q-sort and discuss potential uses and benefits over Likert-scale surveys.

Session 110  
Mathematics Pedagogy and Instructional Practice  
Individual Session  

LESSONS LEARNED FROM TEACHING MATHEMATICS METHODS IN CLOSE PARTNERSHIP WITH AN ELEMENTARY CLASS  
Starlie Chinen, University of Washington  
Elzena McVicar, University of Washington  

What learning opportunities are created by a methods course taught in partnership with an elementary classroom? We will share our insights regarding the learning of teachers and teacher educators who center children's thinking, experiences and equity in their work.

FRIDAY, FEBRUARY 9, 2018  
3:00 PM - 3:30 PM  

FRIDAY AFTERNOON BREAK  
GALLERIA FOYER  
This is a great time to stretch, catch-up with colleagues, and visit the exhibitors.
## Session 111 Plaza I

**Teaching and Learning with Technology**  
**Discussion Session**  

**TEACHER PREPARATION RESPONSE TO THE SURGE OF WEB-BASED MATHEMATICS CURRICULA RESOURCES**  
Shannon Driskell, University of Dayton  
Steve Rhine, Pacific University  
Ann Wheeler, Texas Woman’s University  
Sarah Ives, California State University, Sacramento  
Rachel A. Harrington, Western Oregon University  
Mi Yeon Lee, Arizona State University  
Darrell Earnest, University of Massachusetts, Amherst

Web-based curricula resources (WBCR) have made rapid and extensive inroads into mathematics classrooms. We propose a discussion session to promote dialogue about the implications of practices with WBCR in elementary mathematics classrooms for the preparation of future teachers.

## Session 112 Plaza II

**Mathematics Content, Processes, and Practices**  
**Individual Session**  

**HELP ELEMENTARY TEACHERS KNOW MATHEMATICS WELL ENOUGH TO MAKE IT ACCESSIBLE TO ALL STUDENTS**  
Roger Evans Howe, Texas A&M University  
Yeping Li, Texas A&M University

Making mathematics accessible is not simply about exposing students to mathematics, nor “watering down” to make mathematics easy, but developing students’ mathematical confidence. This requires teachers with solid understanding of mathematics. We describe a project to better provide such understanding.

## Session 113 Chevy Chase

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

**MESSAGES FOR DOCTORAL PROGRAMS IN MATHEMATICS EDUCATION BASED ON FEEDBACK FROM OVER 500 DOCTORAL GRADUATES**  
Jeffrey Shih, University of Nevada, Las Vegas  
Christopher Engledow, New Mexico State University

This session will report results from over 500 doctoral graduates in mathematics education. Information about program length and components will be used to generate discussion about ways that doctoral preparation can be strengthened.

## Session 114 West Alabama

**Mathematics Content, Processes, and Practices**  
**Individual Session**  

**A CONSIDERATION OF MATHEMATICAL CONTENT KNOWLEDGE FOR ELEMENTARY TEACHING: CONNECTING TO CHILDREN’S THINKING**  
John (Zig) Siegfried, James Madison University  
Randolph Philipp, San Diego State University

We will share our study of the effects of learning about children’s mathematical thinking on the content knowledge of preservice and inservice elementary teachers and discuss how this thinking can help teachers view mathematical content through a richly pedagogical lens.

## Session 115 Galleria I

**Teacher Professional Development**  
**Individual Session**  

**THE IMPACT OF A SUSTAINED PROFESSIONAL DEVELOPMENT MODEL IN THIRD-FIFTH GRADE MATHEMATICS CLASSROOMS**  
Kathleen Melhuish, Texas State University  
Alexander White, Texas State University  
Joshua Fagan, Texas State University  
Brenda Rosencrans, Portland State University

We conducted a large-scale study evaluating the efficacy of the Mathematics Studio PD (a modified lesson study) model at the elementary level. We found that through sustained PD (greater than 2 years) teachers’ practice grew and students’ test scores improved.

## Session 116 Galleria II

**School and University Partnerships and Projects**  
**Individual Session**  

**SUPPORTING ELEMENTARY MATHEMATICS TEACHERS AND TEACHER LEADERS THROUGH SCHOOL-UNIVERSITY PARTNERSHIPS**  
Nicole Rigelman, Portland State University  
Maggie McGatha, University of Louisville

We will describe goals and outcomes of two school-university partnerships focused on supporting elementary mathematics teacher leaders. We will share our professional development models and significant research findings. Against this background participants will discuss successes and challenges of school-university partnerships.
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<tr>
<th>Session 117</th>
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<tr>
<td>Mathematics Education Policy and Program Issues</td>
<td>Individual Session</td>
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<tr>
<td><strong>NATIONAL SCIENCE FOUNDATION FUNDING AND RESEARCH OPPORTUNITIES FOR MATHEMATICS TEACHER EDUCATORS</strong></td>
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<tr>
<td>Sandra Richardson, National Science Foundation</td>
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<td>Margret Hjalmarson, George Mason University</td>
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<td>Robert Nicholas Ronau, National Science Foundation</td>
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<td>This session will provide information about NSF funding opportunities in mathematics education research and development. The following NSF programs will be included in the discussion: Improving Undergraduate STEM Education, EHR Core Research, Discovery Research K-12, and Noyce Program (Research Track).</td>
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<td>Development of Mathematics Teacher Educators</td>
<td>Discussion Session</td>
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<tr>
<td><strong>SUPPORTING RESPECTFUL AND EFFECTIVE IMPLEMENTATION OF THE AMTE STANDARDS FOR PREPARING TEACHERS OF MATHEMATICS</strong></td>
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<tr>
<td>Shandy Hauk, WestEd and the University of Northern Colorado</td>
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<td>Billy Jackson, University of Tennessee at Chattanooga</td>
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<td>Participants discuss strategies for mathematics teacher educators (MTEs) to engage colleagues in awareness-building and productive conversations about the Standards for Preparing Teachers of Mathematics. This session provides a professional growth opportunity for MTEs aiming to reshape teacher preparation at their home institutions.</td>
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<tr>
<td>Mathematics Education Policy and Program Issues</td>
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<td><strong>DEVELOPING AND VALIDATING A LESSON PLAN SCORING INSTRUMENT FOR SECONDARY MATHEMATICS EDUCATION PROGRAM: A COLLABORATIVE EFFORT</strong></td>
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<td>Xiangquan Yao, The Ohio State University</td>
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<td>Erica Brownstein, The Ohio State University</td>
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<td>Assessing preservice teachers' ability to write lesson plans is a key assessment teacher preparation programs use for program review submitted to SPAs. This session reports a rubric developed to assess unit plans mathematics preservice teachers produced in their methods course.</td>
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<th>Session 120</th>
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<td>Development of Mathematics Teacher Educators</td>
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<tr>
<td><strong>FACILITATION FACTORS THAT IMPACT DISCOURSE DURING MATHEMATICS PROFESSIONAL DEVELOPMENT FOR ELEMENTARY TEACHERS</strong></td>
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<tr>
<td>Mona Tauber, North Carolina State University</td>
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<td>Ana Patricia Maroto Vargas, N. Carolina State U. and U. of Costa Rica</td>
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<td>Paola Sztajn, North Carolina State University</td>
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<td>We will examine facilitation that supported productive discourse during a year-long professional development. Through a presentation of our analyses, including video clips, and multiple representations of our findings, we will discuss factors that co-occurred and portray different facilitation types.</td>
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<td>AMTE Silver Sponsor</td>
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<tr>
<td><strong>USING NCTM MEMBERSHIP TO SUPPORT PRESERVICE AND INSERVICE TEACHER GROWTH AND DEVELOPMENT</strong></td>
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<tr>
<td>David Barnes, National Council of Teachers of Mathematics (NCTM)</td>
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<td>Delise Andrews, Lincoln Public Schools</td>
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<td>Utilize NCTM resources to work smarter and engage and support your teachers as they develop. Learn, analyze, and discuss strategies, activities and the impact at all levels. Also learn about membership changes which make NCTM accessible to beginning teachers.</td>
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<th>Session 122</th>
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<td>Teacher Professional Development</td>
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<td><strong>DESIGNING EFFECTIVE PROFESSIONAL DEVELOPMENT IN AN ONLINE ENVIRONMENT TO SUPPORT TEACHERS' LEARNING</strong></td>
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<tr>
<td>Gemma Mojica, North Carolina State University</td>
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<td>Hollylyyne Lee, North Carolina State University</td>
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<td>Jennifer N. Lovett, Middle Tennessee State University</td>
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<td>A model for Online Professional Development (OPD) will be shared. Participants will engage with resources and materials from an OPD course and consider how resources and experiences have the potential to influence changes in teachers' perspectives and practices.</td>
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<tr>
<td>Mathematics Pedagogy and Instructional Practice</td>
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<tr>
<td><strong>THE IMPACT OF DEVELOPING A VISION FOR MATHEMATICS TEACHING WITH ELEMENTARY PRESERVICE TEACHERS</strong></td>
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<td>Catharina Middleton, East Carolina University</td>
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<td>Carrie Lee, East Carolina University</td>
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<td>Catherine Schwartz, East Carolina University</td>
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<td>Leigh B. Belford, East Carolina University</td>
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<td>This session includes sharing data about how elementary preservice teachers' visions of high quality mathematics instruction changed across two sequenced methods courses, discussing the implications of making vision work explicit in methods courses, and experiencing vision-focused activities used in coursework.</td>
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JUDITH JACOBS LECTURE
GALLERIA I

