



Association of Mathematics Teacher Educators



TWENTY-FIRST ANNUAL AMTE CONFERENCE

FEBRUARY 9 - 11, 2017

ROSEN PLAZA HOTEL, ORLANDO, FLORIDA

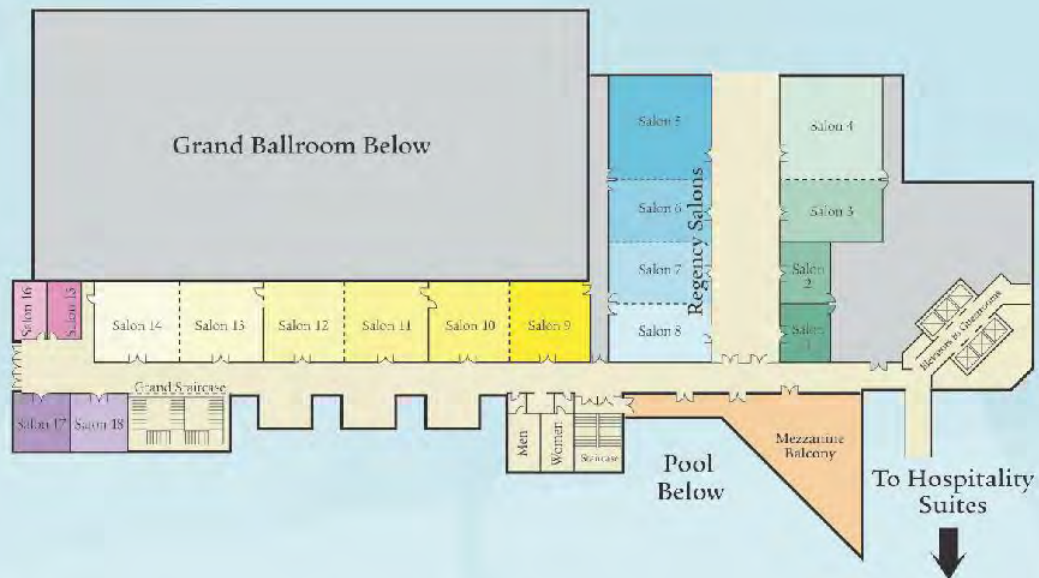
9700 INTERNATIONAL DRIVE, ORLANDO, FL 32819

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ROSEN PLAZA HOTEL, ORLANDO, FL

SECOND FLOOR



FIRST FLOOR



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WELCOME

We would like to welcome each of you to the Twenty-First Annual Conference of the Association of Mathematics Teacher Educators (AMTE). At the 2017 conference, AMTE celebrates 25 years as the lead organization devoted to the improvement of mathematics teacher education! It is indeed an exciting time for AMTE as we continue to grow, develop new and exciting collaborations with sister organizations, and engage in new projects supporting the needs and ongoing work of our members. The world of mathematics teacher education is an exciting area in which to work and study, and AMTE is committed to continuing to provide opportunities for members to meet, learn from each other, and enjoy the wonderful and supportive community that we have built over the past two decades.

We would like to give you an idea of what you can expect over the next few days:

INVITED SPEAKERS

Ed Silver moderates a panel of speakers giving our **opening keynote address**, *"Enhancing the Mathematics of K-12 Teacher Preparation: Multiple Perspectives Across the Mathematical Sciences,"* in the Thursday General Session at 9:00 AM in Ballroom B. Panel members include:

Elizabeth Burroughs, *Montana State University*, speaking on K-12 mathematical modeling;

Christine Franklin, *University of Georgia*, speaking on K-12 statistics education; and

Perla Myers, *University of San Diego*, speaking on K-12 mathematics education.

Marilyn Strutchens gives the **2017 Judith Jacobs Lecture**, with a talk titled *"Attending to Access, Equity, and Empowerment Matters for Each and Every Student: Beyond Courses and Workshops"* on Friday afternoon, at 4:45 PM in Ballroom B.

Fran Arbaugh, recipient of the **Award for Excellence in Scholarship in Mathematics Teacher Education**, gives a talk titled *"What Does Linking Research and Practice Really Mean?"* on Thursday afternoon, at 4:30 PM (Session 61, Ballroom B).

Susan Peters, recipient of the **2016 Early Career Award**, will present a talk titled *"Teacher Education in Statistics: Reflections and Moving Forward"* on Thursday morning, at 10:45 AM (Session 2, Ballroom B).

PROGRAM INFORMATION

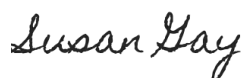
There are 201 sessions and 496 speakers on this year's program (compared to 483 speakers in 2016). There were 452 proposals submitted for review, down slightly from 464 in 2016. The program committee accepted 266 proposals (58.6%) for the program, including: 168 individual presentations, discussion and extended sessions, and symposia; 54 brief reports organized into 19 thematic sessions; and 42 posters for the poster session. The second annual AMTE Poster Session is Thursday afternoon from 5:30 to 6:30 PM in Ballroom C. The program also includes 9 invited presentations, 2 award-winner sessions, and 2 sessions presented by AMTE sponsors.

LEAD THE WAY

Before we close, we would like to thank each of you for attending our conference and bringing your expertise and energy. As AMTE members, you have the vision, the knowledge, and the experience to help us pave our way into the future. You are truly our greatest asset today and tomorrow, and we could not accomplish what we do without your support and active involvement in AMTE. Throughout this conference and our celebration of the 25th year of AMTE, we ask you to stay engaged, keep us proactive, and help us shape the future of mathematics teacher education. Our personal thanks go out to all of you.



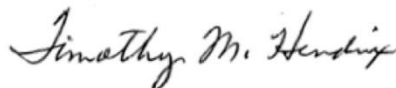
Christine D. Thomas, AMTE President



Susan Gay, AMTE Conference Director



P. Holt Wilson, 2017 AMTE Conference Program Chair



Tim Hendrix, AMTE Executive Director

CELEBRATE OUR 25th ANNIVERSARY!

Whether you are a new member of AMTE or count your years of membership back into the 1990s, welcome to the celebration of 25 years of AMTE, the largest national professional organization devoted to the improvement of mathematics teacher education.

Please join our celebratory anniversary activities.

PRIOR TO THE 2017 CONFERENCE

- Watch our countdown with **photos showcasing AMTE's** members, events, publications, and other artifacts on the AMTE Facebook Page and Twitter Account.
- Contribute to the **Give 25 for AMTE's 25th Anniversary** campaign on the AMTE Website.



AT THE 2017 CONFERENCE

- Meet your colleagues at the **Photo-Op** to take a photograph to commemorate your experience as part of the 25th Anniversary Celebration.
- Discuss AMTE's next 25 years in the conference app, Twitter (#AMTEnext25), or Facebook.

LOOKING BACK AFTER 25 YEARS

In Baltimore on November 2, 1991, a group of approximately 15 people met as the National Forum of College and University Mathematics Teacher Educators to continue conversations that led to the creation of the Association of Mathematics Teacher Educators.

NOTABLE AMTE FIRSTS

First President	Mark Spikell, George Mason University
First Newsletter Editor	Henry Kepner, University of Wisconsin, Milwaukee
First Issue of the Newsletter	Fall 1992
First Business Meeting	March 31, 1993
First Election	Spring 1994
First Constitution & Bylaws	April 1994
First AMTE Website	Fall 1995
First Conference	February 14-15, 1997
First Conference Location	Washington, DC
First Executive Director	Judith Jacobs
First Headquarters	The Center for Education and Equity in Mathematics, Science and Technology at California State Polytechnic University, Pomona, CA
First Publication	<i>Principles to Guide the Design and Implementation of Doctoral Programs in Mathematics Education</i> published in January 2003.

Thirteen AMTE members have served the organization as president, and many more have served as members of the Board of Directors, members of committees, members of task forces, and as participants in a variety of activities in the organization.

THE CELEBRATIONS TASKFORCE INVITES YOU TO THE CELEBRATION!

Please find us at the conference to share your AMTE experiences! - Jennifer Bay-Williams, Nadine Bezuk, Shannon Dingman, Mark Ellis, Susan Gay (Chair), David Glassmeyer, Suzanne Harper, Casey Hawthorne

CONFERENCE SCHEDULE

TWENTY-FIRST ANNUAL AMTE CONFERENCE
FEBRUARY 9-11, 2017, ORLANDO, FLORIDA

WEDNESDAY, FEBRUARY 8, 2017

6:00 PM – 7:30 PM AMTE Registration Desk Open

THURSDAY, FEBRUARY 9, 2017

7:00 AM – 5:00 PM	AMTE Registration Desk Open
9:30 AM – 5:00 PM	Exhibits Open
9:00 AM – 10:30 AM	Opening Session – Ballroom B
10:45 AM – 11:45 AM	Concurrent Sessions
11:45 AM – 1:00 PM	Lunch – Ballroom C/D
1:00 PM – 1:45 PM	Concurrent Sessions
2:00 PM – 3:00 PM	Concurrent Sessions
3:00 PM – 3:30 PM	Break
3:30 PM – 4:15 PM	Concurrent Sessions
4:30 PM – 5:30 PM	Concurrent Sessions
5:30 PM – 6:30 PM	Poster Session – Ballroom C
6:30 PM – 7:30 PM	Reception for Graduate Students and Early Career Faculty – Ballroom D

FRIDAY, FEBRUARY 10, 2017

6:45 AM – 7:45 AM	Breakfast – Ballroom C
6:45 AM – 7:45 AM	Advocacy and Emerging Issues Breakfast – Ballroom D
7:30 AM – 4:30 PM	AMTE Registration Desk Open
8:30 AM – 5:00 PM	Exhibits Open
8:00 AM – 9:00 AM	Concurrent Sessions
9:15 AM – 10:00 AM	Concurrent Sessions
10:15 AM – 11:30 AM	Concurrent Sessions
11:30 AM – 1:00 PM	Lunch – Ballroom C/D
1:00 PM – 2:00 PM	Concurrent Sessions
2:15 PM – 3:00 PM	Concurrent Sessions
3:00 PM – 3:30 PM	Break
3:30 PM – 4:15 PM	Concurrent Sessions
4:45 PM – 6:15 PM	Judith E. Jacobs Lecture – Ballroom B
6:15 PM – 7:30 PM	Dinner – Ballroom C/D

SATURDAY, FEBRUARY 11, 2017

6:45 AM – 7:45 AM	Breakfast and Affiliate Meetings – Ballroom C/D
7:30 AM – 10:30 AM	AMTE Registration Desk Open
8:00 AM – 9:00 AM	Concurrent Sessions
9:15 AM – 10:15 AM	Concurrent Sessions
10:30 AM – 11:30 AM	Concurrent Sessions
11:30 AM – 1:30 PM	Lunch and Business Meeting – Ballroom C/D

CONFERENCE INFORMATION

CONFERENCE REGISTRATION DESK

Please stop by the AMTE Registration Desk, located in the Rosen Plaza Hotel on the First Floor, to obtain your conference materials, including the conference program and your nametag.

AMTE REGISTRATION DESK HOURS

WEDNESDAY	6:00 PM - 7:30 PM
THURSDAY	7:00 AM - 5:00 PM
FRIDAY	7:30 AM - 4:30 PM
SATURDAY	7:30 AM - 10:30 AM

FINDING THE CONFERENCE AREA

Conference session rooms are located on the Mezzanine Level (second floor) and the First Floor in the Grand Ballroom. Meals will be held in Ballroom C/D on the First 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 Thursday, February 9 through Saturday, February 11.

Look for the network or SSID – **AMTE** and use the Network Security Key **amte2017**. Only 500 people can have access at one time, so please only use one device on the hotel network at a time.

Conference attendees staying at the Rosen Plaza Hotel receive complimentary internet access in individual guestrooms for the duration of the conference. Directions on how to access internet services can be found in each guestroom.

CANCELLATIONS AND PROGRAM CHANGES

For updated lists of cancellations and other program changes, visit amte.net/conferences/conf2017/updates.

HOTEL PARKING INFORMATION

Self-parking at the Rosen Plaza Hotel is complimentary for everyone attending the conference. Tell the parking booth attendant that you are attending the AMTE conference in order to receive free parking. Valet parking is also available for \$20 per car per day (price subject to change).

OPTIONS FOR THURSDAY DINNER

For information on nearby restaurants, check the Conference App or inquire at the AMTE Registration Desk. Pointe Orlando is across the street from the hotel; this area has a variety of dining options.

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) for serving as conference photographer.

PERSONAL PROPERTY

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

LOST AND FOUND

Please drop off any unclaimed found items at the AMTE Registration Desk. 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 - 5:00 PM

FRIDAY 8:30 AM - 5:00 PM

Make sure to visit the exhibits! Exhibitors include ETA hand2mind, GraphLock, Information Age Publishing, the Math Learning Center, NCSM, NCTM, Pearson, TODOS, and Vosaic. See Exhibitors on pages 17 & 18 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 Ballroom C/D. This is a great time to meet each other face-to-face and discuss a game plan for the upcoming year. See page 8 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 2017", or go to:

AMTE17.QUICKMOBILE.MOBI

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

Password = **amte17**



Web Application



Apple App Store



Google Play App Store

LIKE AMTE ON FACEBOOK



facebook.com/AMTE.net

FOLLOW AMTE ON TWITTER



@AMTEnews

*Use **#AMTE2017** to join public discussion around the conference.*

*Use **#AMTENEXT25** to share your ideas about the future of AMTE.*

AMTE 2016 BOARD OF DIRECTORS

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HISTORICAL LISTING OF AMTE PRESIDENTS

PRESIDENT

Christine Thomas
Fran Arbaugh
Marilyn Strutchens
Barbara Reys
Jennifer Bay-Williams
Sid Rachlin
Karen Karp

TERM

2015 – 2017
2013 – 2015
2011 – 2013
2009 – 2011
2007 – 2009
2005 – 2007
2003 – 2005

PRESIDENT

Francis (Skip) Fennell
Susan Gay
Nadine Bezuk
Judith Jacobs
Henry Kepner
Mark Spikell

TERM

2001 – 2003
1999 – 2001
1997 – 1999
1995 – 1997
1993 – 1995
1991 – 1993

AMTE 21st ANNUAL CONFERENCE COMMITTEE

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

Holt Wilson (Chair, 2017), University of North Carolina at Greensboro, phwilson@uncg.edu

Shannon Dingman (Chair, 2016), University of Arkansas, sdingman@uark.edu

Farshid Safi (Chair, 2018), University of Central Florida, farshid.safi@ucf.edu

ANNUAL CONFERENCE – PROGRAM COMMITTEE

2014 – 2017

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Stacy Reeder, University of Oklahoma, reeder@ou.edu

David Slavit, Washington State University, Vancouver, dslavit@wsu.edu

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Dana Cox, Miami University, dana.cox@miamioh.edu

Rick Hudson, University of Southern Indiana, rhudson@usi.edu

Courtney Koestler, Ohio University, koestler@ohio.edu

2016 – 2019

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AnnaMarie Conner, University of Georgia, aconner@uga.edu

Enrique Galindo, Indiana University, egalindo@indiana.edu

Catherine Schwartz, East Carolina University, schwartzca@ecu.edu

CONFERENCE APP DEVELOPMENT TEAM

App Coordinator: Joe Champion, Website Director, joechampion@boisestate.edu

App Graphics Assets: Tony Nguyen, Webmaster, ttnguyen@meredith.edu

Ex Officio: Tim Hendrix, Executive Director, hendrixt@meredith.edu

LOCAL ARRANGEMENTS COMMITTEE

Erhan Selcuk Haciomeroglu, Co-Chair University of Central Florida

Megan Nickels, Co-Chair

University of Central Florida

Aline Abassian

University of Central Florida

Janet Andreasen

University of Central Florida

Elizabeth Bello

University of Central Florida

Brianna Bennett

University of Central Florida

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University of Central Florida

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University of Central Florida

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University of Central Florida

Makini Sutherland

University of Central Florida

Maria Wahba

University of Central Florida

Nicole Wessman Enzinger

George Fox University

AMTE AFFILIATES

AMTE is proud to welcome members of its 23 active affiliated organizations:

AFFILIATE

- Illinois Mathematics Teacher Educators
- Utah Association of Mathematics Teacher Educators
- Florida Association of Mathematics Teacher Educators
- California Association of Mathematics Teacher Educators
- Association of Mathematics Teacher Educators of Connecticut
- Georgia Association of Mathematics Teacher Educators
- Tennessee Association of Mathematics Teacher Educators
- Association of Mathematics Teacher Educators - Texas
- Pennsylvania Association of Mathematics Teacher Educators
- Massachusetts Mathematics Association of Teacher Educators
- Missouri Mathematics Association for Advancement of Teacher Training
- South Carolina Association of Mathematics Teacher Educators
- New Jersey Association of Mathematics Teacher Educators
- Teachers of Teachers of Mathematics, Oregon
- Mississippi Association of Mathematics Teacher Educators
- Association of Mathematics Teacher Educators of Alabama
- Iowa Association of Mathematics Teacher Educators
- Association of Maryland Mathematics Teacher Educators
- Hoosier Association of Mathematics Teacher Educators
- Association of Mathematics Teacher Educators of North Carolina
- Michigan Association of Mathematics Teacher Educators
- Kentucky Association of Mathematics Teacher Educators
- Virginia Association of Mathematics Teacher Educators

AFFILIATE

- Illinois Mathematics Teacher Educators
- Utah Association of Mathematics Teacher Educators
- Florida Association of Mathematics Teacher Educators
- California Association of Mathematics Teacher Educators
- Association of Mathematics Teacher Educators of Connecticut
- Georgia Association of Mathematics Teacher Educators
- Tennessee Association of Mathematics Teacher Educators
- Association of Mathematics Teacher Educators - Texas
- Pennsylvania Association of Mathematics Teacher Educators
- Massachusetts Mathematics Association of Teacher Educators
- Missouri Mathematics Association for Advancement of Teacher Training
- South Carolina Association of Mathematics Teacher Educators
- New Jersey Association of Mathematics Teacher Educators
- Teachers of Teachers of Mathematics, Oregon
- Mississippi Association of Mathematics Teacher Educators
- Association of Mathematics Teacher Educators of Alabama
- Iowa Association of Mathematics Teacher Educators
- Association of Maryland Mathematics Teacher Educators
- Hoosier Association of Mathematics Teacher Educators
- Association of Mathematics Teacher Educators of North Carolina
- Michigan Association of Mathematics Teacher Educators
- Kentucky Association of Mathematics Teacher Educators
- Virginia Association of Mathematics Teacher Educators

ACRONYM	LOCATION
IMTE	Illinois
UAMTE	Utah
FAMTE	Florida
CAMTE	California
AMTEC	Connecticut
GAMTE	Georgia
TAMTE	Tennessee
AMTE-TX	Texas
PAMTE	Pennsylvania
MassMATE	Massachusetts
(MAT)^2	Missouri
SCAMTE	South Carolina
NJAMTE	New Jersey
TOTOM	Oregon
MAMTE	Mississippi
AMTEA	Alabama
IAMTE	Iowa
AMMTE	Maryland
HAMTE	Indiana
AMTE-NC	North Carolina
MI-AMTE	Michigan
KAMTE	Kentucky
VI-AMTE	Virginia