A MATHEMATICS TEACHER EDUCATOR’S JOURNEY: RESPONDING TO AN EVOLVING FIELD

Margaret (Peg) Smith, University of Pittsburgh

In this talk I will identify key events in mathematics education over the past three decades, discuss how these events helped shape and change the field, and describe how one mathematics educator responded to these changes.

Reception for Graduate Students
GALLERIA III

Graduate students and early career faculty in their first three years are invited to join the AMTE Board of Directors and leadership in Galleria Ballroom III for a reception. Refreshments will be served.
Tables will be designated for AMTE Affiliate groups to meet during Saturday morning’s breakfast. For a listing of the AMTE Affiliates and table locations, please see pages 9 and 10 of the program.
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<tr>
<th>Time</th>
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<tr>
<td>8:00 AM – 8:45 AM</td>
<td>127. Mathematical Modeling in Grades 3-5: Connections to Community and School Contexts - Turner, Roth McDuffie, &amp; Bennett</td>
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<td>9:00 AM - 9:45 AM</td>
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<td>140. A Critical Mathematical Perspective on Mathematical Modeling in Middle School - Poling &amp; Naresh</td>
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<td>136. Video for Equity: Designing Video-Based Discussions of Student Authority - Jarry-Shore, Fong, Dyer, Gomez Zaccarelli, &amp; Borko</td>
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<td>128. Developing Prospective Teachers' “orientations” in Content Courses: Mathematics Teacher Educators' Reflections on Practice - Appova</td>
<td>CHEVY CHASE</td>
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<td>141. Teaching Mathematics as Agape: Balancing Strategy and Stance - Amidon, Nance, &amp; Marshall</td>
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<td>129. Impact of Targeted Video Projects on Preservice Teachers' Ability to Effectively Communicate Mathematical Issues of Subtraction - Faulkner</td>
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<td>142. Non-Traditional Service Learning as Field Experience: The NUMB3RS Project - Anderson</td>
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<td>137. Transforming Secondary Mathematics Teacher Preparation: A Networked Approach to Enacting the AMTE Standards - Martin, Ellis, Smith, &amp; Strutchens</td>
<td>GALLERIA I</td>
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<td>138. Activities that Support the Statistical Education of Teachers - Lee, Franklin, Casey, Hudson, Bargagliotti, Mojica, Azmy, Confrey, &amp; Shah</td>
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<td>143. Examining Scaffolding Practices in Mathematical Modeling Contexts through an Ethnomodeling Lens - Lewis &amp; Manouchehri</td>
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<td>144. Blending Book Study and Action Research to Explore Young Children's Mathematical Thinking - Hughes, Belliston, &amp; Wager</td>
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<td>145. Brief Report Session: Preservice Elementary Grades Teachers - Montgomery &amp; Akerson; Whitehead &amp; Walkowiak</td>
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<td>133. Brief Report Session: Facilitating Discourse - Chen; Woods</td>
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<td>146. Scalable Professional Development in Early Mathematics: The Learning and Teaching with Learning Trajectories Tool - Clements</td>
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<td>134. How PSTs' Noticing Developed Across a Sequence of Mediated Field Experiences in a Third Grade Classroom - Sharpe &amp; Njuguna</td>
<td>TANGLEWOOD</td>
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<td>147. Secondary Teachers' Professional Noticing of Students' Proportional Reasoning - LaRochelle</td>
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<td>135. Mathematics Teachers Using Data to Inform Classroom Practice: Agency and Expectations - Cavanna</td>
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<td>148. Prospective PreK-8 Teachers' Initial and Auxiliary Problem Solving Strategies - Schultz &amp; Lovin</td>
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## OVERVIEW OF SATURDAY MORNING SESSIONS, FEBRUARY 10, 2018

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</table>
Session 127 Plaza I
Mathematics Pedagogy and Instructional Practice
Individual Session

MATHEMATICAL MODELING IN GRADES 3-5: CONNECTIONS TO COMMUNITY AND SCHOOL CONTEXTS
Erin Turner, University of Arizona
Amy Roth McDuffie, Washington State University
Amy Been Bennett, University of Arizona

This session reports on a transformative professional development model focused on teaching and learning mathematical modeling with cultural and community contexts in grades 3-5. Presenters describe modeling tasks and teacher practices that support student learning in diverse classroom contexts.

Session 128 Chevy Chase
Development of Mathematics Teacher Educators
Individual Session

DEVELOPING PROSPECTIVE TEACHERS’ “ORIENTATIONS” IN CONTENT COURSES: MATHEMATICS TEACHER EDUCATORS’ REFLECTIONS ON PRACTICE
Aina Appova, The Ohio State University

We share reflections from ten expert MTEs on specific “orientations” toward mathematics and teaching mathematics that they wanted PTs to develop during their content courses, including explicit examples of how MTEs structured their courses to promote and cultivate these orientations.

Session 129 West Alabama
Mathematics Content, Processes, and Practices
Discussion Session

IMPACT OF TARGETED VIDEO PROJECTS ON PRESERVICE TEACHERS' ABILITY TO EFFECTIVELY COMMUNICATE MATHEMATICAL ISSUES OF SUBTRACTION
Valerie Faulkner, North Carolina State University

Our study examined the extent to which before and after video attempts to explain a subtraction-within-20 problem influenced preservice teachers to adopt and maintain accurate language that reflected their understanding of the mathematical content.

Session 130 Bellaire
Equity, Social Justice, and Mathematics Teacher Education
Discussion Session

EQUITY OF LEARNING OPPORTUNITIES AND INSTRUCTIONAL STRATEGIES FOR STUDENTS WITH LEARNING DISABILITIES IN MATHEMATICS
Rubia D. Anderson, University of Georgia
Rui Kang, Georgia College & State University

Through three open-ended, classroom-based cases, this presentation will engage mathematics teacher educators and special educators in a collaborative activity and discussion about instructional strategies that potentially maximize the learning opportunities of students with learning disabilities (LD) in mathematics.

Session 131 Post Oak
Equity, Social Justice, and Mathematics Teacher Education
Individual Session

A GAY ELEMENTARY TEACHER ENGAGING STUDENTS IN MATHEMATICS: WHAT CAN HE TEACH US?
Kyle Stephen Whipple, University of Minnesota

I will present a case study focused on gay identity and intersectionality with mathematics teacher identity. Through this research, I learned that this teacher makes explicit decisions regarding curriculum choices and implementation strategies that he attributes to his gay identity.

Session 132 Sage
Mathematics Education Policy and Program Issues
Discussion Session

BRIEF REPORT SESSION: ASSESSING PRACTICE

ADDRESSING THE NEED FOR MEASUREMENT AND VALIDITY IN ELEMENTARY MATHEMATICS COACHES AND SPECIALIST RESEARCH
Stefanie Livers, Missouri State University
Kristin Harbour, University of Alabama
Margret Hjalmarson, George Mason University

Research is needed about mathematics coaches and specialists and their work with teachers and students. We advocate there are questions of policy and practice that need instrument design and development to advance research regarding the diverse knowledge, practices, and roles.