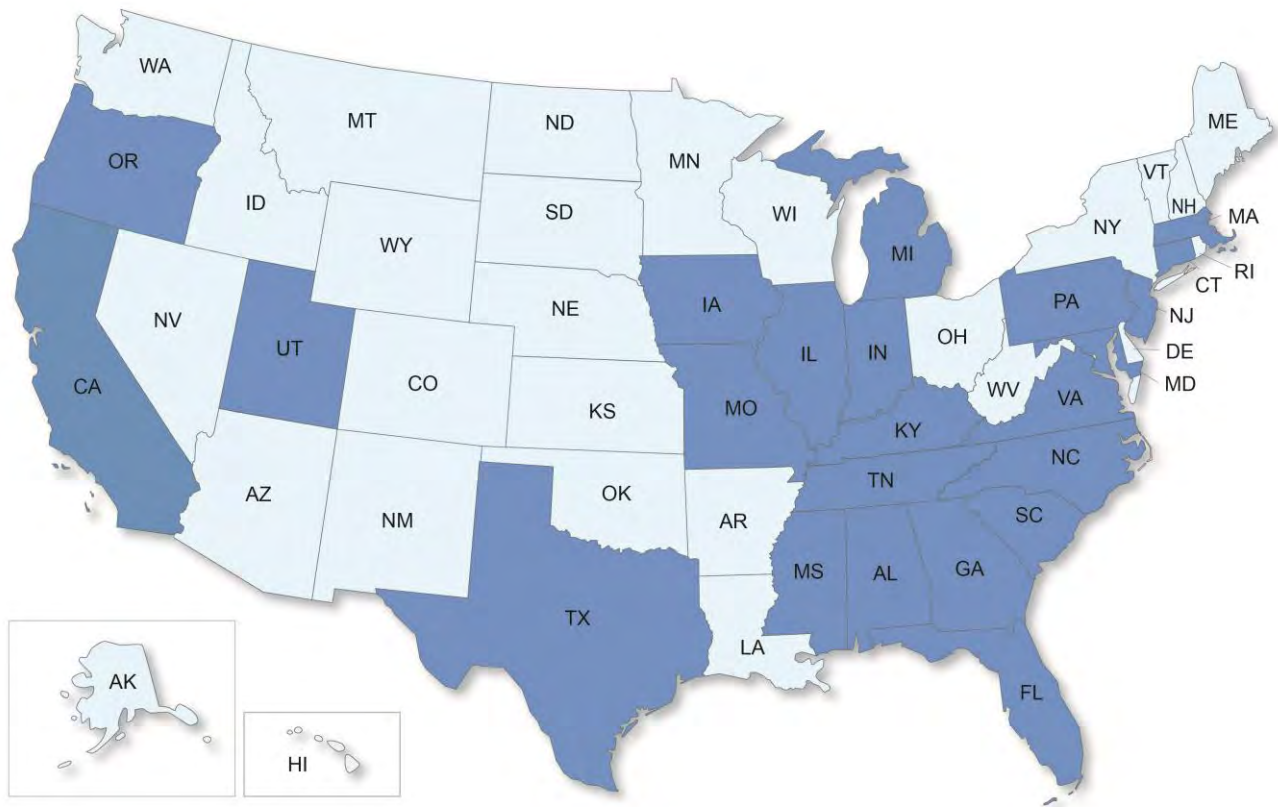
ACRONYM	LOCATION
IMTE	Illinois
UAMTE	Utah
FAMTE	Florida
CAMTE	California
AMTEC	Connecticut
GAMTE	Georgia
TAMTE	Tennessee
AMTE-TX	Texas
PAMTE	Pennsylvania
MassMATE	Massachusetts
(MAT)^2	Missouri
SCAMTE	South Carolina
NJAMTE	New Jersey
TOTOM	Oregon
MAMTE	Mississippi
AMTEA	Alabama
IAMTE	Iowa
AMMTE	Maryland
HAMTE	Indiana
AMTE-NC	North Carolina
MI-AMTE	Michigan
KAMTE	Kentucky
VI-AMTE	Virginia

LOCATION

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

LOCATION

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



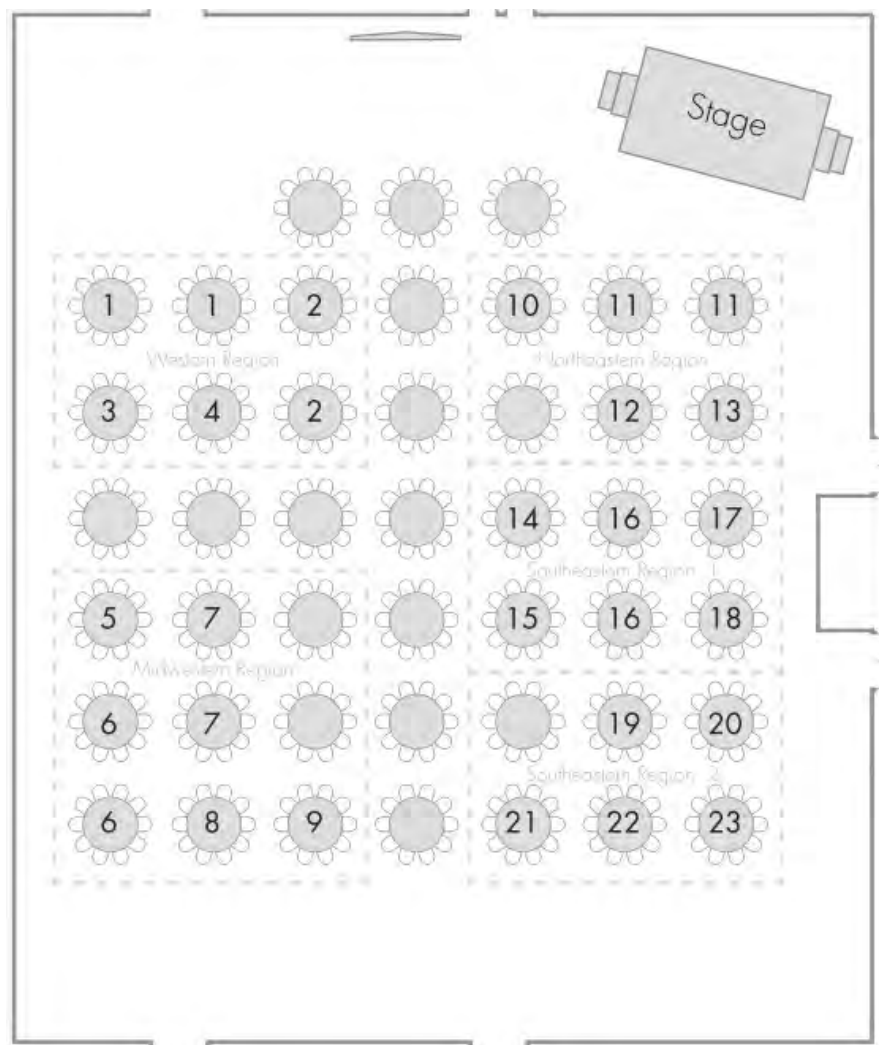
The Association of Mathematics Teacher Educators is a member of the Conference Board of the Mathematical Sciences and is an Affiliated Group of the National Council of Teachers of Mathematics.

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 11, 2017
Ballroom C/D, 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)

NORTHEASTERN REGION

10. AMTEC (Connecticut)
11. PAMTE (Pennsylvania)
12. MassMATE (Massachusetts)
13. NJAMTE (New Jersey)

SOUTHEASTERN REGION 1

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

SOUTHEASTERN REGION 2

19. FAMTE (Florida)
20. TAMTE (Tennessee)
21. MAMTE (Mississippi)
22. AMTEA (Alabama)
23. KAMTE (Kentucky)

AFFILIATE CONNECTIONS COMMITTEE SESSION

INDIVIDUAL AND COLLECTIVE CAPACITIES: STRENGTHENING AFFILIATES TO BECOME STRONGER ADVOCATES
Thursday, February 9, 4:30 PM - 5:30 PM, Salon 14

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.

2017 NTLI AWARD WINNERS

Amanda Thomas, University of Nebraska, Lincoln
Alden J. Edson, Michigan State University

Title: A Framework for Mathematics Teachers' Evaluation of Digital Instructional Materials: Integrating Mathematics Teaching Practices with Technology Use in K-8 Classrooms

Location: Rosen Plaza Hotel, Salon 9

Time: Friday, February 10, 2:15 PM – 3:00 PM

Look in the 2018 Call for Proposals for information on how to submit a paper for the 2018 AMTE NTLI Award.

SCHOLARSHIPS FOR ELEMENTARY MATHEMATICS SPECIALISTS

The purpose of this Elementary Mathematics Specialist Scholarship is to provide the recipient with \$1,000 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 2016 EMS SCHOLARSHIP RECIPIENTS!

Kathryn Pitz, Brooklyn, NY
Kristine Schmitt, Arden, NC
Heather Vaillancourt, Hutchinson, MN

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-First 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 Erhan Selcuk Haciomeroglu, Co-chair for Registration support, and Megan Nickels, Co-chair for Audio/Visual support, who are critical to making our conference successful;
- The University of Central Florida College of Education and Human Performance, especially Larry Jaffe, Director of Technology and Facilities, and Dean Pamela "Sissi" Carroll, for technology and personnel support 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, and Headquarters staff for providing the time and effort necessary to organize all facets of the conference;
- Joe Champion, Website Director, and Tony Nguyen, AMTE Graphic Designer & Webmaster, for their dedicated work on the conference program and materials; and
- Ashley Brittain and Haley Ervin, Meredith College AMTE Student Assistants, 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 2017 conference.

*Thank
You!*

SPONSORS

AMTE would like to express our appreciation to this year's Premium Sponsors for providing invaluable support for our conference and for our organization's activities and initiatives.

THE MATH LEARNING CENTER

GOLD SPONSOR

The Math Learning Center (MLC) is a nonprofit organization serving the K-12 education community. Our mission is to inspire and enable individuals to discover and develop their mathematical confidence and ability. We offer innovative and standards-based curriculum, resources, and professional development. Our products and services are used by educators throughout the United States and in several international locations.

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.

ETA HAND2MIND

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As a Silver Sponsor, ETA hand2mind is pleased to support the 2017 AMTE Conference. We believe in the power of hands-on learning, and our sole purpose is to make it happen. For over 50 years, we've seen that students learn more effectively when their hands and minds work together. Each year teachers and administrators at thousands of schools and districts across the country rely on our hands-on resources to get their students excited about and engaged in learning.

With over 8,500 high-quality, hands-on products to empower teachers, inspire students, and engage minds, ETA hand2mind is proud to be a trusted supplier of supplemental K-8 materials. Our research-proven, classroom-tested materials are designed to meet the needs of teachers and students.

All of us at ETA hand2mind share a common mission: to ensure students, teachers and parents have access to high-quality, hands-on learning materials that unleash the true potential within each student. We're collaborative, innovative, and team-oriented. We believe the needs of our customers come first, and strive to achieve operational and organizational excellence in everything we do.

INFORMATION AGE PUBLISHING

SILVER SPONSOR

Information Age Publishing continues to partner with AMTE on multiple projects, including the republication of the AMTE Monograph Series last year. In addition, IAP and AMTE are partnering to produce a three-book series in the field of mathematics teacher education over the course of the next 4 years. AMTE is proud to have IAP as a sponsor—they have provided support for the AMTE Awards, and are donating books and gift certificates for our Early Career and Graduate Student Reception. Thanks to IAP for their continued support!

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

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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.

GOLD SPONSOR – THE MATH LEARNING CENTER



Provide your education students
with access to a full
K–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 10th

1–2pm, Rosen Plaza Hotel, Salon 6

Pamela Weber Harris–University of Texas at Austin

mathlearningcenter.org/university



SILVER SPONSOR – ETA HAND2MIND

Join us!

Session: Explore the Power of Manipulatives
in Modern Mathematics Classrooms

Speaker: Jesse Mitchmerhuizen

Date: Thursday, February 9

Time: 4:30pm to 5:30pm

Location: Rosen Plaza Hotel, Salon 8

See first-hand how
manipulatives can
deepen understanding of
mathematical concepts
from whole numbers to
fractions and beyond.

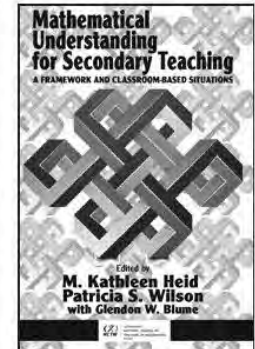
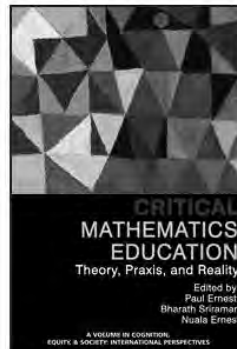
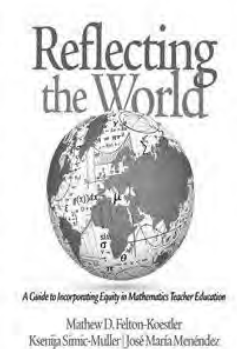
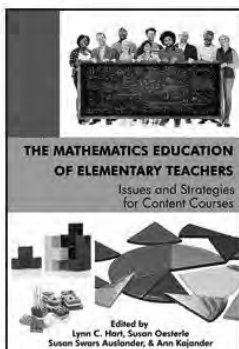
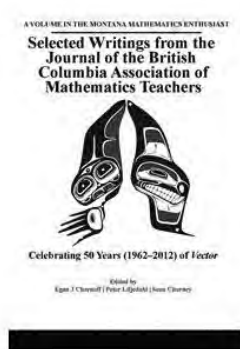
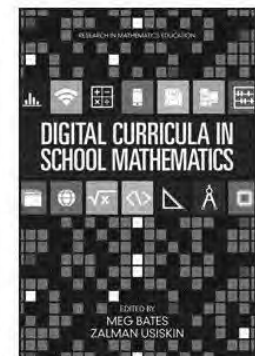
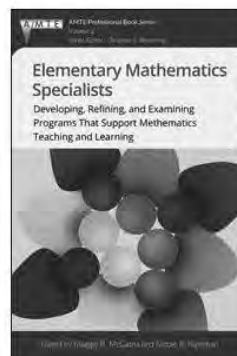
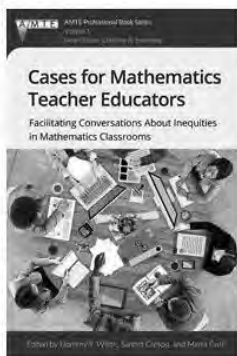
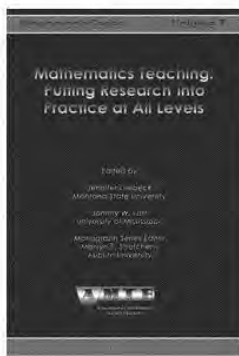
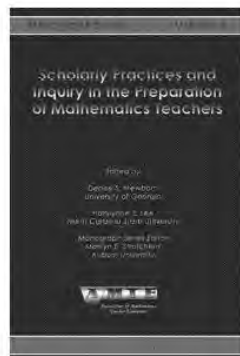
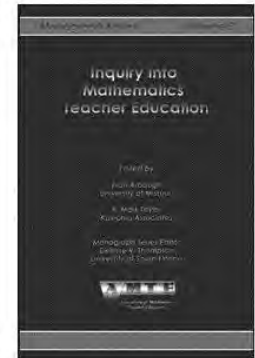
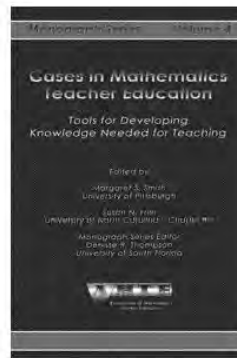
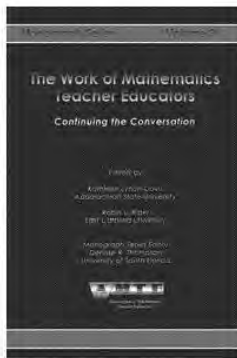
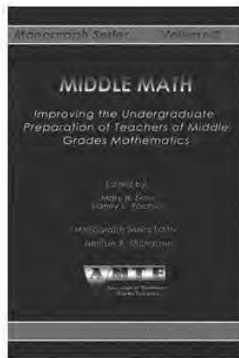
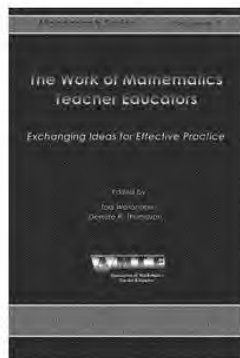


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NATIONAL COUNCIL OF
TEACHERS OF MATHEMATICS

Save the Date!

PREMIER MATH EDUCATION EVENT

NCTM ANNUAL MEETING & EXPOSITION 2017

April 5-8 | San Antonio



Creating Communities and Cultivating Change

It's never too early to plan ahead for the leading math education event of the year. Network with thousands of your peers and fellow math education professionals to exchange ideas, engage with innovation in the field and discover new learning practices that will drive student success.

The latest teaching trends and topics will include:

- **Access and Equity:** Teaching Mathematics with an Equity Stance
- **Assessment:** A Tool for Purposeful Planning and Instruction
- **Building Conceptual and Procedural Understanding**
- **Professionalism:** Learning Together as Teachers
- **Teaching, Learning, and Curriculum:** Best Practices for Engaging Students in Productive Struggle
- **The "M" in STEM/STEAM**
- **Tools and Technology:** Using Technology to Effectively Teach and Learn Mathematics

Register by
February 24
for savings.

The NCTM Annual Meeting & Exposition is ideal for:

PRE-K-12 TEACHERS
 MATH TEACHER EDUCATORS
 NEW AND PROSPECTIVE TEACHERS
 MATH COACHES AND SPECIALISTS
 MATH RESEARCHERS
 SCHOOL AND DISTRICT ADMINISTRATORS

Learn more at nctm.org/annual and follow us on #NCTManual

EXHIBITORS

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:

EXHIBITOR

ABOUT THE EXHIBIT

ETA HAND2MIND

With over 8,500 high-quality, hands-on products to empower teachers, inspire students, and engage minds, ETA hand2mind is proud to be a trusted supplier of supplemental K-8 materials. Classroom-tested and designed to meet the needs of teachers and students, our materials support academic standards, easily integrate into your existing lesson plans, and expand students' understanding of key concepts and grasp of core skills. Please stop by our booth to learn more!

GRAPHLOCK

GraphLock (graphlock.com) is a cross-platform mobile and web-based app that turns the user's phone, tablet, or computer into a scientific and graphing calculator with a unique lockdown mode. Lockdown mode means just that - no calls, texts, internet, or Snapchat, just the calculator - making it safe and secure to be used in class and on exams.

INFORMATION AGE PUBLISHING

IAP is a social science publisher of academic and scholarly book series, monographs, handbooks and journals. IAP's goal is to develop a comprehensive 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.

THE MATH LEARNING CENTER

The Math Learning Center (MLC) is a nonprofit organization serving the K-12 education community. Our mission is to inspire and enable individuals to discover and develop their mathematical confidence and ability. We offer innovative and standards-based resources and professional development. MLC also provides university instructors free access to the full contents of the *Bridges in Mathematics* K-5 curriculum. Stop by our table to learn more about the Bridges University program.

NATIONAL COUNCIL OF SUPERVISORS OF MATHEMATICS

NCSM is an international mathematics leadership organization that provides professional learning opportunities for education leaders to support and sustain improved student achievement. Stop by for more information about NCSM and our publications and resources, including the *NCSM Journal for Mathematics Education Leadership*, *Position Papers*, our *Principles* and, *It's TIME*. Also learn about NCSM partnerships to support Formative Assessment and Digital Learning, and about professional learning opportunities scheduled for 2017.

EXHIBITOR

ABOUT THE EXHIBIT

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. Learn more about NCTM and the benefits of membership at [NCTM.org](https://nctm.org). Stop by the NCTM table to learn about resources for higher education and for your chance to win an NCTM gift pack.

PEARSON

Pearson is the leading publisher for mathematics education, with best-selling products for courses in mathematical content and educational methods. Preview the latest print and online course solutions, designed for a variety of course formats, and see new ways to incorporate videos and e-manipulatives into online assessment. Learn more at: pearsonhighered.com.

TODOS: MATHEMATICS FOR ALL

TODOS: Mathematics for ALL is an international professional organization that advocates for equity and high quality mathematics education for all students – in particular, Latina/o 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!

VOSAIC

The Vosaic suite of products empowers you to analyze and explore video to further performance. Tagging, coding, and collaborating through video integration increases efficiencies and guides you to discover and uncover deeper meaning. Stop by our exhibit to learn more about our products.



OPENING SESSION

BALLROOM B

**ENHANCING THE MATHEMATICS OF K-12 TEACHER PREPARATION:
MULTIPLE PERSPECTIVES ACROSS THE MATHEMATICAL SCIENCES**

Edward Silver, University of Michigan
Elizabeth Burroughs, Montana State University
Christine Franklin, University of Georgia
Perla Myers, University of San Diego

Panelists will share information about and perspectives on how contemporary developments in the areas of mathematics, statistics, and mathematical modeling could and should impact the treatment of mathematics in the initial preparation and continuing education of P-16 teachers of mathematics.