SECONDARY MATHEMATICS PROGRAMMATIC COURSEWORK EFFECTS ON PRAXIS II AND EDTPA
Jeremy Zelkowski, University of Alabama
Tye Campbell, University of Alabama

This session will provide initial findings on the effects of programmatic coursework, assessments, and program design aligned to the CBMS MET2 and NCTM SPA 2012 CAEP standards on Praxis II 5161 and edTPA as they relate to AMTE SPTM.
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<td><strong>BRIEF REPORT SESSION: FACILITATING DISCOURSE</strong></td>
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<td><strong>INTERPRETING AND REPRESENTING STUDENTS’ THINKING IN THE MOMENT: PRESERVICE TEACHERS’ INITIAL MULTIPLICATION LESSONS</strong></td>
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<td>Lizhen Chen, Purdue University</td>
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<td>This study investigates how PSTs’ anticipation of strategies related to their discursive interactions with students and what potential the use of different talk moves had for supporting students’ understanding of the mathematical strategies and concepts.</td>
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<td><strong>Preservice Teacher Field Experiences</strong></td>
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<td><strong>INDIVIDUAL SESSION</strong></td>
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<td><strong>HOW PSTS’ NOTICING DEVELOPED ACROSS A SEQUENCE OF MEDIATED FIELD EXPERIENCES IN A THIRD GRADE CLASSROOM</strong></td>
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<td>Charlotte Dunlap Sharpe, Syracuse University</td>
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<td>Grace Njuguna, Syracuse University</td>
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<td>Mediated field experiences (MFEs) support PSTs to bridge the divide between methods course discussions and field based enactments of practice. We report findings from an analysis of PSTs’ written noticings about others’ videotaped enactments before and after four week MFE sequence.</td>
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<td><strong>INDIVIDUAL SESSION</strong></td>
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<tr>
<td><strong>MATHEMATICS TEACHERS USING DATA TO INFORM CLASSROOM PRACTICE: AGENCY AND EXPECTATIONS</strong></td>
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<td>Jillian Cavanna, University of Connecticut</td>
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<td>What does it mean when teachers are asked to “use data”? Based on a study with middle school mathematics teachers, I will discuss definitions of data and data use, teacher evaluation and agency, along with implications for teacher educators.</td>
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Session 136  
**Equity, Social Justice, and Mathematics Teacher Education**  
Extended Session  
**VIDEO FOR EQUITY: DESIGNING VIDEO-BASED DISCUSSIONS OF STUDENT AUTHORITY**  
Michael Jarry-Shore, Stanford University  
Alissa Barnett Fong, Stanford University  
Elizabeth Dyer, Stanford University  
Florence Gomez Zaccarelli, Stanford University  
Hilda Borko, Stanford University  
Discussions of classroom video are a powerful means for supporting teacher learning. Participants are encouraged to bring a laptop if possible, will choose their own video clip & prepare to lead a discussion of this clip focusing on students’ mathematical authority.

Session 137  
**Mathematics Education Policy and Program Issues**  
Extended Session  
**TRANSFORMING SECONDARY MATHEMATICS TEACHER PREPARATION: A NETWORKED APPROACH TO ENACTING THE AMTE STANDARDS**  
W. Gary Martin, Auburn University  
Mark W. Ellis, California State University, Fullerton  
Wendy Smith, University of Nebraska  
Marilyn Elaine Strutchens, Auburn University  
The Standards for Preparing Teachers of Mathematics suggest a cyclical process of improvement is needed to enact its recommendations. A network of universities is working collaboratively to establish procedures to undertake the necessary transformation of secondary mathematics teacher preparation programs.

Session 138  
**Mathematics Pedagogy and Instructional Practice**  
Extended Session  
**ACTIVITIES THAT SUPPORT THE STATISTICAL EDUCATION OF TEACHERS**  
Hollylynne Lee, North Carolina State University  
Christine Annette Franklin, American Statistical Association  
Stephanie Casey, Eastern Michigan University  
Rick A. Hudson, University of Southern Indiana  
Anna E. Bargagliotti, Loyola Marymount University  
Gemma Mojica, North Carolina State University  
Christina Azmy, North Carolina State University  
Jere Confrey, North Carolina State University  
Meetal Shah, North Carolina State University  
Participants will engage with research-based materials designed for preparation to teach statistics in grades 6-12. Participants should bring a laptop to engage with activities on topics including technology, videocases, statistical investigations, task analysis, mathematical and statistical practices, and learning trajectories.

Session 139  
**Mathematics Content, Processes, and Practices**  
Extended Session  
**PRESERVICE TEACHERS’ REASONING ABOUT MULTIPLICATION, DIVISION, AND PROPORTIONS IN TERMS OF QUANTITIES: WHAT IS CHALLENGING?**  
Torrey Kulow, University of Georgia  
Sybilla Beckmann, University of Georgia  
Sheri Johnson, University of Georgia  
Dean L Stevenson, University of Georgia  
In this session we discuss a coherent approach to multiplicative structures, ratios, and proportional relationships that we have been developing in our mathematics content courses for future middle grades and secondary teachers.
| Session 140 | Plaza I | Equity, Social Justice, and Mathematics Teacher Education  
Individual Session |
|-------------|---------|----------------------------------------------------------|
| **A CRITICAL MATHEMATICAL PERSPECTIVE ON MATHEMATICAL MODELING IN MIDDLE SCHOOL**  
Lisa Poling, Appalachian State University  
Nirmala Naresh, University of North Texas |
| We describe how critical mathematics education perspective, applied to mathematical modeling, resulted in preservice teachers using mathematics to model real-world scenarios with middle-school students to deepen mathematical knowledge. These activities alter beliefs about who can conceptualize and do mathematics. |

| Session 141 | Chevy Chase | Equity, Social Justice, and Mathematics Teacher Education  
Individual Session |
|-------------|-------------|----------------------------------------------------------|
| **TEACHING MATHEMATICS AS AGAPE: BALANCING STRATEGY AND STANCE**  
Joel Amidon, University of Mississippi  
Rebecca Smith Nance, University of Mississippi  
Anne Marie Marshall, Lehman College |
| The purpose of this session is to share a refined framework, teaching mathematics methods as agape, that can be used to “design and implement professional education experiences that promote and value the equitable mathematics learning and advancement of all children.” |

| Session 142 | West Alabama | Preservice Teacher Field Experiences  
Individual Session |
|-------------|--------------|----------------------------------------------------------|
| **NON-TRADITIONAL SERVICE LEARNING AS FIELD EXPERIENCE: THE NUMB3RS PROJECT**  
Karen Anderson, Stonehill College |
| Come learn about how the NUMB3RS Project, an early-instruction-focused field experience merging elements of service learning and pre-practicum, impacted PSTs’ views towards mathematics and empowered them to see themselves as change agents in K-12 classrooms. |

| Session 143 | Bellaire | Mathematics Pedagogy and Instructional Practice  
Individual Session |
|-------------|---------|----------------------------------------------------------|
| **EXAMINING SCAFFOLDING PRACTICES IN MATHEMATICAL MODELING CONTEXTS THROUGH AN ETHNOMODELING LENS**  
Stephen T. Lewis, The Ohio State University  
Azita Manouchehri, The Ohio State University |
| In this session we share the results of our classroom-based study examining scaffolding practices in mathematical modeling contexts. Our analysis reveals the social uptake of these practices and in particular highlights how they prompted validation and refinement of models. |

| Session 144 | Post Oak | Teacher Professional Development  
Individual Session |
|-------------|----------|----------------------------------------------------------|
| **BLENDING BOOK STUDY AND ACTION RESEARCH TO EXPLORE YOUNG CHILDREN’S MATHEMATICAL THINKING**  
Gwyneth R. Hughes, University of Wisconsin, Madison  
Alisa Belliston, University of Wisconsin, Madison  
Anita A. Wager, Vanderbilt University |
| This session examines the content, structure, and outcomes of a mathematics professional development course for early childhood educators. The blended in-person/online course connects children's early number development to problem solving and equity through teacher action research. |