CONFERENCE HISTORICAL HIGHLIGHTS

5TH ANNUAL CONFERENCE, 2001

COSTA MESA, CA

Preconference Symposium
**Principles and Standards for School Mathematics – What to do
about Public Relations, Communication Avenues, etc.**

Joan Ferrini-Mundy, Michigan State University
W. Gary Martin, Auburn University
Shelley Ferguson, San Diego City (CA) Public Schools

General Session
**Doctoral Programs in Mathematics Education – Should There Be
Guidelines? If So, What Forms Might They Take?**

Robert Reys, University of Missouri
Doug Aichele, Oklahoma State University
Tom Carpenter, University of Wisconsin – Madison
Bob Glasgow, Southwest Baptist University
Karen Schultz, Georgia State University
Judy Sowder, San Diego State University

OVERVIEW OF THURSDAY MORNING, FEBRUARY 9, 2017

	9:00 AM – 10:30 AM	10:45 AM - 11:45 AM
Ballroom B	1. <i>Enhancing the Mathematics of K-12 Teacher Preparation: Multiple Perspectives Across the Mathematical Sciences</i> - Silver, Burroughs, Franklin, & Myers	2. <i>Teacher Education in Statistics: Reflections and Moving Forward</i> - Peters
Salon 1		3. <i>Using Critical Whiteness to Explore A Mathematics Teacher Candidate's Experiences With Dissonance in Urban Contexts</i> - Cross & Bayazit
Salon 2		4. <i>Mathematical Tasks That Promote Prospective Elementary Teachers' Attention to and Use of Multiplicative Structure</i> - Feldman & Roscoe
Salon 3		5. <i>Student Work as a Context for Promoting Student Understanding of Mathematics</i> - Edson, Phillips, & Grant
Salon 4		6. <i>The Use of Emotional Geographies to Explore Identity Formation of Prospective Teachers</i> - Gomez
Salon 5		7. <i>A Study of Professional Learning Communities to Enhance Secondary Mathematics Teaching</i> - Suurtamm
Salon 6		8. <i>Brief Report Session: Equity and Teachers</i> - Stoehr, Whipple, Nance, & Marshall
Salon 7		9. <i>Brief Report Session: Communities of Practice</i> - Foster, Allen, Borowski, & Dupree
Salon 8		10. <i>Connecting Theory and Technique to Support Teachers' Implementation of Mathematics Discourse in the Classroom</i> - Sztajn, Malzahn, & Dick
Salon 9		11. <i>Creating a Mathematics Teacher Education Instrument Repository: Issues Surrounding Content and Access</i> - Benken & van Ingen
Salon 10		12. <i>Missing the Mark and Reflecting on the Target: Using Number Lines to Reason About Fractions</i> - Sullivan, Barnett, Harbaugh, & Russell
Salon 11		13. <i>Mathematical Argumentation: Using Work Samples to Support the Development of Teachers' Practice</i> - Staples
Salon 12		14. <i>Sharing Instructional Activities That Promote Robust Fraction Knowledge in Prospective PreK-8 Teachers</i> - Stevens, Siegfried, Lovin, Busi, & Boyce
Salon 13		15. <i>Learning to Teach Mathematics for Social Justice with Technology</i> - Harper
Salon 14		16. <i>Raising Awareness and Visibility of U.S. Doctoral Programs in Mathematics Education</i> - Bradfield, Champion, & Hertel

Session 2

2016 AMTE Early Career Award Winner
Individual Session

Ballroom B

TEACHER EDUCATION IN STATISTICS: REFLECTIONS AND MOVING FORWARD

Susan Peters, University of Louisville

This session highlights research to identify factors that secondary teachers claim deepened their understanding of statistics concepts. Participants then engage with activities that incorporate these factors and consider research that examines how engagement with these activities can enhance teachers' understandings.

Session 3

Equity and Mathematics Education
Individual Session

Salon 1

USING CRITICAL WHITENESS TO EXPLORE A MATHEMATICS TEACHER CANDIDATE'S EXPERIENCES WITH DISSONANCE IN URBAN CONTEXTS

Stephanie Behm Cross, Georgia State University
Nermin Bayazit, Fitchburg State University

We share experiences of Brett, a White male mathematics teacher candidate working in an urban school. Drawing on cognitive dissonance and critical whiteness studies, we offer one way to consider how social contexts and ideologies impact reactions to dissonance.

Session 4

Mathematics Content, Processes, and Practices
Individual Session

Salon 2

MATHEMATICAL TASKS THAT PROMOTE PROSPECTIVE ELEMENTARY TEACHERS' ATTENTION TO AND USE OF MULTIPLICATIVE STRUCTURE

Ziv Feldman, Boston University
Matt Brady Roscoe, University of Montana

This session will present results of a study examining the impact of a sequence of instructional tasks aimed at strengthening prospective elementary teachers' attention to and use of multiplicative structure, as provided by prime decomposition, to solve problems involving divisibility.

Session 5

Mathematics Content, Processes, and Practices
Individual Session

Salon 3

STUDENT WORK AS A CONTEXT FOR PROMOTING STUDENT UNDERSTANDING OF MATHEMATICS

Alden J. Edson, Michigan State University
Elizabeth Phillips, Michigan State University
Yvonne E Grant, Michigan State University

This session will focus on how student work can serve as a context for developing student understanding of mathematics. Participants will discuss the many opportunities and challenges of student work that can inform the professional learning of mathematics teachers.

Session 6

Mathematics Pedagogy and Instructional Practice
Discussion Session

Salon 4

THE USE OF EMOTIONAL GEOGRAPHIES TO EXPLORE IDENTITY FORMATION OF PROSPECTIVE TEACHERS

Carlos Nicolas Gomez, Clemson University

Prospective elementary teachers' emotional experiences during their practicums influence their vision of teaching and learning mathematics. This session focuses on the emotional geographies framework to examine the emotionality of prospective elementary teachers as they form their mathematics teacher identity.

Session 7

Teacher Professional Development
Individual Session

Salon 5

A STUDY OF PROFESSIONAL LEARNING COMMUNITIES TO ENHANCE SECONDARY MATHEMATICS TEACHING

Christine Suurtamm, University of Ottawa

This session will report on a two-year PLC initiative that began with 9 PLCs, and grew into a networked PLC that shared learning across 72 districts. The session focuses on shifts in practice and components that facilitated mathematics teacher learning.

Session 8

Equity and Mathematics Education

Salon 6

BRIEF REPORT SESSION: EQUITY AND TEACHERS

"I JUST DON'T WANT TO FEEL DUMB": ONE ELEMENTARY PRESERVICE TEACHER'S EXPERIENCES WITH MATHEMATICS ANXIETY

Kathleen Jablon Stoeher, Santa Clara University

The purpose of this study was to gain a better understanding of the experiences of mathematics anxiety of one elementary teacher. The findings revealed that mathematics anxiety may be an issue or concern that remains consistent and/or recurs for decades.

TEACHER PREPARATION PROGRAMS THROUGH AN LGBTQ LENS: A CASE STUDY WITH SECONDARY MATHEMATICS EDUCATORS

Kyle S Whipple, University of Minnesota

I conducted a case study of five secondary LGBTQ mathematics educators that are open with their identities in their educational systems, their experiences in their respective teacher preparation programs, and their challenges as part of the teacher workforce.

UNPACKING THE BAGGAGE: AN ANALYSIS OF PRESERVICE TEACHERS' MATHEMATICS HISTORIES AND POSITIONS OF PRIVILEGE

Rebecca Smith Nance, University of Mississippi
Anne Marie Marshall, Lehman College

PSTs write personal mathematics autobiographies often revealing "baggage" from their past. This study goes beyond the universal characteristics of an adversarial relationship with mathematics. The baggage also contains privilege and oppression as it relates to the stories of these PSTs.

<p>Session 9 Salon 7 <i>Preservice Teacher Field Experiences</i></p> <p>BRIEF REPORT SESSION: COMMUNITIES OF PRACTICE</p> <p>BUILDING AN ONLINE PROFESSIONAL LEARNING COMMUNITY TO ENHANCE PRESERVICE TEACHERS' FIELD EXPERIENCE Jonathan Foster, University of Georgia</p> <p>We explore how an online professional learning community among preservice teachers, practicing teachers, and teacher educators contributed to preservice teachers' development and supported their field experience. Ideas to improve the use of online professional learning communities will be exchanged.</p> <p>COACHING TRIAD: COLLABORATING TO DEVELOP MATHEMATICAL KNOWLEDGE NEEDED FOR TEACHING Lakesia L. Dupree, University of South Florida</p> <p>This presentation describes the nature of collaboration among a mathematics content coach, a preservice teacher and a mentor teacher during coaching cycles, to develop the preservice teacher's mathematical knowledge. The findings have implications on the support offered during clinical experiences.</p> <p>METHODS INSTRUCTORS AS FIELD EXPERIENCE TEACHERS: HELPING PRESERVICE TEACHERS BRIDGE THEORY INTO PRACTICE Rebecca S Borowski, Indiana University Jared R Allen, Indiana University</p> <p>We share findings from a study which examined the role instructors played in PSTs' experiences putting theory into practice. The dual role of instructors (who taught both field experience and methods courses) helped PSTs enact theories in their own teaching.</p>	<p>Session 11 Salon 9 <i>Development of Mathematics Teacher Educators Discussion Session</i></p> <p>CREATING A MATHEMATICS TEACHER EDUCATION INSTRUMENT REPOSITORY: ISSUES SURROUNDING CONTENT AND ACCESS Babette M Benken, California State University, Long Beach Sarah van Ingen, University of South Florida</p> <p>Participants will discuss how to create a repository for instruments that could support greater coherence and quality in mathematics teacher education research. Topics to be addressed: types of instruments needed/included, user-driven content/feedback on instrument use, and issues of access.</p>
<p>Session 10 Salon 8 <i>Teacher Professional Development Individual Session</i></p> <p>CONNECTING THEORY AND TECHNIQUE TO SUPPORT TEACHERS' IMPLEMENTATION OF MATHEMATICS DISCOURSE IN THE CLASSROOM Paola Sztajn, North Carolina State University Kristen Malzahn, Horizon Research, Inc. Lara Kristen Dick, Bucknell University</p> <p>Focusing on decompositions of practice, we explore connections between theory and technique in mathematics PD. We share the operationalization of theory and technique in the design of one program and present data that shows the promise of the program.</p>	<p>Session 12 Salon 10 <i>School and University Partnerships and Projects Individual Session</i></p> <p>MISSING THE MARK AND REFLECTING ON THE TARGET: USING NUMBER LINES TO REASON ABOUT FRACTIONS Patrick Lane Sullivan, Missouri State University Joann Barnett, Missouri State University Adam Harbaugh, Missouri State University Maida Russell, Springfield Public School District</p> <p>The Reed Academy Mathematics Project is a collaboration between a middle school teacher and university mathematics education faculty. Our focus was on understanding 7th grade students' reasoning about fractions using a number line to improve instruction of our preservice teachers.</p>
	<p>Session 13 Salon 11 <i>Mathematics Pedagogy and Instructional Practice Individual Session</i></p> <p>MATHEMATICAL ARGUMENTATION: USING WORK SAMPLES TO SUPPORT THE DEVELOPMENT OF TEACHERS' PRACTICE Megan Staples, University of Connecticut</p> <p>Teachers' practice with mathematical argumentation must be developed deliberately. We engage participants in a resource to examine the quality of student arguments. Pre-post data from teachers' responses to the same activity will be presented and followed by a discussion.</p> <p>Session 14 Salon 12 <i>Mathematics Content, Processes, and Practices Discussion Session</i></p> <p>SHARING INSTRUCTIONAL ACTIVITIES THAT PROMOTE ROBUST FRACTION KNOWLEDGE IN PROSPECTIVE PREK–8 TEACHERS Alexis Stevens, James Madison University John (Zig) Siegfried, James Madison University LouAnn Lovin, James Madison University Rich Busi, James Madison University Steven Boyce, Portland State University</p> <p>This session explores our use of in-class activities to promote prospective PreK–8 teachers' construction of fraction schemes and operations. Participants will be asked to share their own fraction-related activities and discuss issues such as number choice and task selection.</p>

Session 15

Teaching and Learning with Technology
Discussion Session

LEARNING TO TEACH MATHEMATICS FOR SOCIAL JUSTICE WITH TECHNOLOGY

Frances Harper, Michigan State University

Participants analyze an example task, which blends technology, social justice, and mathematics, and discuss possibilities for engaging prospective teachers with this and other similar tasks to support the development of technological pedagogical content knowledge for teaching mathematics for social justice.

Salon 13**Session 16**

Mathematics Education Policy and Program Issues
Discussion Session

RAISING AWARENESS AND VISIBILITY OF U.S. DOCTORAL PROGRAMS IN MATHEMATICS EDUCATION

Kenneth R Bradfield, Michigan State University
 Joe Champion, Boise State University
 Joshua Hertel, University of Wisconsin, La Crosse

Existing public information on doctoral programs in mathematics education is limited and recruitment has long been focused on word of mouth and localized efforts. Participants will discuss potential next steps toward more coordinated, national information on inducing mathematics teacher educators.

Salon 14**CONFERENCE HISTORICAL HIGHLIGHTS****12TH ANNUAL CONFERENCE, 2008****TULSA, OK***Opening Session*

A National Conference on Doctoral Programs in Mathematics Education: Some Things that Happened and Possible Aftermath

Robert Reys, University of Missouri-Columbia
 Glenda Lappan, Michigan State University
 Diana Lambdin, Indiana University

Judith Jacobs Lecture

Mathematics Teacher Education in Dodge City: Desperately Seeking Wyatt Earp and Henri Poincaré

Ed Silver, University of Michigan

Closing Session

Reflections on Our Field: A Dialogue about Research in Mathematics Teacher Education

Paola Sztajn, National Science Foundation
 Denise S. Mewborn, University of Georgia

**LUNCH****BALLROOM C/D**

Please join your colleagues for lunch.



CONFERENCE HISTORICAL HIGHLIGHTS

6TH ANNUAL CONFERENCE, 2002

SAN ANTONIO, TX

*Preconference Symposium***What Mathematics Do We Demand of Ourselves?**

Johnny Lott, University of Montana

*General Session***The Study of Lesson Study as a Medium for Professional Development**

Zalman Usiskin, University of Chicago

Deborah Ball, University of Michigan

Gail Burrill, Past President, National Council of Teachers of Mathematics

Hyman Bass, University of Michigan

Kara Suzuka, Mathematical Sciences Education Board

OVERVIEW OF THURSDAY AFTERNOON, FEBRUARY 9, 2017

	1:00 PM - 1:45 PM	2:00 PM - 3:00 PM
Ballroom B	18. <i>Implementation of CCSS-M in K-8 Classrooms: Implications for Teacher Education and Professional Development-</i> Bay-Williams	33. <i>Integrating the NCTM Effective Mathematics Teaching Practices and edTPA Into Secondary Mathematics Teacher Preparation-</i> Steele
Salon 1	19. <i>Re-Thinking Teaching and Learning: Moving Mathematics Education Online-</i> Friel & Fede	34. <i>The Impact of a Multi-Institutional Study on the Activities Used in Preservice Elementary Methods Courses-</i> Shih, Diamond, & Kalinec-Craig
Salon 2	20. <i>Preservice Teachers' Emerging Capacity to Reason With the Variable Parts Perspective on Proportional Relationships-</i> Kulow	35. <i>Using Digital Storytelling in an Undergraduate Mathematics Methods Course-</i> Edgington & Faulkner
Salon 3	21. <i>Building Our Collective Capacity by Reclaiming Joy in Mathematics Teacher Education-</i> McCloskey, Kastberg, & Harkness	36. <i>Learning to Lead Mathematics Discussions in Practice-Focused Professional Development-</i> Webb, Wilson, Duggan, & Bryant
Salon 4	31. <i>Strategies for Preparing Teachers of Mathematics Who Understand and Address Issues of Equity and Access-</i> Yeh, Ellis, Morton, & Yow	
Salon 5	32. <i>Preparing Teachers of Mathematics for the Realities of Technology in the Classroom-</i> Swartz, Wheeler, Rhine, Wieman, Powell, & Lee	
Salon 6	22. <i>Brief Report Session: Understanding Mathematics Teacher Educators-</i> Patterson, Vallines Mira, Prasad, & Rino	37. <i>Brief Report Session: Focus on Elementary-</i> Bolyard, Valentine, Webel, Sheffel, Conner, Cross Francis, & Hong
Salon 7	23. <i>Brief Report Session: School and University Partnerships and Projects-</i> Lynch & Lloyd	38. <i>Brief Report Session: Proportional Reasoning in Middle Grades-</i> Olmez, Khoury, Murawska, Burke, Orrill, Nagar, Weiland, & Brown
Salon 8	24. <i>Developing a Video-Based Instructional Module About Students' Functional Reasoning-</i> Cavey & Libberton	39. <i>Writing a Successful MTE Manuscript: Connecting Practice, Innovation, and Systematic Inquiry-</i> Crespo, Bieda, & Browning
Salon 9	25. <i>Understanding (Im)proper Fractions as Measures: The Role of Representation-</i> Moss, Stevens, Lovin, Siegfried, Busi, & Boyce	40. <i>Lesson Observation Research in an NSF-Funded Noyce Master Teaching Fellow/Teaching Fellow Project-</i> Madden & Ericson
Salon 10	26. <i>Elementary Mathematics Teacher Leadership: Opportunities for Professional Learning-</i> Stump, Berry, Frost, & Mohr	41. <i>The Development of Specialized Content Knowledge in Beginning Algebra Among Secondary Mathematics Preservice Teachers-</i> Pettry & Arnold
Salon 11	27. <i>Whiteness in Mathematics Teacher Education: Supporting Preservice Teachers in Noticing and Challenging Whiteness in Classrooms-</i> Battey	42. <i>Identifying and Explaining Impactful Experiences and Activities in Mathematics Methods Courses-</i> Myers, Edwards, Kirwan, & Sanchez
Salon 12	28. <i>Exploring the Relationship Between Teachers' Knowledge and Beliefs-</i> Hu, Son, & Hodge	43. <i>Novice Elementary Teachers' Orchestration of Mathematical Discourse-</i> Lee & Walkowiak
Salon 13	29. <i>Unpacking Students' Perceptions of Mathematical Functions to Address Preservice Teachers' Expert Blind Spots-</i> Kenney	44. <i>Exploring Learner-Focused Collaborative Mathematics Planning-</i> Murray & White
Salon 14	30. <i>Teacher Voices: What They Might Contribute to the Professional Dialogue About Learning and Teaching Mathematics-</i> Richardson	45. <i>Using Students' Misconceptions as a Source for Rich Mathematical Discourse-</i> Sears & Dupree

	3:30 PM - 4:15 PM	4:30 PM - 5:30 PM
Ballroom B	46. <i>Empowerment through Access and Equity</i> - Larson	61. <i>What Does Linking Research and Practice Really Mean?</i> - Arbaugh
Salon 1	47. <i>Mathematics Instructional Technology: The New Methods Course Responsibility</i> - Herrelko	62. <i>What Do Mathematics Specialists/Coaches/Teacher Leaders Need to Know in Order to Fulfill Their Professional Responsibilities?</i> - Bitto
Salon 2	48. <i>The Historical Development of Geometry as a Tool to Examine the Transition Problem</i> - Clark & Witzke	63. <i>Increasing STEM Literacy of Preservice and Inservice Teachers via an Informal Learning Environment</i> - Schroeder, Jackson, Cavalcanti, & Delaney
Salon 3	49. <i>Math Teacher Talks in Secondary Mathematics Teacher Preparation</i> - Powers & Seehausen	64. <i>Practices to Sustain Socio-Mathematical Norms in Mathematics Courses for PSTs</i> - Rathouz
Salon 4	50. <i>Screencasting as a Tool to Create Records of Authentic Problem Solving Practice</i> - Cox & Harper	65. <i>Investigating Pedagogies of Practice That Support Novices' Responding to Student Errors During Classroom Discussion</i> - Campbell, Baldinger, & Selling
Salon 5	51. <i>Using Preservice Teacher Designed Video Lessons to Promote Conceptual Understanding and Collaboration with Middle Grades Students</i> - Appelgate	66. <i>How Does Focused Video Analysis in Methods Courses Impact Student Teachers' Attending to Student Thinking?</i> - Teuscher & Switzer
Salon 6	52. <i>Brief Report Session: Mathematics Education Policy and Program Issues</i> - Ashby, Litster, MacDonald, & Hovermill	67. <i>Brief Report Session: Teacher Learning</i> - Koehne, Namakshi, Warshauer, Cardon, Sharpe, Kochmanski, & Bhattacharyya
Salon 7	53. <i>Brief Report Session: Equity and Students</i> - Vomvoridi-Ivanovic & Galanti	68. <i>Brief Report Session: Secondary Teacher PD</i> - Whitaker, Gonzalez, & Marynowski
Salon 8	54. <i>Examining Elementary Teachers' Co-Teaching Experiences</i> - Cross Francis, Hudson, & Rapacki	69. <i>Explore the Power of Manipulatives in Modern Mathematics Classrooms</i> - Michmerhuizen
Salon 9	55. <i>Preservice Teachers' Reflection as Genre</i> - Kuleshova	70. <i>Funds of Knowledge and "Critical Tasks" in Elementary Mathematics PST Preparation: A Robust Approach</i> - Myers
Salon 10	56. <i>Examining the Activity and Impact of Elementary Mathematics Coaches on Student Achievement in Rural Schools</i> - Campbell & Griffin	71. <i>Exploring #MTBoS: Preservice Teachers' Engagement With the MathTwitterBlogosphere Through and Beyond a Mathematics Methods Course</i> - Litke & Jansen
Salon 11	57. <i>Promoting Learning by Leveraging Contrasting Cases: Helping Preservice Teachers and Students Make Use of Structure</i> - Bofferding, Aqazade, & Farmer	72. <i>The Implementation of a Collaborative Mathematics Tutoring Model in the Preparation of Future Teachers</i> - Keiser & Watt
Salon 12	58. <i>Refining the Work of Unpacking Preservice Teachers' Algorithmic Strategies for Multi-Digit Addition Problems</i> - Kalinec-Craig & Prasad	73. <i>Investigating Prospective Teachers' Evaluations of Children's Temperature Stories</i> - Olanoff, Wessman-Enzinger, & Tobias
Salon 13	59. <i>A Rubric for the Mathematics Methods Assignments of Teacher Educators</i> - Bartell & Drake	74. <i>Comparing and Contrasting Frameworks That Inform Our Practice</i> - Lynch-Davis & Dean
Salon 14	60. <i>Learning About Equity in Secondary Mathematics Teacher Education Programs</i> - Mintos, Hoffman, & Newton	75. <i>Individual and Collective Capacities: Strengthening Affiliates to Become Stronger Advocates</i> - Lee, Salinas, Miller, Sjostrom, Evitts, & Burton

Session 18

*Mathematics Education Policy and Program Issues
Individual Session*

Ballroom B

IMPLEMENTATION OF CCSS-M IN K-8 CLASSROOMS: IMPLICATIONS FOR TEACHER EDUCATION AND PROFESSIONAL DEVELOPMENT

Jennifer Bay-Williams, University of Louisville

We will review findings from a national study of 1000 K-8 CCSS-Mathematics teachers, focusing on their interpretation, implementation, and perceived benefits and concerns. We will discuss implications for teacher preparation and professional development and next iteration of common standards.