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| **BRIEF REPORT SESSION: PRESERVICE ELEMENTARY GRADES TEACHERS**  
IMPLEMENTING A COTeachING MODEL IN AN EARLY MATHEMATICS FIELD EXPERIENCE**  
Mark S. Montgomery, Stephen F. Austin State University  
Adam Akerson, Stephen F. Austin State University |
| The purpose of this pilot study was to understand the degree coteaching models and experiences are beneficial for teacher candidates. By being placed in peer to peer coteaching teams, candidates were given twice as many opportunities to teach and learn together. |

| Session 146 | San Felipe | Teaching and Learning with Technology  
Individual Session |
|-------------|----------|----------------------------------------------------------|
| **SCALABLE PROFESSIONAL DEVELOPMENT IN EARLY MATHEMATICS: THE LEARNING AND TEACHING WITH LEARNING TRAJECTORIES TOOL**  
Douglas H. Clements, University of Denver |
| Based on 20 years of research, the Learning and Teaching with Learning Trajectories (LTLT) tool is a resource for trainers and teachers to promote equity. Both can delve into understanding children's thinking and learn why specific activities develop that thinking. |
### Session 147  
**Tanglewood**  
**Mathematics Pedagogy and Instructional Practice**  
**Individual Session**

**SECONDARY TEACHERS’ PROFESSIONAL NOTICING OF STUDENTS’ PROPORTIONAL REASONING**  
Raymond Michael LaRochelle, San Diego State University

In this presentation, I will share results from a study in which I characterized and compared the professional noticing of students’ mathematical thinking expertise in the domain of proportional reasoning of prospective teachers, experienced teachers, and emerging teacher leaders.

### Session 148  
**Westchester**  
**Mathematics Content, Processes, and Practices**  
**Individual Session**

**PROSPECTIVE PREK-8 TEACHERS’ INITIAL AND AUXILIARY PROBLEM SOLVING STRATEGIES**  
Kyle T. Schultz, University of Mary Washington  
LouAnn Lovin, James Madison University

Analysis of beginning prospective teachers’ problem solving strategies revealed heavy reliance on strategies incongruent with expectations for future practice. Session participants will analyze student work and discuss the implications of problem solving strategies with respect to PreK-8 mathematics content courses.
| Session 149 | Plaza I |
| Mathematics Pedagogy and Instructional Practice | Individual Session |
| **EXAMINING SECONDARY PSTS’ ATTENTION TO CURRICULUM MATERIALS THROUGH THEIR EYES WHEN PLANNING** | |
| Lorraine M. Males, University of Nebraska-Lincoln | |
| Ariel Setniker, University of Nebraska-Lincoln | |
| Matt Flores, University of Nebraska-Lincoln | |
| In this session we share findings from a study that used eye tracking to examine secondary PSTs’ attention to curriculum materials while planning and how structure and format of materials may influence this attention. | |

| Session 150 | Plaza II |
| Teaching and Learning with Technology | Individual Session |
| **EXTENDING NOTICING TO PRACTICE: ANALYZING PRESERVICE TEACHERS’ PEDAGOGICAL ENACTMENT BASED ON THE PROFESSIONAL NOTICING FRAMEWORK** | |
| Julie Amador, University of Idaho | |
| Anne Estapa, Iowa State University | |
| Tracy Weston, Middlebury College | |
| Karl Wesley Kosko, Kent State University | |
| Preservice teachers at four universities used LessonSketch or GoAnimate to illustrate their pedagogical decisions through an enacted approximation of practice. This session will highlight the role of technology to illuminate and extend noticing beyond attending, interpreting, and deciding to respond. | |

| Session 151 | Chevy Chase |
| Teacher Professional Development | Individual Session |
| **FROM RESEARCH TO PRACTICE AND BACK AGAIN: DEVELOPING HIGH SCHOOL TEACHERS’ ACTION RESEARCH CAPACITY** | |
| Mike Steele, University of Wisconsin Milwaukee | |
| We report first year results of a five year teacher professional development project for experienced mathematics and science teachers. Teachers’ capacity to ask and answer questions using action research tools showed critical improvement and shifted their beliefs about teaching and learning. | |

| Session 152 | West Alabama |
| School and University Partnerships and Projects | Individual Session |
| **PARTNERING FOR ENHANCED PARENT ENGAGEMENT IN THE “COMMON CORE” MATH PRACTICES** | |
| Charmaine Mangram, University of Hawaii at Manoa | |
| To address issues of access and equity, a university-community partnership was formed to support parents’ understanding of CCSSM. This session presents findings and intervention design principles from a 5-month mathematics intervention for parents of middle school students from diverse backgrounds. | |

| Session 153 | Galleria I |
| Mathematics Education Policy and Program Issues | Individual Session |
| **CAEP-NCTM STANDARDS AND MATHEMATICS TE PROGRAM RECOGNITION: WHAT TO KNOW. PROVIDE YOUR FEEDBACK** | |
| David Barnes, National Council of Teachers of Mathematics (NCTM) | |
| Irma Cruz-White, Chipola College | |
| Katharine Rasch, Maryville University | |
| Opportunities, avoidables, and possibilities exist for the NCTM – CAEP Mathematics TE Program Standards. We will share expert insight into what is needed, has been successful, and common pitfalls in report development. Provide feedback to support development of new program standards. | |

| Session 154 | Galleria II |
| TODOS Presidential Exchange Session | Individual Session |
| **STATISTICS: A TOOL FOR CREATING CULTURALLY RELEVANT LESSONS** | |
| Diane Kinch, TODOS: Mathematics for ALL | |
| This session explores statistics to create active, inquiry-based learning experiences, discussing and practicing the Guidelines for Assessment and Instruction in Statistics Education (GAISE): formulating statistical questions, collecting and analyzing data and interpreting results. Algebra is included in conjunction with statistics. | |

| Session 155 | Galleria III |
| Teacher Professional Development | Individual Session |
| **USING A STRENGTHS-BASED INQUIRY APPROACH TO SUPPORT BEGINNING MATHEMATICS TEACHERS' SUCCESS FROM THE START** | |
| Beth McCord Kobett, Stevenson University | |
| This session describes a university-led induction program designed to support beginning mathematics teachers by encouraging them to identify and leverage mathematics teaching strengths to bolster mathematics teaching challenges through an Appreciative Inquiry Approach. | |
Session 156

BRIEF REPORT SESSION: CONNECTIONS AND INFERENCE

DEVELOPING K-8 PRESERVICE TEACHERS’ INFORMAL STATISTICAL INFERENCE IN A DYNAMIC SOFTWARE ENVIRONMENT

Omar Mohammad Abu-Ghalyoun, Western Michigan University

This paper reports on results of a study aiming to identify aspects of informal statistical inference that emerge when elementary/middle school mathematics preservice teachers explore statistical investigations using the dynamic software TinkerPlots.

Session 157

PRESERVICE TEACHERS THOUGHTS ON THE PRACTICE OF MAKING CONNECTIONS

Jonathan Foster, University of Georgia
Hwa Young Lee, Texas State University

We examine preservice teachers’ thoughts on the practice of making connections in the context of a methods course with a field component. Also, we document the types of connections preservice teachers attended to during the field component.

Session 158

POSITIONING STUDENTS FOR SUCCESS: SUPPORTING STUDENT ENGAGEMENT THROUGH CLASSROOM DISCOURSE PRACTICES

Richard Robinson, The Citadel

In this session we draw on theories of positioning and the social forces that shape interactions, discussing the storylines (or patterns of interaction based on commonly shared narrative conventions (Davies & Harré, 1990)) at play within a secondary mathematics classroom.

Session 159

HOW DOES VIDEO ANALYSIS INFLUENCE PRESERVICE TEACHERS’ ABILITY TO NOTICE STUDENT MATHEMATICAL THINKING WHILE TEACHING?

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

We share findings from an analysis of eight preservice secondary mathematics teachers’ ability to notice student mathematical thinking while student teaching and discuss differences among student teachers who had varying degrees of exposure to analyzing video during their undergraduate program.

Session 160

USING A PROBLEMATIC DIAGRAM TO MOTIVATE SOCIOMATHEMATICAL NORMS IN A COURSE FOR ELEMENTARY PSTS

Margaret Rathouz, University of Michigan - Dearborn
Nesrin Cengiz-Phillips, University of Michigan-Dearborn

In this presentation, we will focus on the use of erroneous or problematic PST-generated representations as the centerpiece of classroom discussions. The confusing nature of the diagrams encourages PSTs to practice sociomathematical norms to revise the diagrams and solve problems.