Session 19

*Teacher Professional Development
Individual Session*

Salon 1

RE-THINKING TEACHING AND LEARNING: MOVING MATHEMATICS EDUCATION ONLINE

Susan N Friel, University of North Carolina, Chapel Hill
Bryan Fede, University of North Carolina, Chapel Hill

What does it mean to provide instruction in an online distance-learning environment? This session will address efforts to review literature in online distance education and mathematics education related to course design and implementation and to explore guidelines for mathematics/mathematics education.

Session 20

*Mathematics Content, Processes, and Practices
Individual Session*

Salon 2

PRESERVICE TEACHERS' EMERGING CAPACITY TO REASON WITH THE VARIABLE PARTS PERSPECTIVE ON PROPORTIONAL RELATIONSHIPS

Torrey Kulow, University of Georgia

During this session, we will present results of analyzing class discussions and written work that preservice middle grades and secondary teachers generated as they learned about and used this perspective on proportional relationships in mathematics content courses.

Session 21

*Development of Mathematics Teacher Educators
Individual Session*

Salon 3

BUILDING OUR COLLECTIVE CAPACITY BY RECLAIMING JOY IN MATHEMATICS TEACHER EDUCATION

Andrea McCloskey, Pennsylvania State University
Signe Kastberg, Purdue University
Marshella Sheats Harkness, University of Cincinnati

We share results from a collaborative self-study as "critical friends." We argue and illustrate findings that a turn toward moments of joy, connection, and success enlivened and energized us. The field of mathematics teacher education may benefit from similar reorientations.

Session 22

Development of Mathematics Teacher Educators

Salon 6

BRIEF REPORT SESSION: UNDERSTANDING MATHEMATICS TEACHER EDUCATORS

STUDYING OURSELVES AS WE IMPROVE OUR TEACHING

Priya Vinata Prasad, University of Texas, San Antonio
Raquel Vallines Mira, University of Texas, San Antonio
Cody Patterson, University of Texas, San Antonio

This session presents a self-study of MTEs to better understand the MKT needed to design, facilitate, and revise tasks for a mathematics content course for elementary PSTs. This study is part of a larger project using the Continuous Improvement framework.

UNDERSTANDING BELIEFS COMMONLY HELD BY MATHEMATICS TEACHER EDUCATORS AND THE DIFFERENT WAYS THEY HOLD THEM

Joseph Rino, Plymouth State University

This study explored the beliefs held by mathematics teacher educators about their craft. While five beliefs were found among nearly all participants, the different ways in which participants discussed those beliefs demonstrates some of the complexity of teaching mathematics teaching.

Session 23

School and University Partnerships and Projects

Salon 7

BRIEF REPORT SESSION: SCHOOL AND UNIVERSITY PARTNERSHIPS AND PROJECTS

DUOETHNOGRAPHY OF MATHEMATICS SUPERVISION IN A PROFESSIONAL DEVELOPMENT SCHOOL

Gwendolyn Lloyd, Pennsylvania State University

I will report about a collaborative self-study of teacher educators working in an established PDS partnership. The study took a duoethnographic approach and focused on elementary PDS supervisors' practices of observing student teachers' mathematics lessons.

THE ROLE OF EXPERTISE IN COLLABORATIVE PLANNING FOR A MATHEMATICS METHODS COURSE

Courtney Lynch, Pennsylvania State University

In this session, I share findings from a qualitative study that aimed to explore the expertise that a team of school- and university-based teacher educators drew upon in their co-planning for an elementary mathematics methods course in a PDS partnership.

Session 24 <i>Mathematics Pedagogy and Instructional Practice</i> <i>Individual Session</i> DEVELOPING A VIDEO-BASED INSTRUCTIONAL MODULE ABOUT STUDENTS' FUNCTIONAL REASONING Laurie Cavey, Boise State University Jason Libberton, Idaho State University <p>We will share the development of a video-based instructional module designed to engage preservice and inservice secondary teachers in learning about students' functional reasoning. Come try it out, offer feedback, and learn about our iterative development process.</p>	Salon 8	Session 27 <i>Equity and Mathematics Education</i> <i>Individual Session</i> WHITENESS IN MATHEMATICS TEACHER EDUCATION: SUPPORTING PRESERVICE TEACHERS IN NOTICING AND CHALLENGING WHITENESS IN CLASSROOMS Dan Battey, Rutgers University <p>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.</p>	Salon 11
Session 25 <i>Mathematics Content, Processes, and Practices</i> <i>Individual Session</i> UNDERSTANDING (IM)PROPER FRACTIONS AS MEASURES: THE ROLE OF REPRESENTATION Steven Boyce, Portland State University Diana Moss, Appalachian State University Alexis Stevens, James Madison University LouAnn Lovin, James Madison University John (Zig) Siegfried, James Madison University Rich Busi, James Madison University <p>We report on results of researching relationships between representations used in fractions tasks, prospective teachers' conceptions of (proper and improper) fractions, and prospective teachers' perceptions of task difficulty. Participants will discuss how the results relate to their teaching experiences.</p>	Salon 9	Session 28 <i>Mathematics Content, Processes, and Practices</i> <i>Individual Session</i> EXPLORING THE RELATIONSHIP BETWEEN TEACHERS' KNOWLEDGE AND BELIEFS Qintong Hu, Columbia College Ji-Won Son, University at Buffalo, State University of New York Lynn Hodge, University of Tennessee <p>This study examines high school teachers' knowledge of quadratic functions and their beliefs about students' mathematical learning abilities. Findings of the study indicate that teachers with entity beliefs about students' learning abilities tend to show procedural understandings of the topic.</p>	Salon 12
Session 26 <i>Teacher Professional Development</i> <i>Individual Session</i> ELEMENTARY MATHEMATICS TEACHER LEADERSHIP: OPPORTUNITIES FOR PROFESSIONAL LEARNING Sheryl Stump, Ball State University Betsy Berry, Hoosier Association of Mathematics Teacher Educators Jodi Frost, Indiana State University Doris Mohr, University of Southern Indiana <p>We describe the evolution of our work, as a task force of an AMTE affiliate, to investigate and support mathematics teacher leadership. Through case studies, we examine various models of leadership and opportunities for mathematics professional learning in those models.</p>	Salon 10	Session 29 <i>Mathematics Pedagogy and Instructional Practice</i> <i>Individual Session</i> UNPACKING STUDENTS' PERCEPTIONS OF MATHEMATICAL FUNCTIONS TO ADDRESS PRESERVICE TEACHERS' EXPERT BLIND SPOTS Rachael Kenney, Purdue University <p>In this study, we examine writing prompts to unpack what understanding of mathematical functions persists with college algebra students. We discuss how activities like this provide ways for novice teachers to reflect on students' knowledge and develop pedagogical content knowledge.</p>	Salon 13
		Session 30 <i>Teacher Professional Development</i> <i>Individual Session</i> TEACHER VOICES: WHAT THEY MIGHT CONTRIBUTE TO THE PROFESSIONAL DIALOGUE ABOUT LEARNING AND TEACHING MATHEMATICS Sue Ellen Richardson, Purdue University <p>This session explores how teacher voices might contribute to the professional dialogue on learning and teaching mathematics using narrative inquiry and Photovoice methods, particularly as a foundation for a teacher-led professional development model that supports teacher leadership.</p>	Salon 14

Session 31

*Equity and Mathematics Education
Extended Session*

Salon 4

STRATEGIES FOR PREPARING TEACHERS OF MATHEMATICS WHO UNDERSTAND AND ADDRESS ISSUES OF EQUITY AND ACCESS

Cathery Yeh, Chapman University
Mark Ellis, California State University, Fullerton
Crystal Morton, Indiana University, Indianapolis
Jan Yow, University of South Carolina

We will share and discuss instructional modules in methods courses intended to develop within teachers the knowledge, skills, and dispositions needed to envision, construct, and nurture mathematics learning environments that include close attention to access, equity, power, and identity.

Session 32

*Teaching and Learning with Technology
Extended Session*

Salon 5

PREPARING TEACHERS OF MATHEMATICS FOR THE REALITIES OF TECHNOLOGY IN THE CLASSROOM

Barbara Swartz, McDaniel College
Ann Wheeler, Texas Woman's University
Steve Rhine, Pacific University
Rob Wieman, Rowan University
Angeline Powell, University of Memphis
Mi Yeon Lee, Arizona State University

Mathematics teacher educators may struggle to help teachers who are required by their districts to utilize new technological advances. Participants will explore technologies commonly used in P-12 classrooms and learn how to use them to promote rich discourse and metacognition.

Session 33

*Mathematics Education Policy and Program Issues
Individual Session*

Ballroom B

INTEGRATING THE NCTM EFFECTIVE MATHEMATICS TEACHING PRACTICES AND EDTPA INTO SECONDARY MATHEMATICS TEACHER PREPARATION

Mike Steele, University of Wisconsin, Milwaukee

This session describes one program's efforts to integrate the NCTM effective mathematics teaching practices and edTPA preparation and support into secondary methods and student teaching seminar courses. Data on teacher candidates' instructional practice and edTPA examples will be shared.

Session 35

*Mathematics Content, Processes, and Practices
Individual Session*

Salon 2

USING DIGITAL STORYTELLING IN AN UNDERGRADUATE MATHEMATICS METHODS COURSE

Cyndi Edgington, North Carolina State University
Valerie Faulkner, North Carolina State University

We share a project developed for an undergraduate methods course for secondary math teachers focused on developing teacher candidates' understanding of the teaching and learning of linear functions with the end product being digital stories created by the teacher candidates.

Session 34

*Mathematics Pedagogy and Instructional Practice
Individual Session*

Salon 1

THE IMPACT OF A MULTI-INSTITUTIONAL STUDY ON THE ACTIVITIES USED IN PRESERVICE ELEMENTARY METHODS COURSES

Jaime Marie Diamond, University of Georgia
Crystal Anne Kalinec-Craig, University of Texas, San Antonio
Jeffrey Shih, University of Nevada, Las Vegas

The session will discuss how three mathematics teacher educators used a video clip in order to examine what preservice teachers noticed about children's mathematical thinking and what the instructors learned about their vision for teaching elementary mathematics methods.

Session 36

*Teacher Professional Development
Individual Session*

Salon 3

LEARNING TO LEAD MATHEMATICS DISCUSSIONS IN PRACTICE-FOCUSED PROFESSIONAL DEVELOPMENT

Jared Webb, University of North Carolina, Greensboro
Holt Wilson, University of North Carolina, Greensboro
Arren Duggan, University of North Carolina, Greensboro
Emily Bryant, University of North Carolina, Greensboro

In this session, we share results from a study of secondary teachers' participation in rehearsals for leading mathematics discussions in professional development and shifts in their classroom practice.

BRIEF REPORT SESSION: FOCUS ON ELEMENTARY EMOTIONS AND MKT: IDENTIFYING EMOTIONS AS A POSSIBLE DETERRENT TO TEACHER CHANGE

Dionne Cross Francis, Indiana University, Bloomington
Ji Hong, University of Oklahoma

In this study, we explore the relationship between elementary teachers' mathematical knowledge for teaching and their emotional experiences related to their mathematics teaching. We discuss the role of emotions in teachers' propensity to change their mathematical instructional practices.

LEADERSHIP FROM WITHIN THE CLASSROOM: CHALLENGES AND SUCCESSES FOR ELEMENTARY MATHEMATICS SPECIALISTS

Kimberly Conner, University of Missouri
Cris Sheffel, University of Missouri
Corey Webel, University of Missouri

This session will present preliminary data on ways in which five elementary mathematics specialists (EMS) engaged in informal and formal leadership while maintaining their role as a classroom teacher. Implications for leadership development in EMS certification programs will be discussed.

THE GOOD, BAD, AND COMPLEX: UNDERSTANDING AND LEVERAGING ELEMENTARY PRESERVICE TEACHERS' MATHEMATICS EXPERIENCES

Keri Duncan Valentine, West Virginia University
Johnna Bolyard, West Virginia University

This brief report seeks to share preservice teachers' experiences learning mathematics (both positively and negatively perceived, in formal and informal contexts) and how these experiences can be leveraged in the context of undergraduate and graduate mathematics pedagogy and content courses.

BRIEF REPORT SESSION: PROPORTIONAL REASONING IN MIDDLE GRADES

FUTURE TEACHERS' USE OF THE DEFINITION OF MULTIPLICATION WHEN INTERPRETING "STANDARD" PROPORTION EQUATIONS

Ibrahim Burak Olmez, University of Georgia

The present study examines how five future middle grades mathematics teachers generated and interpreted proportion equations in terms of quantities, especially when they were prompted to consider an explicit, quantitative definition of multiplication.

PRESERVICE TEACHERS' COORDINATION OF RATIO CONSTRUCTS WITHIN A RATIONAL NUMBER TASK

Jaclyn Murawska, Saint Xavier University
Helen Adi Khoury, Northern Illinois University

This research study investigated solution strategies implemented by preservice teachers in a problem-solving ratio situation. Valid and non-valid strategies in the context of proportional reasoning, ratio constructs, covariation, invariance, symbolism, and part-part-whole understanding will be shared.

USEFUL KNOWLEDGE RESOURCES FOR THE TEACHING OF PROPORTIONAL REASONING

Rachael Eriksen Brown, Penn State, Abington
Travis Weiland, University of Massachusetts, Dartmouth
Gal Gili Nagar, University of Massachusetts, Dartmouth
Chandra Hawley Orrill, University of Massachusetts, Dartmouth
James Patrick Burke, University of Massachusetts, Dartmouth

We share our investigation of proportional reasoning knowledge resources used by middle grades teachers in two task-based interviews compared to their performance on the LMT. Based on the findings, we offer suggestions for teaching proportional reasoning to preservice and inservice teachers.

WRITING A SUCCESSFUL MTE MANUSCRIPT: CONNECTING PRACTICE, INNOVATION, AND SYSTEMATIC INQUIRY

Sandra Crespo, Michigan State University
Kristen Bieda, Michigan State University
Christine Browning, Western Michigan University

Participants will engage in tasks that highlight features and expectations of accepted manuscripts for the *Mathematics Teacher Educator*. Recurrent issues of rejected submissions, strategies to avoid these pitfalls, and a tool to facilitate the manuscript development will be shared.

Session 40 <i>School and University Partnerships and Projects</i> <i>Individual Session</i> LESSON OBSERVATION RESEARCH IN AN NSF-FUNDED NOYCE MASTER TEACHING FELLOW/TEACHING FELLOW PROJECT Sandra Madden, University of Massachusetts, Amherst Jennifer Ericson, University of Massachusetts, Amherst Classroom lesson observations of mathematics master teaching fellows, teaching fellows, and their peers in high needs schools were conducted using an observation protocol from the Science & Mathematics Program Improvement group (Western Michigan University). Findings, challenges, and implications are discussed.	Salon 9	Session 43 <i>Mathematics Pedagogy and Instructional Practice</i> <i>Individual Session</i> NOVICE ELEMENTARY TEACHERS' ORCHESTRATION OF MATHEMATICAL DISCOURSE Carrie Lee, East Carolina University Temple A. Walkowiak, North Carolina State University This session will share patterns from the coding of classroom discussions, engage participants in an analysis of a novice teacher's classroom discussion, and discuss how methods courses/induction programs might support novice teachers to utilize moves that enhance the positioning of students.	Salon 12
Session 41 <i>Mathematics Content, Processes, and Practices</i> <i>Discussion Session</i> THE DEVELOPMENT OF SPECIALIZED CONTENT KNOWLEDGE IN BEGINNING ALGEBRA AMONG SECONDARY MATHEMATICS PRESERVICE TEACHERS Danielle Pettry, Montana State University Elizabeth Arnold, Montana State University This session focuses on the findings of a dissertation. Forty-six participants in six teacher preparation programs completed a 22 item multiple choice assessment, and 23 of those participants were interviewed about how their experiences helped them develop specialized content knowledge.	Salon 10	Session 44 <i>Teacher Professional Development</i> <i>Individual Session</i> EXPLORING LEARNER-FOCUSED COLLABORATIVE MATHEMATICS PLANNING Eileen Murray, Montclair State University Dorothy Y White, University of Georgia This session presents research on an emerging model of collaborative planning. In this model, teachers support students' mathematical thinking during planning as they collaboratively focus on mathematics and curriculum while addressing students as learners.	Salon 13
Session 42 <i>Development of Mathematics Teacher Educators</i> <i>Individual Session</i> IDENTIFYING AND EXPLAINING IMPACTFUL EXPERIENCES AND ACTIVITIES IN MATHEMATICS METHODS COURSES J Vince Kirwan, Kennesaw State University Wendy B Sanchez, Kennesaw State University Marrielle Myers, Kennesaw State University Belinda Pickett Edwards, Kennesaw State University Attendees will discuss experiences/activities from methods coursework prospective teachers identified as having an effect on their thinking about teaching mathematics. They will also consider potential impacts of their own practices in methods courses on prospective teachers' thinking and teaching practice.	Salon 11	Session 45 <i>Mathematics Pedagogy and Instructional Practice</i> <i>Individual Session</i> USING STUDENTS' MISCONCEPTIONS AS A SOURCE FOR RICH MATHEMATICAL DISCOURSE Ruthmae Sears, University of South Florida Lakesia L. Dupree, University of South Florida We will discuss how we used middle school students' misconceptions to orchestrate mathematical discourse, encouraged reasoning, and promoted learning within a methods course. Additionally, we will discuss how preservice teachers' beliefs influenced the extent they capitalized on students' misconceptions.	Salon 14

Session 46

*NCTM Presidential Exchange Session
Individual Session*

Ballroom B**EMPOWERMENT THROUGH ACCESS AND EQUITY**

Matt Larson, National Council of Teachers of Mathematics

NCTM embraces the challenge that as educators we must do more to serve students who have been marginalized. We will address our need to consider our discourse, collaboration, and shared actions to challenge the status quo and structural obstacles.