Session 161

LEARNING TO TEACH PRESERVICE TEACHERS SIMILARITY THROUGH TEACHING RESEARCH

Su Liang, University of Texas at San Antonio
Priya Vinata Prasad, University of Texas at San Antonio
Raquel Vallines Mira, University of Texas at San Antonio
Cody Lynn Patterson, University of Texas at San Antonio

Similarity will be discussed based on the findings from the teaching research project of four faculties. We intend to add new knowledge to improve teaching similarity and provide valuable insights for the audience conducting further research on this topic.
| Session 162 | Plaza I | Mathematics Content, Processes, and Practices  
Individual Session | WHAT MAKES AN EXPLORATION EXPLORATORY?  
HELPING TEACHERS IDENTIFY INVESTIGATIONS THAT INSPIRE INQUIRY  
Andrew S. Richman, Boston University  
Leslie Dietiker, Boston University  
In this discussion-based session, participants will examine two ostensibly investigative lessons and learn how a research framework can be used to identify differences in the extent to which the lessons support student inquiry. |
| Session 163 | Plaza II | Mathematics Pedagogy and Instructional Practice  
Individual Session | WORKING TOGETHER: A CROSS-CULTURAL STUDY ADDRESSING MATHEMATICS ANXIETY IN K-8 PRESERVICE TEACHERS  
Heidi Hansen, Bemidji State University  
Marta T. Magiera, Marquette University  
Presentation will describe a study on K-8 PST's math anxiety across public, private and foreign universities that provide a forum for dialogue on the importance of including the topic in preservice teacher training and possible interventions for alleviating math anxiety. |
| Session 164 | Chevy Chase | Mathematics Content, Processes, and Practices  
Individual Session | DEVELOPING MEASUREMENTS OF SECONDARY MATH TEACHERS’ SPECIALIZED CONTENT KNOWLEDGE  
Jason Brasel, University of Michigan  
Nicole Marie Garcia, University of Michigan  
We focus on the development and validation of measures of secondary mathematics teachers' specialized content knowledge. The presentation examines traditional and non-traditional item types that more closely resemble the daily work of teaching along with results from item validation studies. |
| Session 165 | West Alabama | Mathematics Education Policy and Program Issues  
Individual Session | IS MORE MATH BETTER? COMPARING THE EFFECTS OF ADDITIONAL MATHEMATICS CONTENT COURSES FOR ELEMENTARY TEACHERS  
Gwendolyn Joy Johnson, University of North Texas at Dallas  
Ali S. Shaqilah, University of North Texas at Dallas  
Yolanda Graham, University of North Texas at Dallas  
The MET II called on teacher-education programs to require 12 semester-hours of mathematics from a teacher's perspective. In response, we created four courses designed specifically for teachers. We will share the impact of this change on our candidates' test scores. |
| Session 166 | Galleria I | Teacher Professional Development  
Individual Session | UNDERSTANDING MATHEMATICS TEACHERS’ GROWTH IN TERMS OF GENERATIVE METAPHORS  
Olive Chapman, University of Calgary  
This paper reports on a study of the change and the learning process underlying high school mathematics teachers’ growth in inquiry-based teaching of mathematics. Outcomes indicate how the teachers used self-directed learning and generative metaphors in supporting their growth. |
| Session 167 | Galleria II | Mathematics Pedagogy and Instructional Practice  
Individual Session | WHAT DO NOVICES BRING TO TEACHER EDUCATION? EXAMINING THE PRACTICE OF INTERPRETING STUDENT THINKING  
Meghan Shaughnessy, University of Michigan  
Tim Boerst, University of Michigan  
Rosalie DeFino, University of Michigan  
We report on a study of the specific skills with interpreting student thinking that novices bring to teacher education and consider ways in which such information could guide the design and enactment of learning opportunities in teacher education. |
| Session 168 | Galleria III | Teacher Professional Development  
Individual Session | A COLLABORATIVE EXPLORATION OF MIDDLE SCHOOL STUDENTS’ VIEWS ON MATHEMATICAL STRENGTHS  
Dorothy Y. White, University of Georgia  
Carlos Nicolas Gomez, Clemson University  
This session describes the work of a PLC to design and conduct inquiry projects to explore middle school students' views of mathematical strengths. Participants will examine the common themes across the students' perspectives and share recommendations for mathematics methods courses. |
Exploring coplanning and coteaching as viable strategies for effective student teaching has provided insights to a small cohort of preservice secondary school mathematics teachers who felt confident to differentiate their instruction and share the physical space in the mathematics classrooms.

SECONDARY MATHEMATICS METHODS COURSE GOALS AND ACTIVITIES
Ryan C. Smith, Radford University
Cynthia E. Taylor, Millersville University of Pennsylvania

In this presentation, we examine and discuss data we collected from an online survey of secondary MTEs in which they stated the most important goals and activities for their secondary mathematics methods course. Results and examples will be shared.

A DESIGN APPROACH TO SUPPORTING THE TRANSITION INTO TEACHING FOR EQUITY
Mallika Scott, University of California, Berkeley

This session presents a design-based study aimed at better supporting first year teachers through the formation of an equity-focused learning community. Participants will learn about design, view video data, and discuss relationships between design choices and opportunities for teacher learning.

IMPACT OF ELECTRONIC JOURNALS ON MATHEMATICS TEACHER EDUCATOR INSTRUCTIONAL DECISIONS
Heather Gallivan, University of Northern Iowa

Electronic journal technology has the potential to better support mathematics teacher educators (MTEs) in making instructional decisions. Results suggest the instructor was able to more easily access and provide formative feedback to PSTs as well as plan for whole class discussions.
Join your colleagues for lunch, organizational updates, and a planning session for a special new AMTE initiative.
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2018 Annual AMTE Conference
The Judith E. Jacobs Lecture was established in 2003 to honor Dr. Judith E. Jacobs, one of the founding members of AMTE. 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 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.

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<td>A Mathematics Teacher Educator's Journey: Responding to An Evolving Field</td>
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<td>2017</td>
<td>Marilyn E. Strutchens</td>
<td>Auburn University</td>
<td>Attending to Access, Equity, and Empowerment Matters for Each and Every Student: Beyond Courses and Workshops</td>
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<td>Mathematics Teacher Education: Normal Schools to Now. What's the Fit and Future for AMTE?</td>
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<td>Nadine Bezuk</td>
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<td>Supporting Elementary Teachers in Developing Their Mathematics Teaching</td>
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<td>2014</td>
<td>Barbara J. Reys</td>
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<td>Curriculum Matters! For Teachers, for Students, and for Mathematics Teacher Educators</td>
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<td>2013</td>
<td>Karen Karp</td>
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<td>The Invisible 10% - Preparing Teachers to Teach Mathematics to Students with Special Needs</td>
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<td>Deborah Schifter</td>
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<td>Interpreting the Common Core: What Might It Look Like in the Classrooms?</td>
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<td>Joan Ferrini-Mundy</td>
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<td>Learning for Tomorrow: Challenges and Opportunities in Mathematics Teacher Education</td>
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<td>James Hiebert</td>
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<td>Building Knowledge for Helping Teachers Learn to Teach: An Alternative Path for Teacher Education</td>
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<td>2009</td>
<td>Jeremy Kilpatrick</td>
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<td>Going to War with the Army You Have</td>
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<td>Ed Silver</td>
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<td>Judith Sowder</td>
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<td>Preparing Elementary Teachers: The Role of Reasoning about Numbers and Quantities</td>
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<tr>
<td>2004</td>
<td>Thomas J. Cooney</td>
<td>University of Georgia</td>
<td>The Role of Mathematics Teacher Education: Reform or Enculturation?</td>
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<td>2003</td>
<td>Judith E. Jacobs</td>
<td>California State Polytechnic University, Pomona</td>
<td>Improving Mathematics Education: Mathematics Teacher Educators Lead the Way</td>
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</table>
PROPOSAL REVIEWERS FOR 2018 ANNUAL AMTE CONFERENCE

Abassian, Aline
Abernathy, Melissa
Alagaoz-Ekici, Cigdem
Alqahtani, Muteb
Alshehri, Khaled Abdullah
Amador, Julie
Appelgate, Mollie
Appova, Aina
Bailey, Pamela Rae
Baldinger, Erin E.
Barker, David
Berry, Robert
Bolyard, Johnna
Brass, Amy
Broadus, Angela
Cadly, Jo Ann
Campbell, Matthew P
Carlson, Mary Alice
Chao, Theodore
Conner, AnnaMarie
Costner, Kelly M
Cox, Dana C.
Cunningham, Elizabeth Petit
de Araujo, Zandra
deLeeuw, William
Dibbs, Rebecca A.
Dupree, Lakesia L.
Ekici, Celil
Eli, Jennifer Ann
Elliott, Rebekah
Enderson, Mary C
 Faulkner, Valerie
 Feldman, Ziv
 Felton-Koestler, Mathew D.
 Fillingim, Jennifer G
 Fox, Ryan
 Franz, Dana Pomykal
 Freeburn, Ben
 Galindo, Enrique
 Gerardo, Juan Manuel
 Gerasimova, Daria
 Gichobi, Mary N.
 Gomez, Carlos Nicolas
 Greenstein, Steven
 Harbour, Kristin
 Harper, Suzanne Rushton
 Hicks, Kimberly Ann
 Holliman, Natalie
 Hudson, Rick A.
 Id-Deen, Lateefah
 Jackson, Billy
 Johnson, Gwendolyn Joy
 Johnson, Kim Helene
 Kar, Avijit
 Kim, Soomi
 Kirwan, J Vince
 Knapp, Melinda
 Ko, Yi-Yin
 Koester, Mark

University of Central Florida
MSD of Decatur Township: Liberty
Early Elementary
University of the Virgin Islands
SUNY Cortland
Imam Abdulrahman Bin Faisal Uni.
University of Idaho
Iowa State University
The Ohio State University
Mary Baldwin University
University of Minnesota
Illinois State University
University of Virginia
West Virginia University
University of Northern Iowa
Benedictine College
University of Tennessee, Knoxville
West Virginia University
Montana State University
The Ohio State University
University of Georgia
Winthrop University
Miami University
University of Michigan-Flint
University of Missouri
Arizona State University
Texas A&M University - Commerce
University of South Florida
University of the Virgin Islands
The University of Arizona
Oregon State University
Old Dominion University
North Carolina State University
Boston University
Ohio University
Madison County Schools
Belmont University
Mississippi State University
MOST Research Associate
Indiana University
U. of Illinois at Urbana-Champaign
George Mason University
UW-Green Bay
Clemson University
Montclair State University
University of Alabama
Miami University
University of Houston
Texas Tech University
University of Southern Indiana
University of Louisville
Univ. of Tenn. at Chattanooga
University of North Texas at Dallas
West Chester University
University of Georgia
Teachers College, Columbia Uni.
Kennesaw State University
Oregon State Univ.-Cascades
Indiana State University
MSU Denver
Koestler, Courtney
LaRochelle, Raymond Michael
Levin, Mariana
Liang, Su
Liebars, Cathy
Lin, Hochieh
Lischka, Alyson E.
Liu, Jinqing
Lovett, Jennifer N.
Lu, Yaomingxin
Magnier, Jodelle S.W.
Maldonado, Luz Angelica
Mallam, Winifred
Marin, Kate Ariemma
Martin, Leigh
Martin, Ricardo
Marynowski, Richelle
Mccloskey, Andrea
McGraw, Rebecca
Melhuish, Kathleen
Middleton, Catharina
Miller, Katherine E
Mohr-Schroeder, Margaret J.
Molitoris Miller, Susanna
Morgan, Michelle Ann
Myers, Marielle
Naresh, Nirmala
Nguyen, Giang-Nguyen
Nirode, Wayne
Njoguna, Grace
Nurnberger-Haag, Julie
Olanoff, Dana
Onrill, Chandra Hawley
Ozturk, Ayse
Pampel, Krysten
Patterson, Lynn Gannon
Pitvorec, Kathleen
Poling, Lisa
Rakes, Christopher
Reiten, Lindsay
Roller, Sarah A.
Safi, Farshid
Salem, Wesam M.
Schwartz, Catherine
Sears, Ruthmae
Seashore, Kimberly
Sharpe, Charlotte Dunlap
Shaughnessey, Meghan
Simpson, Amber
Siy, Eric
Smith, Ryan C.
Smith, Wendy
Snider, Rachel B.
Somers, John W.
Staples, Megan
Stockero, Shari L.
Strachota, Susanne
Sun, Kathy
Swartz, Barbara Ann
Tackie, Nii Ansah

OHIO Center for Equity
San Diego State University
Western Michigan University
University of Texas at San Antonio
The College of New Jersey
The Ohio State University
Middle Tennessee State University
Indiana University
Middle Tennessee State University
Western Michigan University
SUNY Buffalo State
Texas State University
Texas Woman’s University
Stonehill College
Clemson University
Iowa State University
University of Lethbridge
Penn State University
University of Arizona
Texas State University
East Carolina University
The Ohio State University
University of Kentucky
Kennesaw State University
University of Northern Colorado
Kennesaw State University
University of North Texas
University of West Florida
Miami University
Syracuse University
Kent State University
Widener University
Univ. of Massachusetts Dartmouth
The Ohio State University
Arizona State University
Murray State University
University of Illinois at Chicago
Appalachian State University
U. of Maryland Baltimore County
University of Northern Colorado
Univ. of Alabama in Huntsville
University of Central Florida
The University of Memphis
East Carolina University
University of South Florida
San Francisco State University
Syracuse University
University of Michigan
Binghamton University
University of Georgia
Radford University
University of Nebraska
The College of New Jersey
University of Indianapolis
University of Connecticut
Michigan Technological University
University of Wisconsin-Madison
Santa Clara University
McDaniel College
Univ. of Louisiana at Lafayette
<table>
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<tr>
<td>Taylor, Cynthia E.</td>
<td>Millersville Univ. of Pennsylvania</td>
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<td>Tyminski, Andrew</td>
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<td>Valentine, Keri</td>
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<td>Vontoure, Dana Enriquez</td>
<td>Vontoure Learning, LLC</td>
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<td>Whipple, Kyle Stephen</td>
<td>University of Minnesota</td>
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<td>Whitehead, Ashley</td>
<td>Appalachian State University</td>
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<td>Wilburne, Jane M.</td>
<td>Penn. State University, Harrisburg</td>
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<td>James Madison University</td>
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<td>Wilson, Aaron T</td>
<td>Univ. of Texas Rio Grande Valley</td>
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<td>U. of North Carolina, Greensboro</td>
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<td>Woods, Dawn</td>
<td>Southern Methodist University</td>
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<td>Yao, Xiangquan</td>
<td>The Ohio State University</td>
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<td>Yin, Yuxin</td>
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<td>Young, Jamaal Rashad</td>
<td>University of North Texas</td>
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<td>Zelkowski, Jeremy</td>
<td>University of Alabama</td>
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<td>Zhao, Wenmin</td>
<td>University of Missouri</td>
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A. WELCOME

B. APPROVAL OF THE MINUTES

C. TREASURER AND MEMBERSHIP REPORT

D. CONFERENCE REPORT

E. DIVISION REPORTS & RECOGNITIONS

   Headquarters Division
   Membership Division
   Professional Learning Division
   Publications Division
   Advocacy, Equity and Research Division
   Communications and Outreach Division

F. NEW BUSINESS

G. INSTALLATION OF NEW BOARD MEMBERS

H. NEW AFFILIATE RECOGNITION

I. DISCUSSION OF AMTE PRIORITIES, PROGRAMS, OR COMMITMENTS INTO THE FUTURE

J. ADJOURNMENT
Christine Thomas, president, called the meeting to order at 12:15 pm

WELCOME

Christine Thomas welcomed attendees, thanking the membership for their confidence in her and for electing her as president. She commented on her enthusiasm for this thriving organization at the forefront of the work in mathematics teacher education. She also mentioned the challenges facing the work of the organization as we attend to issues of equity and advocacy in the current political climate. She reminded members of the strategic priorities from her two years as president. These include:

For 2015

- Strengthen connections across the organization to promote the improvement of mathematics teacher education through evidence-based decisions.
- Strengthen AMTE’s advocacy for high quality mathematics teacher education in support of quality mathematics teaching.

For 2016

- Reflect on AMTE’s impact and celebrate the past 25 years as an organization.
- Strengthen the AMTE infrastructure to support our individual and collective capacities to advance mathematics teacher education for the next 25 years.