Session 47

*Teaching and Learning with Technology
Individual Session*

Salon 1**MATHEMATICS INSTRUCTIONAL TECHNOLOGY: THE NEW METHODS COURSE RESPONSIBILITY**

Janet M. Herrelko, University of Dayton

How well do preservice teachers integrate mathematical technology into their field classes? A methods course introduced six mathematical programs from which the preservice teachers chose one around which they created lessons to solve real world problems.

Session 48

*Mathematics Content, Processes, and Practices
Individual Session*

Salon 2**THE HISTORICAL DEVELOPMENT OF GEOMETRY AS A TOOL TO EXAMINE THE TRANSITION PROBLEM**

Kathleen Clark, Florida State University
Ingo Witzke, University of Siegen, Germany

We describe a case study of a seminar designed to address the transition from school to university mathematics. The seminar relied on the thesis that broaching differing natures of school and university mathematics will support students during the transition.

Session 49

*Mathematics Pedagogy and Instructional Practice
Individual Session*

Salon 3**MATH TEACHER TALKS IN SECONDARY MATHEMATICS TEACHER PREPARATION**

Alees Seehausen, University of Northern Colorado
Robert Powers, University of Northern Colorado

This session describes, demonstrates, and examines Math Teacher Talks, one feature of a secondary mathematics teacher education program. During Math Teacher Talks, teacher candidates enact high-leverage practices in a mock classroom and discuss the practices and experiences of the enactment.

Session 50

*Teaching and Learning with Technology
Individual Session*

Salon 4**SCREENCASTING AS A TOOL TO CREATE RECORDS OF AUTHENTIC PROBLEM SOLVING PRACTICE**

Dana C Cox, Miami University
Suzanne Harper, Miami University

This presentation will help bridge practice and research for mathematics teacher educators. We will explore how we use screencasting to inspire and capture moments of authentic problem solving and problem posing, and the potential for those screencasts for cognitive reflection.

Session 51

*Teaching and Learning with Technology
Individual Session*

Salon 5**USING PRESERVICE TEACHER DESIGNED VIDEO LESSONS TO PROMOTE CONCEPTUAL UNDERSTANDING AND COLLABORATION WITH MIDDLE GRADES STUDENTS**

Mollie Appelgate, Iowa State University

This session examines how preservice teachers designed video lessons that promoted conceptual understanding and collaboration to deepen students' mathematical understanding. Session participants will view PST-designed video lessons, learn about software options, and utilize a framework to analyze the video lessons.

Session 52

Mathematics Education Policy and Program Issues

Salon 6**BRIEF REPORT SESSION: MATHEMATICS EDUCATION POLICY AND PROGRAM ISSUES****INTEGRATING CONTENT, PEDAGOGY, AND REFLECTIVE PRACTICE WITHIN A DISTANCE LEARNING CAEP-APPROVED ADVANCED PROGRAM**

Jeffrey Hovermill, Northern Arizona University

This session describes the content and structure of courses within a CAEP-approved Advanced Program. Examples of course tasks and assignments, along with candidate work samples, will be shared and discussed.

MEASURING ELEMENTARY PRESERVICE TEACHERS' BELIEFS AS RELATED TO THEIR INTENDED PEDAGOGY

Beth Loveday MacDonald, Utah State University
Kristy Litster, Utah State University
Jill Ashby, Utah State University

The purpose of this brief presentation is to discuss findings from a survey given to 57 preservice teachers to investigate teachers' beliefs and course/program design prior to the implementation of two additional mathematics education courses.

Session 53 **Salon 7***Equity and Mathematics Education***BRIEF REPORT SESSION: EQUITY AND STUDENTS****ACCELERATION OF ALGEBRA I: PERSISTENT INEQUITIES IN READINESS FOR STEM UNDERGRADUATE STUDY**

Terrie Galanti, George Mason University

Access to Algebra I in middle school is intended to promote equity in STEM readiness. This presentation explores the hidden potential of acceleration to undermine achievement and identity, to reify existing societal power structures, and to devalue meaningful mathematics experiences.

RESOLVING CHALLENGES THAT MATHEMATICS TEACHER EDUCATORS FACE WHEN TEACHING THROUGH A LENS OF EQUITY

Eugenia Vomvoridi-Ivanovic, University of South Florida

The purpose of this session is to present different ways in which mathematics teacher educators may resolve a challenge when teaching through a lens of equity. Preservice teachers' responses to the different resolution strategies will be examined.

Session 54 **Salon 8***Teacher Professional Development**Individual Session***EXAMINING ELEMENTARY TEACHERS' CO-TEACHING EXPERIENCES**

Dionne Cross Francis, Indiana University, Bloomington

Rick A. Hudson, University of Southern Indiana

Lauren Rapacki, Indiana University

In this presentation, we describe the co-teaching experiences of three pairs of elementary teachers using different co-teaching models and engage participants in discussing the ways co-teaching can both support and hinder quality teaching.

Session 55 **Salon 9***Preservice Teacher Field Experiences**Individual Session***PRESERVICE TEACHERS' REFLECTION AS GENRE**

Angelina Kuleshova, Florida State University

In this presentation, I will outline reflection as a genre model, present genre-based characteristics of high-quality reflective writing, and suggest how the framework of genre could be used to improve preservice teachers' reflection on their practice.

Session 56 **Salon 10***Teacher Professional Development**Individual Session***EXAMINING THE ACTIVITY AND IMPACT OF ELEMENTARY MATHEMATICS COACHES ON STUDENT ACHIEVEMENT IN RURAL SCHOOLS**

Patricia F Campbell, University of Maryland

Matt Griffin, University of Maryland

This session presents the results of a randomized control-treatment study examining the relationship between student achievement and the level/focus of mathematics coaching activity. The coaches were placed in rural elementary schools to provide professional development addressing mathematical content and pedagogy.

Session 57 **Salon 11***Mathematics Pedagogy and Instructional Practice**Individual Session***PROMOTING LEARNING BY LEVERAGING CONTRASTING CASES: HELPING PRESERVICE TEACHERS AND STUDENTS MAKE USE OF STRUCTURE**

Laura Bofferding, Purdue University

Mahtob Aqazade, Purdue University

Sherri Farmer, Purdue University

We present a case for the use of contrasting cases as an effective pedagogical routine that can help students notice and make use of structure in problems and can help preservice teachers think strategically about the problems they pose.

Session 58 **Salon 12***Mathematics Content, Processes, and Practices**Individual Session***REFINING THE WORK OF UNPACKING PRESERVICE TEACHERS' ALGORITHMIC STRATEGIES FOR MULTI-DIGIT ADDITION PROBLEMS**

Crystal Anne Kalinec-Craig, University of Texas, San Antonio

Priya Vinata Prasad, University of Texas, San Antonio

The audience will explore an updated framework that unpacks preservice teachers' algorithmic strategies, which also include a diverse range of conceptual strategies. The presenters will discuss the importance of selecting numbers for mathematical tasks when eliciting conceptual and algorithmic strategies.

Session 59 **Salon 13***Development of Mathematics Teacher Educators**Individual Session***A RUBRIC FOR THE MATHEMATICS METHODS ASSIGNMENTS OF TEACHER EDUCATORS**

Tonya Bartell, Michigan State University

Corey Drake, Michigan State University

Participants will communicate and collaborate about ways a rubric for mathematics teacher educators' elementary mathematics methods assignments might support the professional growth of mathematics teacher educators and the identification of key elements important for developing beginning elementary mathematics teachers.

Session 60 **Salon 14***Equity and Mathematics Education**Individual Session***LEARNING ABOUT EQUITY IN SECONDARY MATHEMATICS TEACHER EDUCATION PROGRAMS**

Alexia Mintos, Purdue University

Andrew Hoffman, Purdue University

Jill Newton, Purdue University

In this session, we will present findings from a completed study about the reported opportunities that preservice secondary mathematics teachers have to learn about equity in five purposefully chosen teacher education programs.

Session 61

*2017 Award for Excellence in Scholarship Winner
Individual Session*

Ballroom B**WHAT DOES LINKING RESEARCH AND PRACTICE REALLY MEAN?**

Fran Arbaugh, The Pennsylvania State University

In this session, small and large group discussions will center on expanding participants' conceptions of linking research and practice. Participants will be challenged to enhance the ways they link research and practice in their research agendas and teacher education practices.

Session 62

*Development of Mathematics Teacher Educators
Individual Session*

Salon 1**WHAT DO MATHEMATICS SPECIALISTS / COACHES / TEACHER LEADERS NEED TO KNOW IN ORDER TO FULFILL THEIR PROFESSIONAL RESPONSIBILITIES?**

Laura Bitto, The College of William and Mary

Results of a grounded theory study indicate that mathematics specialists/coaches/leaders use a specialized blend of mathematics content, pedagogical, and leadership knowledge. A graphical model that identifies the knowledge domains and their interconnectedness will be presented and discussed.

Session 63

*Mathematics Pedagogy and Instructional Practice
Individual Session*

Salon 2**INCREASING STEM LITERACY OF PRESERVICE AND INSERVICE TEACHERS VIA AN INFORMAL LEARNING ENVIRONMENT**

Margaret J Schroeder, University of Kentucky
Christa Jackson, Iowa State University
Maureen L. Cavalcanti, University of Kentucky
Ashley Delaney, Iowa State University

We examine how a robotics course that integrates informal learning experiences increases teachers' exposure to a variety of STEM learning activities and impacts their STEM literacy. We'll experience hands-on activities related to mathematics and increasing STEM literacy in this session.

Session 64

*Mathematics Content, Processes, and Practices
Individual Session*

Salon 3**PRACTICES TO SUSTAIN SOCIO-MATHEMATICAL NORMS IN MATHEMATICS COURSES FOR PSTS**

Margaret Rathouz, University of Michigan, Dearborn

We will present instructional practices used by an experienced mathematics educator to extend and leverage socio-mathematical norms in mathematics courses for prospective teachers. Video examples will illustrate instructor practices that support PSTs in justifying mathematical ideas and making relevant connections.

Session 65

*Mathematics Pedagogy and Instructional Practice
Individual Session*

Salon 4**INVESTIGATING PEDAGOGIES OF PRACTICE THAT SUPPORT NOVICES' RESPONDING TO STUDENT ERRORS DURING CLASSROOM DISCUSSION**

Matthew P. Campbell, West Virginia University
Erin E. Baldinger, University of Minnesota
Sarah Kate Selling, University of Utah

Responding to student errors during discussions in ways that position students as sense-makers and advance the class's learning is vital. This session addresses ways coached rehearsals and enactments support novices' error-handling practices as well as methods for tracing novices' development.

Session 66

*Mathematics Pedagogy and Instructional Practice
Individual Session*

Salon 5**HOW DOES FOCUSED VIDEO ANALYSIS IN METHODS COURSES IMPACT STUDENT TEACHERS' ATTENDING TO STUDENT THINKING?**

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

We share results from our analysis of our preservice secondary mathematics teachers' student teaching videos to demonstrate the impact of focused video analysis and discuss differences in the degree to which the student teachers were attentive to probing students' thinking.

BRIEF REPORT SESSION: TEACHER LEARNING**FOCUSING PRESERVICE TEACHER NOTICING TOWARDS PRODUCTIVE STRUGGLE**

Hiroko Kawaguchi Warshauer, Texas State University
 Nama Namakshi, University of Arkansas
 Christina Zunker Koehne, Texas State University
 Sonalee Bhattacharyya, Texas State University

We report on the development of preservice teachers' noticing of productive struggle while participating in a professional development associated with a mathematics camp for elementary and middle school students. Results suggest PSTs begin considering ways to support student struggles productively.

GENERATIVE LEARNING THROUGH REFLECTION ON EARLY FIELD EXPERIENCES

Aimee Cardon, University of Wisconsin, Madison

Findings from a small-scale qualitative study on the reflective writings of preservice teachers show that early field experiences can be structured to support learning from practice. Participants generated specific ideas for improvement and causal relationships within their practice.

TEACHING STEPPING STONES: LEARNING TO TEACH ELEMENTARY MATHEMATICS THROUGH A MEDIATED FIELD EXPERIENCE

Nicholas Kochmanski, Vanderbilt University
 Charlotte Dunlap Sharpe, Syracuse University

This session reports initial findings from a design-based research pilot of a four-week mediated field experience. In this session we share how the mediated field experience oriented preservice teachers to critical aspects of student thinking and teaching practices.

BRIEF REPORT SESSION: SECONDARY TEACHER PD**HOW MATHEMATICS TEACHERS BECAME EXEMPLARY STATISTICS TEACHERS**

Douglas Whitaker, University of Wisconsin, Stout

This study investigated how exemplary statistics teachers—who began their careers as mathematics teachers—came to be. Using semi-structured interviews and a theoretical framework based on identity, key experiences that supported teachers' development were identified, e.g. isolation and community engagement.

SUPPORTING GEOMETRY TEACHERS' IMPLEMENTATION OF COMMON CORE THROUGH A COMBINED PROFESSIONAL DEVELOPMENT MODEL

Gloriana Gonzalez, University of Illinois, Urbana-Champaign

This report investigates how a combined professional development program supported high school geometry teachers in building their knowledge of the concept of dilation in order to successfully implement the CCSSM through a problem-based lesson.

USING SCHOOL-BASED COACHING TO SUPPORT SECONDARY MATHEMATICS TEACHER PROFESSIONAL DEVELOPMENT

Richelle Marynowski, University of Lethbridge

A description of a school-based coaching model of PD, which focused on supporting teachers in their formative and summative assessment practices, will be given. Results from a survey of the teachers regarding the effectiveness of the model will also be presented.

EXPLORE THE POWER OF MANIPULATIVES IN MODERN MATHEMATICS CLASSROOMS

Jesse Michmerhuizen, ETA hand2mind

See first-hand how manipulatives can deepen understanding of mathematical concepts from whole numbers to fractions and beyond. Discover new tools and learn new ways to use familiar manipulatives. Leave with new and exciting ideas and activities to share with your students!

FUNDS OF KNOWLEDGE AND "CRITICAL TASKS" IN ELEMENTARY MATHEMATICS PST PREPARATION: A ROBUST APPROACH

Marrielle Myers, Kennesaw State University

I share results from projects aimed at preparing elementary PSTs to use mathematics to develop "critical tasks." This work extends a previous study focused on funds of knowledge by explicitly engaging PSTs in using mathematics to examine inequity and injustice.

Session 71 <i>Teaching and Learning with Technology</i> <i>Discussion Session</i> EXPLORING #MTBOS: PRESERVICE TEACHERS' ENGAGEMENT WITH THE MATHTWITTERBLOGOSPHERE THROUGH AND BEYOND A MATHEMATICS METHODS COURSE Erica Litke, University of Delaware Amanda Jansen, University of Delaware We describe a study investigating preservice middle school teachers' experiences engaging with the MathTwitterBlogsphere (#MTBoS), exploring whether and how teacher candidates engage with #MTBoS for professional learning. We further discuss the introduction of #MTBoS through a mathematics methods course.	Salon 10	Session 74 <i>Development of Mathematics Teacher Educators</i> <i>Discussion Session</i> COMPARING AND CONTRASTING FRAMEWORKS THAT INFORM OUR PRACTICE Kathleen Lynch-Davis, Coastal Carolina University Chrystal Dean, Appalachian State University This session explores several frameworks and provides commentary on their perceived affordances and limitations when used as tools to delineate mathematics teacher educators' practices.	Salon 13
Session 72 <i>School and University Partnerships and Projects</i> <i>Individual Session</i> THE IMPLEMENTATION OF A COLLABORATIVE MATHEMATICS TUTORING MODEL IN THE PREPARATION OF FUTURE TEACHERS Jane Keiser, Miami University Sarah Watt, Miami University We will describe our ongoing design, revision, and lessons learned concerning a Mathematics Tutoring Model that combines the efforts of Senior special education and Freshman/Sophomore middle grades mathematics preservice teachers with inservice middle grades mathematics teachers for their struggling students.	Salon 11	Session 75 <i>Mathematics Education Policy and Program Issues</i> <i>Symposium</i> INDIVIDUAL AND COLLECTIVE CAPACITIES: STRENGTHENING AFFILIATES TO BECOME STRONGER ADVOCATES Jean Sangmin Lee, University of Indianapolis Alejandra Salinas, Boston University Travis K Miller, University of Indianapolis Mary Pat Sjoström, Winthrop University Thomas Evitts, Shippensburg University Megan Burton, Auburn University The Affiliate Connections Committee will facilitate sharing among AMTE affiliate representatives as they strive to become strong advocates for mathematics education. Participants will reflect on their groups' achievements and receive support and suggestions from other participants on their goals and concerns.	Salon 14
Session 73 <i>Mathematics Content, Processes, and Practices</i> <i>Individual Session</i> INVESTIGATING PROSPECTIVE TEACHERS' EVALUATIONS OF CHILDREN'S TEMPERATURE STORIES Dana Olanoff, Widener University Nicole M. Wessman-Enzinger, George Fox University Jennifer M. Tobias, Illinois State University We investigated preservice teachers' ability to evaluate children's integer temperature problems. We report on the benefits and challenges of using temperature as a context when dealing with integers and also on what the preservice teachers attended to when looking at the children's stories.	Salon 12		

Session 76

Ballroom C

POSTER SESSION

A1. A FIVE-YEAR, MULTIPLE-COHORT, LONGITUDINAL STUDY OF TPACK COMPONENTS RELATED TO PROGRAM DESIGN

Jeremy Zelkowski, University of Alabama

This poster will focus on the initial findings of a five-year, four-cohort study in one research university's teacher preparation program and how these findings shaped a new model at improving confidence and ability of TPACK knowledge dispositions for teaching mathematics.

A2. ALIGNING LESSON STUDY WITH PROFESSIONAL DEVELOPMENT AIMSJonathan David Bostic, Bowling Green State University
Gabriel Matney, Bowling Green State University

Lesson study has power to transform teachers' practices. We share ways to align PD and lesson study goals in diverse contexts. Our focus is modifications of lesson study approaches from Thailand and Japan to PD experiences in the USA.

A3. AN ACTIVITY CONNECTING GEOMETRY TO THE REAL-WORLD: PRESERVICE MIDDLE SCHOOL TEACHERS' PERCEPTIONS

Sheri Johnson, University of Georgia

In this presentation, I share an activity for preservice middle school mathematics teachers that can help them develop real-world connections in geometry using photographs. Survey results reveal their perceptions of the activity and its potential use in their future classrooms.

A4. AN EXAMINATION OF A PRESERVICE ELEMENTARY TEACHER'S VISIONS AND ENACTMENT OF HIGH QUALITY MATHEMATICS

Ashley Whitehead, North Carolina State University

This poster presentation follows a case-study, Charlie, over the course of two years during her elementary teacher preparation program. Results will be presented on how her visions of high quality mathematics instruction relate to her enacted mathematics lessons.

A5. BEGINNING TO USE ASYNCHRONOUS FORUM DISCUSSIONS IN A FACE-TO-FACE GEOMETRY CLASS

Bryan Fede, University of North Carolina, Chapel Hill

Asynchronous forums provide "spaces" where students can explore mathematical content outside a classroom setting. This presentation looks at issues surrounding the selection and facilitation of mathematically significant forum discussion questions in a geometry class for elementary and middle-grades teachers.

A6. BEYOND THE MOVE: A CODING SCHEME FOR TEACHER RESPONSES TO HIGH LEVERAGE STUDENT THINKINGAnnick Rougee, University of Michigan
Blake Peterson, Brigham Young University
Keith Leatham, Brigham Young University

To better understand how mathematics teachers respond to high leverage instances of student thinking, we have developed a coding scheme that simultaneously attends to three components core to effective mathematical discussions: engagement of the class, mathematics, and responsiveness to students.