Christine highlighted the release of the *Standards for Preparing Teachers of Mathematics* and thanked Nadine Bezuk, Jenny Bay-Williams, Gary Martin, and Doug Clements for their leadership in their development. She let the membership know that the next steps in the *Standards* work are to assure this a living document and to lead the engagement of everyone that supports the preparation of mathematics teachers in this work.

APPROVAL OF MINUTES FROM BUSINESS MEETINGS HELD ON JANUARY 30, 2016.

Christine called for any changes in the 2016 Business Meeting minutes found on pages 87-90 of the conference program. There were none.

Motion: Christine Browning made the motion to accept the minutes from the 1/30/16 meeting. Gary Martin seconded the motion. Unanimously approved.

TREASURER REPORT

Anita Wager, Treasurer, presented the operating budget for the 2016-2017 and the expenses year to date. The operating income from July 2016 through June 2017 is $120,032. The expected expenditures in that time frame are $125,100. The difference between expenditures and income is made up with income generated through sponsors and the annual conference. We also currently have about $150,676 in reserves representing more than one year’s expenses.

Motion: Mike Steele made the motion to accept the Treasurer’s Report. Tim Boerst seconded the motion. Unanimously approved.

MEMBERSHIP REPORT

Tim Hendrix provided the following information about membership.

- Current membership: 1006
- Membership last year: 1035

Of our current members, 161 are graduate students and 35 are emeritus members. Forty-nine states are represented in our membership along with Washington DC, Puerto Rico, 4 Canadian Provinces and six other countries.
Stats on our memberships:

- 1 membership is extended until mid-2026
- 1 membership is extended until mid-2023
- 30 memberships expire in 2020 or later
- 279 memberships expire in 2018 or later
- 726 memberships expire in 2017
- At least 27 current members have been a member since before 2000

Please encourage your colleagues to join AMTE or renew their memberships.

Tim also reminded everyone to complete the conference feedback survey. This can be accessed through the conference app or the website.

Motion: Maggie McGatha made the motion to accept the Membership Report. Mike Steele seconded the motion. Unanimously approved.

COMMITTEE AND TASK FORCE REPORTS

Affiliate Connections Committee: Tom Evitts provided the report on behalf of Jean Lee. Tom will serve as incoming chair/associate vice president (AVP). He thanked 2016 members Jean Lee, Alejandra Salinas, Travis Miller, Maureen Grady, and Mary Pat Sjostrom; he welcomed Jill Newton and Michelle Stephan as new committee members. Megan Burton and Anita Wager are board representatives to this committee.

Committee Activities: The Affiliate Connections Committee (ACC) continues to renew and advance the support to AMTE Affiliates. This includes the affiliate renewal form, the affiliate leader webinar, a conference presentation, and the affiliate webpage. ACC members are assigned to regions so they can better support affiliate leaders. The committee is also exploring a ½ day conference for affiliate leaders. They have also engaged in substantial updates to affiliates webpage - creating resources for new affiliates and highlighting benefits for being an affiliate member. Their upcoming work includes fine-tuning the roles of ACC Reps and refining the protocol for receiving and processing affiliate renewal forms.

Awards Committee: Christine T. shared the Awards Committee Report on behalf of Kim Markworth. Lisa Poling will be the new chair/AVP of the committee. Members of the committee include: Bethany Noblitt, Stephanie Livers, Zandra de Araujo, Nirmala Naresh, Courtenay Miller, and Lisa Poling. She also recognized Kathleen Lynch-Davis as the board liaison this past year.

Committee Announcements:

- There is a change to timeline for Excellence and Early Career Awards - Nominations now due June 15
- EMS Scholarships are now $2000 (Many thanks to the Math Learning Center for sponsoring these scholarships)
- The committee’s work this year will also include increased attention to publicizing the various awards in order to increase nominations.

Communications Committee: Christine Browning provided the report on behalf of Erika Bullock and thanked Tim Boerst for his service as board liaison. Committee members in 2016 include: Stephanie Cross, Lorraine Males, Kevin McLeod, Michael Simone, and Cory Bennett.

Committee Special Project: An AMTE Twitter reboot in February 2016. You can follow @AMTENews on Twitter!

- January 2016 Twitter Stats: 92 followers with 5 impressions
- January 2017 Twitter Stats: 265 followers with 16,300 impressions

Constitution and By-Laws:

Christine provided the report on behalf of Skip Fennell, the chair. We will be voting on the changes in the AMTE By-Laws later on in the meeting. The committee includes Fran Arbaugh and Bonnie Oppenheimer with Board Representative Tim Hendrix.

Committee Activities: Completed changes to By-Laws for consistency with the restructuring of AMTE governance.

Emerging Issues Committee:

Marilyn Strutchens provided the report. Committee members include: Kathryn Chval, Corey Drake, Kathleen Held, Shari Stockero, Paola Sztajn, with Nicole Rigelman as the board representative.

Committee Activities: Continued activities this year included providing notifications of emerging issues and breaking news on the Emerging Issues banner and tab on AMTE.net, the Advocacy and Emerging Issues breakfast, and
conference session. The committee also advocates through public comment on policy and development of a toolkit for members. In the coming year, the committee intends to work more closely with the Equity and Research committees and keep up with reports on teacher shortages and successes in addressing them.

Membership Committee:

Jonathan Bostic provided the report. The committee members include: Tommy Hodges, Suzanne Harper, Chris Jett, Jane Keiser, and Winnie Ko. The board liaison was Megan Burton with support from the outgoing liaison Nicole Rigelman.

Committee Activities: This year, the Membership Committee developed a new volunteer form and made revisions to the membership directory. These items have been shared with AMTE leadership for consideration moving forward as the Membership Committee will dissolve at the end of this meeting due to AMTE restructuring.

Mentoring Committee: Gladis Kersaint provided the report. Members include: Jennifer Chavout, Pier A. Junior Clarke, Karen King, Alyson Lischka, and Sararose Lynch. Dorothy White served as board liaison to this committee.

Committee Activities: The committee worked with the Professional Development Committee to merge mentoring and professional development under AMTE’s restructuring. They are interested in mentoring that is specific to individuals at various stages in their careers, at various institution types with colleagues or alone. The group held a session at this year’s conference to provide mentoring for early career MTEs. They have launched a mechanism to honor those that have been mentors in your life through the website. The committee left with recommendations to the Professional Development Committee as this committee will dissolve with the restructuring.

STaR Sub-Committee: Amanda Jansen provided the report on behalf of Barbara Reys. She thanked committee members, which include Sue Peters, Bob Reys, Denise Spangler, Jeff Wanko, Jeremy Zelkowski, Susan Gregson, and Niral Shah as well as board representative Kathleen Lynch-Davis.

Committee Announcements:

- The 7th cohort (2016) of the STaR Fellows met for the Summer Institute in June 2016. The group included 32 Fellows (employed at 31 institutions), bringing the total number of Fellows since the inception of the program (2010) to 239.
- Karen Hollebrands and Jeff Shih have assumed the role of co-Directors of the STaR Program. Denise Spangler will become Chair of the STaR Committee at the conclusion of this conference.
- To date, $177,000 has been raised to support the program (from individuals, professional associations, AMTE affiliates, and foundations).

Special Projects:

- During this annual conference, professional videos were developed to help tell the story of the STaR Program. A raffle was conducted to support the continuation of the program.

Nominations and Elections Committee: Margaret Mohr-Schroeder provided the report as ongoing chair/AVP of the committee. She thanked committee members Adam Feldhaus, Temple Walkowiak, Ted Watanabe, Toya Frank, and Mark Klespis along with President-Elect Randy Philipp.

Committee Activities: Margaret reminded attendees that AMTE is seeking nominations for president-elect and board member-at-large. The newly elected secretary, Sandi Cooper, and board member-at-large, Eva Thanheiser, will assume their new roles at the end of this meeting.

Professional Development for Members Committee: Julie James provided the report for the committee and thanked Tim Boerst and Mike Steele who served as board liaisons to this committee. She also thanked committee members Mark Hoover, P. Mark Taylor, Trena Wilkerson, and Sam Eskelson for their work.

Committee Activities: This year, the committee organized five webinars. Julie thanked members for participating. She reminded attendees that they can suggest a webinar topic or speaker using the conference app or on the AMTE website. More information will be coming soon about the 2017 webinars.