A7. CLASSROOM INQUIRY AS A MEANS OF DEVELOPING TEACHERS AND PROMOTING MORE EQUITABLE CLASSROOMSDerek Joseph Sturgill, Ohio University
Courtney Koestler, Ohio University

We will report findings from a K-8 classroom inquiry-based professional development program that supported teachers of mathematics or science in developing and conducting classroom inquiry projects on child-centered mathematics or inquiry-based science.

A8. CO-PLANNING STRATEGIES FOR MENTOR TEACHERS AND INTERNSMaureen Grady, East Carolina University
Charity Cayton, East Carolina University
Ron Preston, East Carolina University
Alexandra Funsch, East Carolina University

Co-planning can be a powerful tool to help interns learn to plan more effectively. Often little guidance is available on how to co-plan. We will consider six specific strategies to facilitate co-planning between interns and mentor teachers.

A9. DEVELOPING A FRAMEWORK OF OUTCOMES FOR MATHEMATICS TEACHER LEARNING: MATHEMATICS EDUCATORS ENGAGE IN COLLABORATIVE SELF-STUDYEula Ewing Monroe, Brigham Young University
Damon L. Bahr, Brigham Young University

We will describe the Framework of Outcomes for Mathematics Teacher Learning, a structured set of desired outcomes—beliefs, knowledge, and practices—that defines a theoretical landscape of teachers' professional learning, and describe the collaborative self-study we used to construct it.

A10. DEVELOPING FUTURE MATHEMATICS TEACHER EDUCATORS THROUGH THE USE OF HYPOTHETICAL LEARNING TRAJECTORIES

Ashley Duncan, Arizona State University

This study shares the effect of setting learning goals and writing hypothetical learning trajectories on three graduate students as they participated in a weekly seminar designed to improve their teaching and ability to focus on student thinking.

B11. DEVELOPING MATERIALS FOR PRACTICE-BASED TEACHER EDUCATION

Dana Lynn Grosser-Clarkson, University of Maryland
Elizabeth Fleming, University of Maryland
Eileen Drusjack, University of Maryland

This poster presents several template agendas that were created in LessonSketch, with the idea that they could be adapted and used in many practice-based mathematics methods courses.

B12. DEVELOPING PRESERVICE TEACHERS' REFORM-ORIENTED INSTRUCTIONAL PRACTICES THROUGH A MIDDLE LEVEL MATHEMATICS ENDORSEMENT PROGRAM

Allison Therese deVincenzi, Washington State University, Vancouver
David Slavit, Washington State University, Vancouver

This poster session presents survey data and analysis of work samples related to preservice teachers' development of core instructional practices within the context of a middle level mathematics endorsement program. The survey and implications for program improvement will be provided.

B13. DEVELOPING TEACHER UNDERSTANDING OF THE STANDARDS OF MATHEMATICAL PRACTICE THROUGH PRACTICE-BASED PROFESSIONAL LEARNING COMMUNITIES

Kathryn Teresa Ernie, University of Wisconsin, River Falls

Data analysis after teachers engaged in a year of PD aimed to increase PCK and understanding of mathematical habits of mind shows an increase in understanding of the MPs and teacher identification of use in their teaching and student learning.

B14. DIFFERENTIATED PROFESSIONAL DEVELOPMENT FOR STUDENT-CENTERED TECHNOLOGY INTEGRATION

Mark S. Montgomery, Stephen F. Austin State University

This presentation will report on a study that utilized a differentiated professional development model to assist teachers in overcoming their barriers to student-centered technology integration. Study findings and implications for current teachers, schools and mathematics methodology courses will be shared.

B15. EFFECTIVELY ENCOURAGING PRESERVICE TEACHERS TO PLAN LESSONS WITH A CLEAR PURPOSE

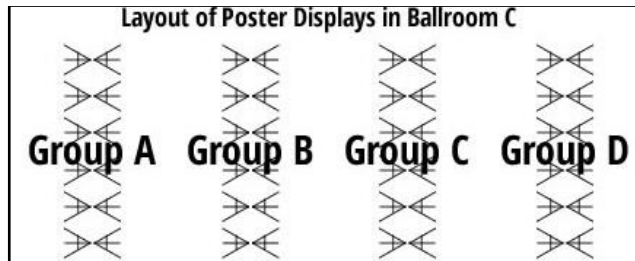
Jessica Audet de la Cruz, Assumption College

This poster session presents the results of a cyclical investigation of the effectiveness of specific instructional methods at discouraging preservice teachers' use of activity-oriented planning while encouraging the consideration of the content goal and student strategies when making task decisions.

B16. ELEMENTARY PRESERVICE TEACHERS' EXPERIENCES ANALYZING STUDENT WORK THROUGH A PEN PAL LETTER WRITING EXCHANGE

Kristen Apraiz, University of Florida

This study focused on providing elementary preservice teachers with an opportunity to evaluate student work, consider the students' mathematical thinking, and determine questions to pose to a fifth grade elementary pen pal.



B17. EXPLORING PRESERVICE MATHEMATICS TEACHERS' UNDERSTANDING OF MATHEMATICAL MODELING WITH THREE INDEPENDENT VARIABLES

Kimberly Corum, University of Virginia

I will present a task asking preservice teachers to develop a mathematical model involving three independent variables, and share their strategies and difficulties. Preservice teachers derived Ampere's Law, relating magnetic field strength to current, wraps of wire, and solenoid length.

B18. HOW PRESERVICE TEACHERS USE REPRESENTATIONS IN THEIR PROPORTIONAL REASONING

Kim Helene Johnson, West Chester University

This presentation will discuss various representations that PSTs used while solving specific tasks designed to elicit proportional reasoning. The study found that PSTs created certain representations in order to help solve the task and explain their reasoning.

B19. HOW TEACHER LEARNING COMMUNITIES IMPROVE TEACHER PRACTICE

Dori Hargrove, Shepherd University

Margret Hjalmarson, George Mason University

We will discuss how a primary (K-2) teacher learning community design for professional development was transformational in moving teachers toward new teaching practices when selecting and implementing high cognitive demand mathematics tasks.

B20. IMPROVING FEEDBACK TO STUDENTS THROUGH ONLINE PROFESSIONAL DEVELOPMENT

Valerie Klein, Drexel University

Jason Silverman, Drexel University

We describe teachers' participation in an online intervention focused on examining students' work to construct meaningful feedback. Specific attention to the "attending" aspect of teachers' professional noticing led to more student-centered and individualized feedback to students' written work.

B21. IMPROVING MINDFULNESS, MINDSET, ANXIETY, AND CONTENT KNOWLEDGE IN MATHEMATICS PRESERVICE TEACHERS

Natasha Erika Gerstenschlager, Western Kentucky University

I present work in progress exploring how to improve preservice teachers' mindfulness, mindset, mathematical anxiety, and content knowledge. This work focuses on the use of professional learning community meetings and personalized learning pathways to achieve this goal.

B22. INTEGRATING MIDDLE SCHOOL TEACHERS' IDEAS ABOUT STUDENTS' THINKING AND CONTENT KNOWLEDGE THROUGH NUMBER TALKS

Dawn Marie Woods, Southern Methodist University

This poster presentation uses qualitative evidence to illustrate how Number Talks – conversations around purposefully designed computation problems--provide a routine for secondary mathematics teachers to implement high-leverage practices while integrating ideas about students' thinking, content knowledge, and equity.

C23. INVESTIGATION INTO THE WAYS IN WHICH PRESERVICE TEACHERS PERCEIVE THE COMMON CORE MATHEMATICAL PRACTICES

Brian Bowen, West Chester University

This study examined the possible changes in teachers' perception of the Common Core Mathematical Practices between their undergraduate and inservice experience.

C24. IPAD IMPLEMENTATION WITH HEADSTART STUDENTS EMPLOYING A MIXED METHOD DESIGN

Amy Beth Adkins, University of Nevada, Las Vegas

iPad implementation in mathematics classrooms is a growing and unexplored method of intervention and instruction that could improve student number sense learning. In this session, research will be shared about number sense apps implementation with preschool level HeadStart students.

C25. LEARNING TO NOTICE CHILDREN'S MATHEMATICS ACROSS CONTEXTS THROUGH A PROSPECTIVE ELEMENTARY TEACHER WORKING GROUP

Lynette DeAun Guzman, Michigan State University

This presentation highlights the collaboration among five prospective elementary teachers and a beginning teacher educator in a working group focused on learning to notice children's mathematics. Implications for working groups and activities in mathematics teacher education will be discussed.

C26. LEVERAGING GROUPING TYPOLOGIES TOWARDS COMMUNITY CULTIVATION

Anthony Matranga, Drexel University

This poster introduces a typology for making sense of teachers' interactions in community-based professional development. The presenters also discuss ways to leverage the typology for grouping participants in ways that can enhance cultivation efforts and teachers' persistent engagement in community.

C27. MENTORING ELEMENTARY MATHEMATICS SPECIALISTS IN THEIR TRANSITION FROM THE UNIVERSITY TO THE CLASSROOM

Kayla Myers, Georgia State University
Nicole Venuto, Georgia State University

Using perspectives of both mentor and mentee, this presentation focuses on mentoring sessions during a K-5 mathematics endorsement program and the role they played in preparing elementary mathematics specialists by providing support, feedback, opportunity for collaboration, and cultivating leadership skills.

C28. MENTORS MAKING MATHEMATICS MEANINGFUL: A UNIVERSITY/TITLE I ELEMENTARY SCHOOL PARTNERSHIP BUILDING CONFIDENCE FOR FUTURE TEACHERS

Betsy Berry, Hoosier Association of Mathematics Teacher Educators
Kaitlyn D Biere, Indiana University, Fort Wayne

This poster will share the implementation and results of a service and research volunteer mentorship project in mathematics teaching initiated by an undergraduate elementary education major for her peers and for children and teachers at a K-5 Title I school.

C29. NOTICING OF DISCOURSE MOVES: AN EXPLORATORY STUDY OF SECONDARY MATHEMATICS AND SCIENCE PRESERVICE TEACHERS

Jo'el Johanson, Northern Arizona University

Discourse moves are fundamental to responsive teaching. Noticing and learning to enact them is a challenge for preservice teachers. This study builds upon prior research on noticing and discourse moves in a combined mathematics and science preservice education course.

C30. PARTNERING TO IMPROVE MIDDLE SCHOOL TEACHERS' PROPORTIONAL REASONING

Virginia Vimpeny Lewis, Longwood University
Maria A Timmerman, Longwood University
Leah Shilling, Longwood University

The Proportional Reasoning Enrichment Project was a collaboration among eighteen school divisions and Longwood University that provided professional development to improve proportional reasoning and the use of formative assessments. The project structure and professional development content will be shared.

C31. PRACTICES THAT SUPPORT IN-THE-MOMENT TEACHER PRODUCTIVE NOTICING: A CASE STUDY OF AN EXPERT TEACHER

Didem Akyuz, Middle East Technical University
Michelle Stephan, University of North Carolina, Charlotte

Mathematical noticing is critical for teaching practices as well as for improving teaching. Despite its importance, how noticing can be improved is unclear. In our poster, we will discuss an expert teacher's practices that support in the moment productive teacher noticing.

C32. PRESERVICE TEACHERS' INTERACTIONS WITH GEOMETRIC MANIPULATIVES: AN EXPLORATORY STUDY

Justin Dimmel, University of Maine
Eric Pandiscio, University of Maine

We report an interview study that investigates how preservice K-8 teachers use dynamic diagrams to explore multiplication and division. Our project reconnects arithmetic to its geometric roots and taps students' visual literacies to aid their mathematical exploration and sense-making.

C33. RAISING PRESERVICE TEACHERS' UNDERSTANDING THROUGH REVISION: A STUDY OF A MODIFIED MOORE METHOD GEOMETRY COURSE

Janessa Beach, Texas A&M University, Commerce

Geometry is under-researched and students consistently underperform in this area. We discuss preservice secondary teachers in a Modified Moore Method geometry course, and how they improved geometric reasoning and proof construction skills through open-ended problems and revisions of their proofs.

C34. SHIFTS IN PROSPECTIVE SECONDARY MATHEMATICS TEACHERS' BELIEFS ABOUT TEACHING PROOF

Hyejin Park, University of Georgia

AnnaMarie Conner, University of Georgia

We surveyed prospective secondary mathematics teachers' beliefs before and after three semesters of mathematics education coursework. We found their beliefs about mathematics and proof remained stable and their beliefs about teaching and teaching proof shifted in productive directions.

D35. STRENGTHENING MIDDLE SCHOOL MATHEMATICS TEACHERS' KNOWLEDGE OF STATISTICS AND PROBABILITY VIA PROFESSIONAL DEVELOPMENT

Lina DeVaul, University of Nevada, Las Vegas

Travis Austin Olson, University of Nevada, Las Vegas

The design and outcome of a six-day long Common Core State Standards-aligned statistics and probability professional development with 29 inservice middle school teachers will be shared. Designers included both researchers and AP statistics teachers.

D36. SUPPORTING THE DEVELOPMENT OF MATHEMATICAL KNOWLEDGE FOR TEACHING THROUGH A YEAR-LONG PROFESSIONAL DEVELOPMENT INITIATIVE

Tracey Holliday Howell, University of North Carolina, Greensboro

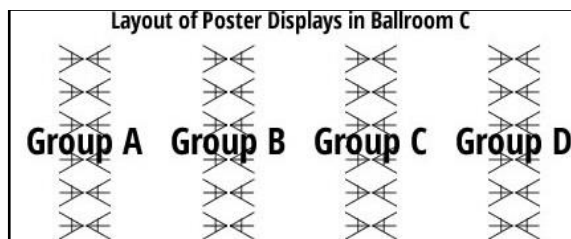
Stacey Channele Zimmerman, University of North Carolina, Greensboro

We focus on one component of a year-long study implemented with secondary mathematics teachers. We build on the Mathematical Work of Teaching Framework developed by Ball and colleagues to create an assessment suitable for measuring secondary teachers' MKT.

D37. TEACHING MATHEMATICS TEACHERS TO "WALK THE WALK" IN ORDER TO "TALK THE TALK"

Denise L Chenoweth, University of South Florida

Classroom discourse is an effective tool for increasing student understanding of mathematics concepts. This presentation provides key features of effective professional development aimed at increasing the ability of teachers to facilitate meaningful classroom discussions that promote student understanding of mathematics.



D38. TRANSFORMING REMEDIATION IN MATHEMATICS CONTENT COURSES FOR PRESERVICE TEACHERS

Ewelina McBroom, Southeast Missouri State University

This poster will present results of implementing a corequisite model, in which preservice teachers who needed remediation took the developmental course (a 1-hour lab) and an introductory college-level mathematics course for preservice teachers at the same time.

D39. USING 5 PRACTICES AS A FRAMEWORK FOR PRESERVICE TEACHERS

Megan K. Murray, University of Hull

Smith and Stein's *5 Practices for Orchestrating Productive Mathematics Discussions* is used as a framework at the University of Hull (UK) to develop content and pedagogical knowledge of preservice elementary teachers. This poster session presents successes and challenges of this approach.

D40. USING AN ARTIFICIAL INTELLIGENCE SIMULATION TO IMPROVE PROSPECTIVE MATHEMATICS TEACHERS' QUESTIONING SKILLS: AN EXPLORATORY STUDY

Sandy Spitzer, Towson University

Christine M Phelps, Central Michigan University

In this poster, we will describe our creation of an artificial intelligence tool, which aims to develop prospective teachers' questioning skills through simulated student interviews, and share our initial findings about prospective teachers' interactions with the tool.

D41. USING BRANCHING EXPERIENCES IN LESSONSKETCH TO OPEN DISCOURSE ABOUT PRESERVICE TEACHERS' PEDAGOGICAL DECISIONS AND JUSTIFICATIONS

Karl Wesley Kosko, Kent State University

This poster presentation discusses the use of Branching Experiences (a form of teaching simulation on LessonSketch) to launch discussions with preservice teachers about pedagogical decisions in elementary mathematics teaching.

D42. USING DIGITAL PRACTICES TO CREATE EQUITABLE LEARNING ENVIRONMENTS IN AN ONLINE MATHEMATICS COURSE

Julian Viera, University of Texas, El Paso

Olga Kosheleva, University of Texas, El Paso

The digital divide has been defined as the inequalities in internet access based on socioeconomic status, gender and other cultural identifiers. This qualitative pilot study addressed how ELs engage in an online mathematics course to find culturally relevant help.

**RECEPTION FOR GRADUATE STUDENTS & EARLY CAREER FACULTY****BALLROOM D**

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



CONFERENCE HISTORICAL HIGHLIGHTS

8TH ANNUAL CONFERENCE, 2004

SAN DIEGO, CA

*Preconference Symposium***The Role of Teacher Educators as Leaders**

Cathy Seeley, University of Texas, Austin

*Judith Jacobs Lecture***The Role of Mathematics Teacher Education:
Reform or Enculturation?**

Thomas J. Cooney, University of Georgia (emeritus)

*Closing Session***MathematicallySane.com: Promoting
Rational Discourse about Mathematics
Education Reform**

Ralph Connelly, Brock University
W. Gary Martin, Auburn University
Judy Sowder, San Diego State University
Marilyn Strutchens, Auburn University



Conference participants have two options for breakfast.

FRIDAY BREAKFAST

BALLROOM C

Breakfast will be served in Ballroom C.

ADVOCACY AND EMERGING ISSUES BREAKFAST

BALLROOM D

Della Cronin, Washington Partners, LLC
 Karen King, National Science Foundation
 Ken Krehbiel, National Council of Teachers of Mathematics

The annual AMTE Advocacy and Emerging Issues Breakfast highlights up-to-date initiatives and events related to national policy in mathematics teacher education. Our invited panel of 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) and gathered from the AMTE membership. We will end with an open forum inviting questions from the audience and further discussion from the panel.