Conference Program Committee: Holt Wilson provided the report as outgoing chair of the conference committee. He recognized Susan Gay for all that she does for the conference. Committee members included: David Barker, Robert Berry, AnnaMarie Conner, Dana Cox, Shannon Dingman (past chair), Enrique Galindo, Rick Hudson, Courtney Koestler, Jill Newton, Stacy Reeder, Farshid Safi (incoming chair), Catherine Schwartz, and David Slavit.

Conference Program Stats:
Holt also reminded attendees that the AMTE 2018 Proposal Deadline is May 15, 2017.

Research Committee: Sarah van Ingen provided the report as incoming AVP. She thanked the 2016 Chairs - John Lannin and Babette Benken (board representative) as well as members Hilda Borko, Mathew Felton-Koestler, Janet Frost, Imani Goffney, John Lannin. She welcomed new members Ruthmae Sears and Blake Peterson.

Committee Activities and Special Projects:
- Continue to provide mentoring to poster session presenters
- Develop a repository for mathematics education research instruments on AMTE’s website
- Generate themes expressed in research statements made over the past ten years in AMTE documents (e.g., Early Career Award recipients’ Connections articles)

Technology and Mathematics Teacher Education Committee: Barbara Swartz provided the report for the committee. Barbara thanked Christine Browning and Aslı Özgün-Koca for their support as she transitioned into this role. She also thanked the committee members: Mi Yeon Lee, Angiline Powell, Steve Rhine, Rob Wieman, and Ann Wheeler.

Committee Activities: The committee works to inform AMTE’s members about the technology related issues(updates via the conference workshop and write-ups to the AMTE newsletter. Barbara announced that the 2017 NTLI Winners are Amanda Thomas and Aj Edson for “A Framework for Mathematics Teachers’ Evaluation of Digital Instructional Materials: Integrating Mathematics Teaching Practices with Technology Use in K-8 Classrooms.” The committee intends to introduce a “Tech Talk” proposal to spotlight success stories MTEs have had with incorporating technology into their teaching and PD efforts

Mathematics Teacher Educator Editorial Panel: Randall Groth provided the report for the committee. He thanked the members of the committee (Sandra Crespo, Kristen Bieda, Jeffrey Shih, Angela Barlow, Edd Taylor, Gloriana González Rivera, David Barnes (NCTM)) for their ongoing work and Rebekah Elliott for her leadership as chair. He welcomed new members: Jan Yow and Theodore (Teddy) Chao. Finally he thanked Christine Browning as AMTE board representative and Nadine Bezuk as NCTM board representative.

Announcements and Special Projects: Randall let the group know that current editors, Sandra Crespo and Kristen Bieda, have extended their tenure in that role for another year. The MTE is published in March and September. He encouraged attendees to read, write, and review for the journal. The panel awarded its first reviewer award this year and intends to do the same in subsequent years.

Connections Editorial Panel: Christine provided the report for the panel on behalf of Babette Benken. She thanked members: Barbara Hess, Daniel Ilaria, Gwendolyn Johnson, Maggie Niess, Sarah Selmer, and James Telese. She welcomed new members Jonathan Bostic and Alysson Lischka.

Announcements and Special Projects: The next issue: Spring 2017 will be available about March 1. The panel accepts articles on an on-going basis (max 1400 words). There were 7 articles accepted and published in 2016. The solicitation is available on AMTE website under the “Publications” tab. A new reoccurring feature is the “Spotlight on STaR Fellow.” These will be offered two times a year.

CITE Editorial Panel: No report given.

Conference and Celebrations Task Force: Susan thanked everyone for their participation and engagement with colleagues on behalf of the conference committee. She recognized the Celebrations Task Force whose members include: Jennifer Bay-Williams, Nadine Bezuk, Shannon Dingman, Mark Ellis, David Glassmeyer, Suzanne Harper, and Casey Hawthorne. Susan drew attention to the splashes of silver for the 25th anniversary. She highlighted the photo booth, the photograph countdown on Facebook, the brainstorm activity, and the poster that represents the Standards for Preparing Teachers of Mathematics.

RECOGNITIONS

Susan thanked Selcuk Haciomeroglu and Megan Nickels for their work as co-chairs for the Local Arrangements Committee. Susan also pointed out that the technology helpers were younger this year. Megan’s student, Julisa, accepted Megan’s award on her behalf.

Christine thanked and honored Susan for all of her work. Christine recognized the following outgoing board members for their work on the board of directors: Kathleen Lynch Davis as Sponsorship Director; Megan Burton as Affiliates
NEW BUSINESS

Christine discussed the restructuring and provided information about the various ways that the organization has grown and taken even more of a leadership and advocacy role in mathematics education. Some of this growth is evident through:

- Increased quantity of regular publications,
- Deeper engagement with varied mathematics education organizations,
- Increased responses/advocacy on documents and policies influencing mathematics education,
- Continued creation of policy and standards documents,
- Varied professional development offerings,
- Continued giving of awards to members, and
- Administration of STaR.

She described how the former structure included an elected board and 5 directors. Because AMTE is a volunteer organization it relies heavily on the work of committees. With the restructuring, there is a recommendation for 5 divisions where VPs lead the work of 3-4 committees with their associated AVPs (formerly committee chairs). A task force developed the plan in 2015. The plan for restructuring was completed in 2016 and communicated to the membership throughout this past year. Attendees received a copy of the poster that outlines the new structure.

Changes in By-Laws

The restructuring involves some additions to the By-Laws to add the new Vice-Presidents of the Divisions, some edits to describe the titles of roles and composition of the Board of Directors. Specifically, there is a shift in language from various appointed director positions to appointed vice-president (VP) positions. A description of each of the five VPs (Membership; Professional Learning; Publications; Advocacy, Equity, and Research; Communication and Outreach) is also provided. As was true with the Director positions, the terms of service for these roles are three years with the possibility of renewal.

A question emerged regarding potential confusion with having so many titles that include the word president. Christine responded that the former “director” title also had some confusion given that there were both appointed and elected directors in the former structure. They new VPs over various division will be appointed and work with an elected board member as a liaison. Fran Arbaugh spoke in support of the restructuring.

Motion: Fran Arbaugh made the motion to accept the changes in the By-Laws. Gladis Kersaint seconded the motion. Unanimously approved.

INSTALLATION OF NEW BOARD MEMBERS

Christine welcomed Eva Thanheiser as incoming board member-at-large, Sandi Cooper as Secretary, and Randy Philipp as President. She then invited Randy to speak about next steps and his vision for our collective work. He provided some inspirational thoughts and articulated the strategic priorities for the coming year.

AMTE 2017 STRATEGIC PRIORITIES AND ANNOUNCEMENTS

Randy shared the priorities for 2017, listed below:

- **Equity** - Continue to place issues of equity and social justice at the forefront of AMTE's focus
- **AMTE Standards Dissemination** - Disseminate the AMTE Standards for Preparing Teachers of Mathematics and make the Standards a focal point for work of AMTE
- **Restructure AMTE's Infrastructure** - Enact and facilitate the transition of AMTE's infrastructure around five Divisions

ADJOURNMENT

Randy adjourned the meeting at 1:30 pm (EDT).

Respectfully submitted by Nicole Rigelman.
MORE INFORMATION ON AMTE.NET

On the AMTE website (amte.net), you will find information on each of the following:

- AMTE Leadership, including members serving on committees and task forces
- AMTE Awards, including the Excellence in Mathematics Teacher Education Award and the Early Career Award
- Susan Gay AMTE Conference Scholarship for Graduate Students
- Elementary Mathematics Specialist (EMS) Scholarship
- Call for Manuscripts, Reviewers, Readers, & Comments for CITE-Math Journal
- Call for Manuscripts for Mathematics Teacher Educator

AMTE’S 2019 ANNUAL CONFERENCE

We invite you to attend and speak at next year’s Twenty-Third Annual AMTE Conference, to be held during February 7-9, 2019, in Orlando, FL.

The Call for Proposals will be available on the AMTE website (amte.net) by March 1, 2018, and in the next issue of AMTE Connections. The Program Chair is Dana Cox of Miami University (programchair@amte.net).


Visit amte.net/conferences for updated information on past and future conferences.