CONFERENCE HISTORICAL HIGHLIGHTS

9TH ANNUAL CONFERENCE, 2005

DALLAS, TX

Preconference Symposium

Making the Case – Exploring the Use of Cases in Mathematics Teacher Education

Susan N. Friel, University of North Carolina, Chapel Hill
 Margaret S. Smith, University of Pittsburgh

Judith Jacobs Lecture

Reflections on a Lifetime of Work: Why Curriculum Matters

Glenda Lappan, Michigan State University

Closing Session

Understanding as the Heart of Teacher Education

Cathy Seeley, President of the National Council of Teachers of Mathematics

OVERVIEW OF FRIDAY MORNING, FEBRUARY 10, 2017

	8:00 AM - 9:00 AM	9:15 AM - 10:00 AM
Ballroom B	80. <i>Intentional Use of Video for Teacher Education</i> - van Es, Stockero, Dyer, & Van Zoest	95. <i>Early Mathematics Professional Development: Effects of an Intervention Based on Learning Trajectories on Teachers' Practices</i> - Clements
Salon 1	81. <i>Developing Preservice Teachers' Understanding of Function Using a Machine Metaphor Applet</i> - McCulloch, Lovett, & Edgington	96. <i>Supporting Teachers' Integration of Virtual Manipulatives and Activities</i> - Reiten
Salon 2	82. <i>Using Technology to Develop Shared Knowledge in and Across Grade Level Teams</i> - Webel & Lannin	97. <i>For Your Eyes Only: Video as a Tool for Personal Reflection</i> - McNamara
Salon 3	83. <i>Supporting Practicing Mathematics Teachers in Becoming Culturally Responsive in Lesson Planning and Teaching Practices</i> - Corey & Edwards	98. <i>So That's What a Mathematics Discussion Feels Like: Piloting Technology for Orchestrating Mathematics Discussions</i> - Chao
Salon 4	93. <i>Assessment and Evaluation of Elementary Mathematics Specialist (EMS) Candidates and Programs</i> - Rigelman & McGatha	
Salon 5	94. <i>Reasoning With the Variable Parts and Multiple Batches Perspectives on Proportional Relationships</i> - Beckmann, Izsak, Stevenson, Kulow, & Olmez	
Salon 6	84. <i>Brief Report Session: Elementary Teachers</i> - Rosencrans, Melhuish, Nisbet, & Jung	99. <i>Empowering Mathematics Teachers and Creating Equitable Learning Environments Through Professional Development in Ethnomathematics</i> - Furuto, Galicinao, & Tam
Salon 7	85. <i>Brief Report Session: Research to Practice</i> - Bergner, Groth, van Ingen, Shin, Smith, & Taylor	100. <i>Brief Report Session: Instructional Practices</i> - Bahr & Pinter
Salon 8	86. <i>Psychological and Pedagogical Benefits of an Inquiry-Oriented Mathematics Content Course for K-8 Teachers</i> - Conforti Preszler	101. <i>The Evolution of Online Learning From a Teacher's and Student's Perspective</i> - Tanner
Salon 9	87. <i>Geometry, Instructional Practice, and Leadership: Developing High School Teacher Knowledge and Leadership</i> - McLeod & Steele	102. <i>Practice-Based Methods Courses in Collaboration With an Urban District</i> - Nagle & Styers
Salon 10	88. <i>Exploring Mathematical Text Types</i> - Robinson	103. <i>Planning Collaboratively: An Interdisciplinary Approach for Preparing Middle School Teachers</i> - Franz & Ivy
Salon 11	89. <i>Making Sense of Elementary School Teachers' Perspectives on Children's Fraction Strategies</i> - Jessup, Hewitt, & Jacobs	104. <i>Introductory Statistics: Preparing Inservice Middle-Level Mathematics Teachers for Classroom Teaching and Research</i> - Green & Blankenship
Salon 12	90. <i>Same, Same, Different: Relations Between Different Mathematics Problems</i> - Bass	105. <i>Developing Teacher Leaders for Equity-Mindedness</i> - Frank & Hjalmarson
Salon 13	91. <i>Promises and Pitfalls of Mathematics Coaching: Developing Teachers as Learners and Coaches as Teacher Educators</i> - Williams, Carlson, & Heaton	106. <i>Taking Power Seriously: The Process of Continual Improvement Among Mathematics Teacher Educators</i> - Livers & Willey
Salon 14	92. <i>Enhancing Mathematics Instruction Through the Integration of Mathematics and Literature</i> - Wheeler & Hayata	107. <i>Deciding What Matters: Quantitative Reasoning in Teachers' Collaborative Work on Contextual Problems</i> - Patterson

	10:15 AM - 11:30 AM
Ballroom B	108. <i>Interpreting Students' Thinking: Preservice Teachers' Inferences and Their Use of Supporting Evidence</i> - Boerst, Ball, & Shaughnessy
Salon 1	109. <i>Professional Development: Research, Implementation, and Evaluation (PrimeD) Framework: Implications for Mathematics Teacher Professional Development</i> - Rakes, Ronau, Bush, & Schroeder
Salon 2	110. <i>Expanding and Extending Debate Without Getting Personal: Exploring a Framework for Engaging With Incorrect Thinking</i> - Grant & Levin
Salon 3	111. <i>The Mathematically Productive Habits and Routines Tool: Connecting Teacher Moves and Student Reasoning</i> - Rosencrans, Melhuish, & Thanheiser
Salon 4	112. <i>Technology-Mediated Practice-Based Teacher Education: Designing, Using, and Researching Digital Environments for Teacher Learning</i> - Herbst, Amador, Boileau, Davis, Earnest, Gursel, & Milewski
Salon 5	113. <i>Putting AMTE's Standards for Mathematics Teacher Preparation to Work for You</i> - Bezuk, Bay-Williams, Clements, & Martin
Salon 6	114. <i>Positioning Mathematics Teacher Educators to Engage in Political and Media Arenas</i> - Chval, Sztajn, Drake, & Rigelman
Salon 7	115. <i>Brief Report Session: Preservice Teachers</i> - Siy, Reeder, Che, Utley, Warshauer, Starkey, Smith, Herrera, & Tjoe
Salon 8	116. <i>Adapting Professional Learning Models to Attend to Teachers' Levels of Appropriation of Practice</i> - Barlow, Lischka, Strayer, Willingham, Hartland, Gerstenschlager, & Watson
Salon 9	117. <i>Clarifying the Role of Equity Research Around the Standards for Mathematical Practice</i> - Wager, Bartell, & Battey
Salon 10	118. <i>Embedding Mathematics Teacher Preparation Courses in the PK-12 Setting</i> - Rumsey, Virmani, Schwartz, Swartz, & Woods
Salon 11	119. <i>Technique and Purpose: Separating and Integrating Doing and Thinking in Representations of Practice</i> - Wieman, Buchbinder, Bieda, Cook, Males, & McAneny
Salon 12	120. <i>The CCSS Statistics and Probability Standards: Implications for Teacher Preparation</i> - Burrill, Dick, & Peters
Salon 13	121. <i>I Am New to Mathematics Teacher Education: Now What?</i> - Chauvot, Junor Clarke, & Lynch
Salon 14	122. <i>Coaches' Relational Work in Support of Ambitious Teacher Learning</i> - Louie, Gibbons, Knapp, Ellington, & Whitenack

Session 80

Mathematics Pedagogy and Instructional Practice Symposium

Ballroom B**INTENTIONAL USE OF VIDEO FOR TEACHER EDUCATION**

Elizabeth van Es, University of California, Irvine
Shari L Stockero, Michigan Technological University
Elizabeth Dyer, Northwestern University
Laura R. Van Zoest, Western Michigan University

Presenters will share purposes for using video in teacher education and describe specific tasks to achieve these aims. We consider issues related to task design and enactment, video capture and selection, and leveraging the affordances of video for teacher learning.

Session 81

Teaching and Learning with Technology Individual Session

Salon 1**DEVELOPING PRESERVICE TEACHERS' UNDERSTANDING OF FUNCTION USING A MACHINE METAPHOR APPLET**

Allison McCulloch, North Carolina State University
Jennifer Lovett, Middle Tennessee State University
Cyndi Edgington, North Carolina State University

This session presents an applet designed to help preservice teachers to develop their conceptual understanding of function (including univalence and uniqueness conditions) using a machine metaphor. Participants will engage with the applet and analyze preservice teachers' work with the task.

Session 82

Teacher Professional Development Individual Session

Salon 2**USING TECHNOLOGY TO DEVELOP SHARED KNOWLEDGE IN AND ACROSS GRADE LEVEL TEAMS**

Corey Webel, University of Missouri
John Lannin, University of Missouri

We describe modules that engaged teams of elementary teachers in generating knowledge for teaching mathematics in the form of screencasts of student work with teacher commentary. We discuss the potential of using such artifacts to build knowledge across teacher networks.

Session 83

Equity and Mathematics Education Individual Session

Salon 3**SUPPORTING PRACTICING MATHEMATICS TEACHERS IN BECOMING CULTURALLY RESPONSIVE IN LESSON PLANNING AND TEACHING PRACTICES**

Darryl L. Corey, Radford University
Belinda Pickett Edwards, Kennesaw State University

Session participants will consider practicing teachers' understanding of culturally responsive pedagogy and lesson planning. Session participants will examine teachers' culturally responsive lesson plans (created in an online synchronous course), a culturally responsive framework, and the facilitation of the framework.

Session 84

Mathematics Content, Processes, and Practices

Salon 6**BRIEF REPORT SESSION: ELEMENTARY TEACHERS****ASSESSING PRESERVICE TEACHERS' CONTENT KNOWLEDGE THROUGH THEIR REPRESENTATIONS OF FRACTION MULTIPLICATION SITUATIONS**

Eun Jung, University of Georgia

This research suggests that one of the biggest stumbling blocks for preservice teachers in reasoning with fractions abstractly and quantitatively lies in confusing the roles of quantities and operators, particularly as they try to create abstract representations of equations.

ELEMENTARY TEACHERS' CONCEPTIONS OF GENERALIZING IN MATHEMATICS

Kathleen Melhuish, Texas State University
Brenda Rosencrans, Portland State University

We use survey data to explore a variety of ways that a group of thirty-three 3-5th grade teachers from eight elementary schools conceptualized mathematical generalization. Conceptualizations ranged dramatically from applying a rule, to making connections, and developing rules.

MATHEMATICS ANXIETY AND ELEMENTARY STUDENT TEACHERS' TEACHING OF MATHEMATICS

Leslie Nisbet, Florida International University

A multiple case study investigated the mathematics content knowledge, PCK, and mathematics anxiety evidenced during student teaching among six elementary preservice teachers, 3-high and 3-low mathematics anxiety. Findings revealed differences in planning, resources, content knowledge, PCK, and cooperating teacher support.

Session 85

Mathematics Pedagogy and Instructional Practice

Salon 7**BRIEF REPORT SESSION: RESEARCH TO PRACTICE****A MODEL FOR INTEGRATING MATHEMATICS TEACHER EDUCATION AND UNDERGRADUATE RESEARCH**

Randall E Groth, Salisbury University
Jennifer Bergner, Salisbury University

We describe a model integrating teaching and formal research. It prompts undergraduates to analyze and act upon classroom data from lessons they have taught. Undergraduates learn to base instructional decisions on empirical data and build identities as future academic researchers.

PREPARING TEACHERS TO LINK RESEARCH TO PRACTICE: A CAUTIONARY TALE OF SUCCESSES AND FAILURES

Sarah van Ingen, University of South Florida

I developed a sequence of learning experiences to prepare prospective teachers to link research to practice. In this session, I report on in-depth, qualitative analyses of three cases that illustrate the benefits but also the shortcomings of this approach.

SECONDARY MATHEMATICS TEACHER EDUCATORS' METHODS COURSE GOALS, TASKS, AND PERSPECTIVES

Cynthia E. Taylor, Millersville University of Pennsylvania
Ryan C Smith, University of Georgia
Dongjo Shin, University of Georgia

In this presentation, we examine and discuss data we collected from an online survey of secondary MTEs and identify their theoretical perspectives, their most important goals and tasks, and the alignment among the various perspectives, goals, and tasks.

Session 86

Salon 8

Mathematics Content, Processes, and Practices
Individual Session

PSYCHOLOGICAL AND PEDAGOGICAL BENEFITS OF AN INQUIRY-ORIENTED MATHEMATICS CONTENT COURSE FOR K-8 TEACHERS

Noelle Conforti Preszler, James Madison University

This session will give participants a chance to experience and understand the benefits an inquiry-oriented mathematics content course can have on future K-8 teachers' relationships with mathematics and their developing teaching practices.

Session 87

Salon 9

Teacher Professional Development
Individual Session

GEOMETRY, INSTRUCTIONAL PRACTICE, AND LEADERSHIP: DEVELOPING HIGH SCHOOL TEACHER KNOWLEDGE AND LEADERSHIP

Kevin McLeod, University of Wisconsin, Milwaukee
Mike Steele, University of Wisconsin, Milwaukee

We report the findings of a high school professional development project that sought to strengthen teacher knowledge in the areas of transformational geometry, effective instructional practices, and teacher leadership. Aggregate and individual data on teacher learning will be shared.

Session 88

Salon 10

Mathematics Pedagogy and Instructional Practice
Individual Session

EXPLORING MATHEMATICAL TEXT TYPES

Richard Robinson, The Citadel

We discuss disciplinary literacy and possible implications for mathematics education by exploring the notion of text in mathematics through the identification and application of four authentic text types: graphical text, numerical text, algebraic/symbolic text, and proof text.

Session 89

Salon 11

Mathematics Pedagogy and Instructional Practice
Individual Session

MAKING SENSE OF ELEMENTARY SCHOOL TEACHERS' PERSPECTIVES ON CHILDREN'S FRACTION STRATEGIES

Naomi A Jessup, University of North Carolina, Greensboro
Amy Hewitt, University of North Carolina, Greensboro
Vicki Jacobs, University of North Carolina, Greensboro

This session will report upper elementary school teachers' perspectives on children's equal sharing strategies at the beginning of professional development. Discussion will include strategy features teachers prioritized, consistencies between teachers' perspectives and research, and implications for research and practice.

Session 90

Salon 12

Mathematics Content, Processes, and Practices
Individual Session

SAME, SAME, DIFFERENT: RELATIONS BETWEEN DIFFERENT MATHEMATICS PROBLEMS

Hyman Bass, University of Michigan

This session focuses on an underdeveloped mathematical practice, one related to "theory building" in mathematics: Finding and articulating connections among different mathematics problems. After explaining its mathematical significance, I will offer some rich opportunities to engage in this practice.

Session 91

Salon 13

Development of Mathematics Teacher Educators
Individual Session

PROMISES AND PITFALLS OF MATHEMATICS COACHING: DEVELOPING TEACHERS AS LEARNERS AND COACHES AS TEACHER EDUCATORS

Mary Williams, University of Nebraska, Lincoln
Mary Alice Carlson, Montana State University
Ruth Heaton, University of Nebraska, Lincoln

Vignettes illustrating promises and pitfalls in coaches' practices during the coaching cycle will be presented for audience discussion. Methods for shifting practices of mathematics coaches toward developing teachers as learners and views of coaching toward teacher education will be discussed.

Session 92

Salon 14

Mathematics Pedagogy and Instructional Practice
Discussion Session

ENHANCING MATHEMATICS INSTRUCTION THROUGH THE INTEGRATION OF MATHEMATICS AND LITERATURE

Ann Wheeler, Texas Woman's University
Carole Hayata, Southern Methodist University

During this Discussion Session, participants will learn about a children's literature project given to two preservice classes. Attendees will provide feedback about the project and discuss future iterations of the activity.

Session 93

Mathematics Education Policy and Program Issues
Extended Session

Salon 4

ASSESSMENT AND EVALUATION OF ELEMENTARY MATHEMATICS SPECIALIST (EMS) CANDIDATES AND PROGRAMS

Nicole Rigelman, Portland State University
 Maggie B. McGatha, University of Louisville

We will provide results from an AMTE survey regarding EMS programs and their approaches to candidate/program assessment. We will consider recommendations for high-quality program assessment and use the information and principles as a basis for collaborative conversations and analysis.

Session 94

Mathematics Content, Processes, and Practices
Extended Session

Salon 5

REASONING WITH THE VARIABLE PARTS AND MULTIPLE BATCHES PERSPECTIVES ON PROPORTIONAL RELATIONSHIPS

Sybilla Beckmann, University of Georgia
 Andrew Izsak, University of Georgia
 Dean Leigh Stevenson, University of Georgia
 Torrey Kulow, University of Georgia
 Ibrahim Burak Olmez, University of Georgia

In this interactive session, we will engage with two perspectives on proportional relationships by reasoning with a quantitative definition of multiplication and math drawings. We will consider how the perspectives apply to statistical samples and geometric similarity, including slope.

Session 95

Teacher Professional Development
Individual Session

Ballroom B

EARLY MATHEMATICS PROFESSIONAL DEVELOPMENT: EFFECTS OF AN INTERVENTION BASED ON LEARNING TRAJECTORIES ON TEACHERS' PRACTICES

Douglas H. Clements, University of Denver

We evaluated the effects of a research-based model for scaling up educational interventions on teachers' practices in preschool mathematics. A professional development program based on learning trajectories had a substantial positive effect on teachers' instructional practices, sustained six years out.

Session 96

Teaching and Learning with Technology
Individual Session

Salon 1

SUPPORTING TEACHERS' INTEGRATION OF VIRTUAL MANIPULATIVES AND ACTIVITIES

Lindsay Reiten, University of Wisconsin, Madison

This study investigated a PD promoting teachers' use of virtual manipulatives to enhance student learning. I share the resources and framework used by teachers to critique and modify/design activities and discuss strategies for supporting teachers' integration of technology related activities.

Session 97

Preservice Teacher Field Experiences
Individual Session

Salon 2

FOR YOUR EYES ONLY: VIDEO AS A TOOL FOR PERSONAL REFLECTION

Julie McNamara, California State University, East Bay

This session describes a project with preservice teachers using video records to reflect on practice and identify goals. Smart phones, ipads, and other devices were used to capture mathematics discussions. I will share challenges, successes, and reflections from the teachers.

Session 98

Teaching and Learning with Technology
Individual Session

Salon 3

SO THAT'S WHAT A MATHEMATICS DISCUSSION FEELS LIKE: PILOTING TECHNOLOGY FOR ORCHESTRATING MATHEMATICS DISCUSSIONS

Theodore Chao, The Ohio State University

Orchestrating mathematics discussions is difficult. We have developed technology that provides teachers with instantaneous access to children's strategies in order to facilitate orchestrating classroom discussion. We demonstrate this technology and report findings from use in a 4th-grade classroom.

Session 99 <i>Equity and Mathematics Education</i> <i>Individual Session</i> EMPOWERING MATHEMATICS TEACHERS AND CREATING EQUITABLE LEARNING ENVIRONMENTS THROUGH PROFESSIONAL DEVELOPMENT IN ETHNOMATHEMATICS Linda Furuto, University of Hawai'i, Mānoa Phillippe Fernandez Galicinao, Hālau Kū Māna New Century Public Charter School Kaipo Enario Cabanlet Tam, University Lab School, University of Hawai'i, Mānoa The Ethnomathematics and STEM Institute aims to advance equitable and high quality mathematics education with diverse populations. We highlight data and examples from this collaborative project whose purpose is to design and implement professional development in academic and community-based cultural contexts.	Salon 6
Session 100 <i>Teacher Professional Development</i> BRIEF REPORT SESSION: INSTRUCTIONAL PRACTICES A STUDY OF DISCUSSION ORCHESTRATION IN MIDDLE GRADES Damon L. Bahr, Brigham Young University This action research investigated a middle school teacher who implemented the five practices for orchestrating discussions. Growth in learning to engage in the practices was observed, as mediated by mathematics content knowledge and task quality. CONNECTING RESEARCH TO PRACTICE: SUPPORTING CURRICULUM IMPLEMENTATION USING STANDARDS-BASED MATHEMATICS TEACHING PRACTICES Holly H Pinter, Western Carolina University This brief report will share the experiences of three teachers at one school who participated in a professional development series to aid in their implementation of a district-mandated curriculum by investigating teaching practices using a reflective framework.	Salon 7
Session 101 <i>AMATYC Presidential Exchange Session</i> <i>Individual Session</i> THE EVOLUTION OF ONLINE LEARNING FROM A TEACHER'S AND STUDENT'S PERSPECTIVE Jane Tanner, American Mathematical Assoc. of Two-Year Colleges Technology has certainly been evolving during the span of this instructor's nearly 40-year teaching career. Participate in this discussion of what used to be, what is, and what may happen in the future from both a teacher's and student's point of view. Come and share your experiences as well!	Salon 8
Session 102 <i>School and University Partnerships and Projects</i> <i>Individual Session</i> PRACTICE-BASED METHODS COURSES IN COLLABORATION WITH AN URBAN DISTRICT Courtney Nagle, Penn State, Erie Jodie L. Styers, Penn State, Erie This session will describe the details and results of a methods course redesign aimed at connecting the theory of preservice teachers' methods coursework with practical considerations of teaching high school students from an urban district.	Salon 9
Session 103 <i>Mathematics Pedagogy and Instructional Practice</i> <i>Individual Session</i> PLANNING COLLABORATIVELY: AN INTERDISCIPLINARY APPROACH FOR PREPARING MIDDLE SCHOOL TEACHERS Dana Pomykal Franz, Mississippi State University Jessica Ivy, Mississippi State University Collaborative, interdisciplinary planning is a critical skill for middle school mathematics teachers. This session will share results of mathematics preservice teachers' experiences in collaborative planning and advocating for meaningful mathematics within the context of a larger themed lesson unit.	Salon 10
Session 104 <i>Teacher Professional Development</i> <i>Individual Session</i> INTRODUCTORY STATISTICS: PREPARING INSERVICE MIDDLE-LEVEL MATHEMATICS TEACHERS FOR CLASSROOM TEACHING AND RESEARCH Jennifer L Green, Montana State University Erin Blankenship, University of Nebraska, Lincoln Statistics plays an increasingly larger role in mathematics teachers' instructional and professional responsibilities. This session engages participants in discussions about the statistical education of teachers, with a focus on supporting teachers' knowledge for teaching and using statistics.	Salon 11
Session 105 <i>Equity and Mathematics Education</i> <i>Individual Session</i> DEVELOPING TEACHER LEADERS FOR EQUITY-MINDEDNESS Toya M. Frank, George Mason University Margret Hjalmanson, George Mason University This study focused on supporting mathematics teacher leaders as they developed equity-mindedness for mathematics teaching and leadership during a summer-fall teacher leadership academy. We explored how they interpreted equity and translated their interpretations into action plans in their school contexts.	Salon 12

Session 106 <i>Development of Mathematics Teacher Educators</i> <i>Individual Session</i> TAKING POWER SERIOUSLY: THE PROCESS OF CONTINUAL IMPROVEMENT AMONG MATHEMATICS TEACHER EDUCATORS Stefanie D Livers, University of Alabama Craig Willey, Indiana University, Indianapolis <p>The responsibility of developing strong mathematics teachers is layered and consequential. We present our collaborative self-study regarding our priorities, decisions, and identities as MTEs. We will provide our vision for core propositions for MTEs and critical mathematics teachers.</p>	Salon 13	Session 107 <i>Mathematics Content, Processes, and Practices</i> <i>Individual Session</i> DECIDING WHAT MATTERS: QUANTITATIVE REASONING IN TEACHERS' COLLABORATIVE WORK ON CONTEXTUAL PROBLEMS Cody Patterson, University of Texas, San Antonio <p>I will share artifacts of teachers' work on some mathematical modeling tasks from a professional development workshop to illustrate how teachers engage collaboratively in quantitative reasoning and make decisions about which quantities are important in a problem's solution.</p>	Salon 14
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FRIDAY, FEBRUARY 10, 2017

10:15 AM - 11:30 AM

Session 108 <i>Mathematics Pedagogy and Instructional Practice</i> <i>Individual Session</i> INTERPRETING STUDENTS' THINKING: PRESERVICE TEACHERS' INFERENCES AND THEIR USE OF SUPPORTING EVIDENCE Tim Boerst, University of Michigan Deborah Loewenberg Ball, University of Michigan Meghan Shaughnessy, University of Michigan <p>Assessment requires skillful interpretation. Thus, it is crucial to assess preservice teachers' interpretation of the information they gather about students' mathematical thinking. Participants in this session will discuss examples of interpretation gathered in connection with an interactive simulation.</p>	Ballroom B	Session 110 <i>Mathematics Content, Processes, and Practices</i> <i>Discussion Session</i> EXPANDING AND EXTENDING DEBATE WITHOUT GETTING PERSONAL: EXPLORING A FRAMEWORK FOR ENGAGING WITH INCORRECT THINKING Theresa Grant, Western Michigan University Mariana Levin, Western Michigan University <p>Many students rush to identify strategies as correct or incorrect. In this session we engage participants in a framework that delays this rush to evaluation and necessitates active engagement with underlying issues, and provide video of the framework enacted.</p>	Salon 2
Session 109 <i>Teacher Professional Development</i> <i>Symposium</i> PROFESSIONAL DEVELOPMENT: RESEARCH, IMPLEMENTATION, AND EVALUATION (PRIMED) FRAMEWORK: IMPLICATIONS FOR MATHEMATICS TEACHER PROFESSIONAL DEVELOPMENT Christopher Rakes, University of Maryland, Baltimore County Robert Nicholas Ronau, University of Cincinnati Sarah B Bush, Bellarmine University Margaret J Schroeder, University of Kentucky <p>This symposium will share results from four professional development studies guided by the PrimeD conceptual framework. The four studies focused on STEM, STEAM, CCSSM, and preservice training. Audience members will reflect on how PrimeD can enhance other professional development projects.</p>	Salon 1	Session 111 <i>Teacher Professional Development</i> <i>Discussion Session</i> THE MATHEMATICALLY PRODUCTIVE HABITS AND ROUTINES TOOL: CONNECTING TEACHER MOVES AND STUDENT REASONING Brenda Rosencrans, Portland State University Kathleen Melhuish, Texas State University Eva Thanheiser, Portland State University <p>We introduce an observation tool developed to measure the implementation of a research-based professional development. We share the tool through three lenses: a data collection tool, a learning tool, and a formative evaluation tool for teachers and leaders.</p>	Salon 3

<p>Session 112 Salon 4 <i>Teaching and Learning with Technology Symposium</i></p> <p>TECHNOLOGY-MEDIATED PRACTICE-BASED TEACHER EDUCATION: DESIGNING, USING, AND RESEARCHING DIGITAL ENVIRONMENTS FOR TEACHER LEARNING</p> <p>Patricio G Herbst, University of Michigan Julie Amador, University of Idaho Nicolas Boileau, University of Michigan Trina Davis, Texas A&M University Darrell Earnest, University of Massachusetts, Amherst Umut Gursel, University of Michigan Amanda Milewski, University of Michigan</p> <p>What affordances do digital technologies provide for Practice-Based Mathematics Teacher Education? What research is needed to explore such activities? These cases will illustrate what teacher education pedagogies can look like when mediated by various digital technologies.</p>	<p>Session 115 Salon 7 <i>Mathematics Content, Processes, and Practices</i></p> <p>BRIEF REPORT SESSION: PRESERVICE TEACHERS</p> <p>DEVELOPING PRESERVICE TEACHERS' UNDERSTANDING OF PRODUCTIVE STRUGGLE</p> <p>Christine Alyssa Herrera, California State University, Chico Shawnda Smith, California State University, Bakersfield Christina Starkey, Southern New Hampshire University Hiroko Kawaguchi Warshawer, Texas State University</p> <p>This presentation reports on a study that introduced preservice teachers to the construct of productive struggle in their mathematics content course for PSTs. We share the video analysis and writing assignments used to support PSTs coming to understand productive struggle.</p> <p>EXAMINING PRESERVICE TEACHERS' CHOICES OF NUMERICAL CHARACTERISTICS OF PROBLEMS WITH SIMILAR SURFACE STRUCTURES</p> <p>Hartono Tjoe, Penn State, Berks</p> <p>I report findings from a study in which preservice teachers engaged in choosing and sequencing problems to pose in their lesson plans. I discuss implications for preparing teachers to recognize the role of numerical characteristics in eliciting multiple solution strategies.</p> <p>SOMETHING OLD/SOMETHING NEW: RICH MATHEMATICAL TASKS THAT STAND THE TEST OF TIME</p> <p>Stacy Reeder, University of Oklahoma Juliana Utley, Oklahoma State University Megan Che, Clemson University</p> <p>Rich and worthwhile tasks that require only a few minutes and can be used as class openers will be presented. Participants will be engaged in discussions about how these tasks can be used across several grades.</p> <p>THE DEVELOPMENT AND NEGOTIATION OF SOCIOMATHEMATICAL NORMS FOR DRAWINGS</p> <p>Eric Siy, University of Georgia</p> <p>I present my initial findings from my investigation of sociomathematical norms in a content course for prospective middle school teachers. In particular, I look at the norms associated with the use of strip diagrams and double number lines.</p>
<p>Session 113 Salon 5 <i>Mathematics Education Policy and Program Issues Discussion Session</i></p> <p>PUTTING AMTE'S STANDARDS FOR MATHEMATICS TEACHER PREPARATION TO WORK FOR YOU</p> <p>Nadine Bezuk, San Diego State University Jennifer Bay-Williams, University of Louisville Douglas H. Clements, University of Denver W Gary Martin, Auburn University</p> <p>AMTE's <i>Standards for Mathematics Teacher Preparation</i> describes the knowledge, skills, and dispositions well-prepared beginning teachers should have and how programs can ensure their students meet those standards. We will discuss how the document can inform policy, programs, and courses.</p>	
<p>Session 114 Salon 6 <i>Mathematics Education Policy and Program Issues Discussion Session</i></p> <p>POSITIONING MATHEMATICS TEACHER EDUCATORS TO ENGAGE IN POLITICAL AND MEDIA ARENAS</p> <p>Kathryn Bouchard Chval, University of Missouri Paola Sztajn, North Carolina State University Corey Drake, Michigan State University Nicole Rigelman, Portland State University</p> <p>MTEs respond to questions and criticism about teacher education, quality and evaluation, mathematics curriculum, standards and testing. Participants will engage in discussion about cases and strategies used by other MTEs to navigate these situations with the media, legislators, and stakeholders.</p>	

Session 116 <i>Teacher Professional Development</i> <i>Discussion Session</i> ADAPTING PROFESSIONAL LEARNING MODELS TO ATTEND TO TEACHERS' LEVELS OF APPROPRIATION OF PRACTICE Angela T Barlow, Middle Tennessee State University Alyson E. Lischka, Middle Tennessee State University Jeremy Strayer, Middle Tennessee State University James C. Willingham, James Madison University Kristin Hartland, Middle Tennessee State University Natasha Erika Gerstenschlager, Western Kentucky University Lucy Watson, Middle Tennessee State University <p>We present an evolution of models for demonstration lessons used in our four-year professional development project and engage session attendees in consideration of the manner in which different models engaged participants in taking up project goals.</p>	Salon 8	Session 119 <i>Mathematics Pedagogy and Instructional Practice</i> <i>Symposium</i> TECHNIQUE AND PURPOSE: SEPARATING AND INTEGRATING DOING AND THINKING IN REPRESENTATIONS OF PRACTICE Rob Wieman, Rowan University Orly Buchbinder, University of New Hampshire Kristen Bieda, Michigan State University Alice LaRue Joy Cook, University of Maryland Lorraine M Males, University of Nebraska, Lincoln Kathleen (Taffy) McAneny, West Chester University <p>Presenters will describe two approaches to teacher education. One stresses skillful performance of technique; the other critical analysis of purposes and effects. Presenters will describe the benefits and limitations of each of these approaches, and share efforts to integrate them.</p>	Salon 11
Session 117 <i>Equity and Mathematics Education</i> <i>Discussion Session</i> CLARIFYING THE ROLE OF EQUITY RESEARCH AROUND THE STANDARDS FOR MATHEMATICAL PRACTICE Anita A Wager, University of Wisconsin, Madison Tonya Bartell, Michigan State University Dan Battey, Rutgers University <p>In this session, we present a research-based framework for explicitly connecting equity to the Standards for Mathematical Practice. We will engage participants in a discussion of the framework by exploring intersections of the SMP and equitable mathematics teaching practices.</p>	Salon 9	Session 120 <i>Teaching and Learning with Technology</i> <i>Discussion Session</i> THE CCSS STATISTICS AND PROBABILITY STANDARDS: IMPLICATIONS FOR TEACHER PREPARATION Gail Burrill, Michigan State University Thomas Dick, Oregon State University Susan Peters, University of Louisville <p>An interactive discussion will focus on a technology-leveraged approach for developing understanding of basic statistical concepts. Given the CCSS, how can we help teachers make sense of a coherent approach to these concepts, typically new for most secondary teachers?</p>	Salon 12
Session 118 <i>Preservice Teacher Field Experiences</i> <i>Discussion Session</i> EMBEDDING MATHEMATICS TEACHER PREPARATION COURSES IN THE PK-12 SETTING Chepina Rumsey, University of Northern Iowa Rajeev Virmani, University of Saint Joseph Catherine Schwartz, East Carolina University Barbara Swartz, McDaniel College Dawn Marie Woods, Southern Methodist University <p>Participants will learn about exemplars of how MTEs integrate coursework into PK-12 school settings and engage in a discussion about the affordances and constraints of embedding mathematics methods courses in the PK-12 setting.</p>	Salon 10	Session 121 <i>Development of Mathematics Teacher Educators</i> <i>Discussion Session</i> I AM NEW TO MATHEMATICS TEACHER EDUCATION: NOW WHAT? Jennifer Chauvot, University of Houston Pier Angeli Junor Clarke, Georgia State University Sarasose Lynch, Westminster College <p>This session is designed for those who are new to the mathematics teacher education community. It will provide networking opportunities and a structure for establishing a mentoring support group. Participants will create an action plan for the upcoming year.</p>	Salon 13

**COACHES' RELATIONAL WORK IN SUPPORT OF
AMBITIOUS TEACHER LEARNING**

Nicole L Louie, University of Texas, El Paso

Lynsey Gibbons, Boston University

Melinda Knapp, Oregon State University, Cascades

Aimee Ellington, Virginia Commonwealth University

Joy Whitenack, Virginia Commonwealth University

Creating safe, trusting relationships—doing relational work—is an important aspect of supporting teacher development. We will examine how relational work is accomplished at three levels: one-on-one coaching; facilitation of teacher work groups; and system-level culture-building.

FRIDAY, FEBRUARY 10, 2017**11:30 AM - 1:00 PM****A M T E****LUNCH****Ballroom C/D**

Please join your colleagues for lunch.

**CONFERENCE HISTORICAL HIGHLIGHTS****20TH ANNUAL CONFERENCE, 2016****IRVINE, CA***General Session***Rebranding the Teaching Profession: Ideas
and Strategies for Effective Recruitment of
Mathematics Teachers**

Ed Dickey, University of South Carolina

*Judith Jacobs Lecture***Mathematics Teacher Education: Normal
Schools to Now. What's the Fit and Future
for AMTE?**

Francis (Skip) Fennell, McDaniel College

OVERVIEW OF FRIDAY AFTERNOON, FEBRUARY 10, 2017

	1:00 PM – 2:00 PM	2:15 PM - 3:00 PM
Ballroom B	124. <i>Reconsidering Video as a Tool to Support Teacher Learning</i> - Ball, Shaughnessy, & Garcia	139. <i>Mathematics in the Digital Age: Shifting Teachers' Practices and Tools</i> - Staley
Salon 1	125. <i>Fraction Learning Trajectories in Content Courses for Prospective K-8 Teachers</i> - Tobias, Feldman, Welder, & Olanoff	140. <i>Using Media Articles to Develop Teachers' Quantitative Literacy</i> - Dingman
Salon 2	126. <i>Using Rehearsals to Support Secondary Teacher Candidates' Use of Student Ideas in Whole-Class Discussions</i> - Jones & Campbell	141. <i>Examining the Play Phase of Mathematics Lessons Involving Computer Simulations</i> - Whitacre, Hensberry, & Findley
Salon 3	127. <i>Preservice Teachers' Constructions of Dynamic Geometry Sketches for Explaining and Exploring Trigonometry</i> - Brakoniecki, Glassmeyer, & Amador	142. <i>Preservice Secondary Teachers' Reflections on Engaging in a Practice-Based Assessment</i> - Hallman-Thrasher & Sturgill
Salon 4	137. <i>Technology's Role in a Calculus Course for Middle Grades Mathematics Teachers: A Multi-Institutional Perspective</i> - Klespis, Murawska, Driskell, & Jones	
Salon 5	138. <i>How Much is a Billion? Engaging Novice Teachers in a First Experience of Open-Ended Mathematics</i> - Munson, & Langer-Osuna	
Salon 6	128. <i>Learn How to Use Free Elementary Mathematics Curriculum in Your Courses</i> - Harris	143. <i>The Art of Formative Re-Engagement Lessons in the Mathematics Classroom for Preservice Teachers and Beyond</i> - Boakes
Salon 7	129. <i>Brief Report Session: ELLs</i> - Ewing, Martínez, Dibbs, & Rios	144. <i>Brief Report Session: Teacher Collaborations</i> - Gonulates & Murata
Salon 8	130. <i>StoryCircles: The Collective Creation of Stories of Practice by a Professional Learning Community</i> - Milewski, Herbst, Gursel, Boileau, Thanheiser, Crespo, Silver, & Horn	145. <i>Development of a Rubric to Assess PSTs' Noticing of Children's Mathematical Thinking: A Cross-Institutional Study</i> - Broderick, Appelgate, Dick, & Soto
Salon 9	131. <i>Adult Learning Theory: A Lens for Designing and Investigating Teacher Explorations With Statistical Variation</i> - Stokes-Levine	146. <i>Mathematics Teachers' Evaluation of Digital Instructional Materials</i> - Thomas & Edson
Salon 10	132. <i>Elementary Mathematical Writing: Research and Teaching Implications for Mathematics Educators</i> - Casa & Colonnese	147. <i>Theory into Practice: Internships as Meaningful Opportunities to Implement Formative Assessment Concepts</i> - Mitten
Salon 11	133. <i>Facilitating a Mathematics Professional Development Collaboration as Allies with Teacher-Colleagues</i> - Koestler, Amidon, Wager, & Foote	148. <i>Seeing What Was Once Seen</i> - Jackson, Buchheister, & Taylor
Salon 12	134. <i>Support Systems of Early Career Secondary Mathematics Teachers and Their Effects on Teacher Retention</i> - Amick	149. <i>Preparing Prospective Teachers of Students at Any Grade Level to Do Mathematical Modeling</i> - Galluzzo & Zbiek
Salon 13	135. <i>A Critical Analysis of Emerging High-Leverage Practices for Mathematics Specialists</i> - Baker, Larsen, Bailey, & Galanti	150. <i>Moving Prospective Mathematics Teachers From Instruments of Inequity Towards Agents of Change</i> - Marshall, Amidon, & Nance
Salon 14	136. <i>Developing a Statewide Community of Practice to Support Algebra Instruction</i> - Hudson, Ko, Mohr, Lee, Frost, Max, Taylor, & Hoffman	151. <i>Using Lesson Study as a Tool for Collaboration Between Mathematics Content and Methods Faculty</i> - Druken & Marzocchi

	3:30 PM - 4:15 PM	4:45 PM - 6:15 PM
Ballroom B	152. <i>Building Discourse to Foster Equity and Rigor in Mathematics</i> - Kinch	167. <i>Attending to Access, Equity, and Empowerment Matters for Each and Every Student: Beyond Courses and Workshops</i> - Strutchens
Salon 1	153. <i>Beyond the Rhetoric: Mathematics Teaching That Authentically Supports Growth Mindset</i> - Sun	
Salon 2	154. <i>Exploring Inservice Teachers' Perceptions of Professional Noticing</i> - Thomas & Dueber	
Salon 3	155. <i>Instructional Rounds as a Model of Yearlong Professional Development Support</i> - Krupa, Munakata, Rahman, & Monahan	
Salon 4	156. <i>Weaving Together Mathematics, Discourse, Community, and Power in Mathematics Teacher Professional Development Towards Equitable Systems</i> - Scroggins & Harper	
Salon 5	157. <i>After the Class: Building Scholarly Endeavors With Former Preservice Candidates to Foster Teacher Leadership</i> - Karp & Bush	
Salon 6	158. <i>Mathematics Teachers' Take-Up of Exploratory ("Rough Draft") Talk to Engage Students in Discourse</i> - Jansen	
Salon 7	159. <i>Brief Report Session: Algebra and Secondary Teachers</i> - Newton, Jung, Stehr, Trinter, & Sevim	
Salon 8	160. <i>Preservice Teachers' Conceptions and Misconceptions of Physical and Virtual Manipulatives</i> - Ortiz & Eisenreich	
Salon 9	161. <i>Using Classchatter to Mediate Discussion in Small Teacher Preparation Programs: A Case Study</i> - Dibbs	
Salon 10	162. <i>Building District Capacity to Deliver Effective Mathematics Professional Development</i> - Novak & Parker	
Salon 11	163. <i>Infusing Co-Teaching, Differentiation, and High Quality Mathematics Tasks: Creating a Unique Professional Development Model</i> - Harbour, Livers, Gleason, & Nalu	
Salon 12	164. <i>Developing and Studying the Use of Primary Source Projects to Teach Undergraduate Mathematics</i> - White & Clark	
Salon 13	165. <i>Advancing Inclusive Mathematics Education: A Case of Prospective Teacher Learning</i> - Tan	
Salon 14	166. <i>Preparing Emerging Teacher Leaders Through Statewide Partnerships</i> - Luebeck	

Session 124

Mathematics Pedagogy and Instructional Practice
Individual Session

Ballroom B

RECONSIDERING VIDEO AS A TOOL TO SUPPORT TEACHER LEARNING

Deborah Loewenberg Ball, University of Michigan
Meghan Shaughnessy, University of Michigan
Nicole Garcia, University of Michigan

Video records of teaching have become broadly available and are increasingly popular for use in teacher development. This session offers a framework for the use of video to support teachers' learning and focuses on ways to leverage their usage.

Session 125

Mathematics Content, Processes, and Practices
Individual Session

Salon 1

FRACTION LEARNING TRAJECTORIES IN CONTENT COURSES FOR PROSPECTIVE K-8 TEACHERS

Jennifer M. Tobias, Illinois State University
Ziv Feldman, Boston University
Rachael M. Welder, Western Washington University
Dana Olanoff, Widener University

The use of learning trajectories in teacher education programs has gained momentum with the inclusion of the Common Core State Standards. In this session, we will discuss a learning trajectory for fraction instruction in content courses for prospective K-8 teachers.

Session 126

Mathematics Pedagogy and Instructional Practice
Individual Session

Salon 2

USING REHEARSALS TO SUPPORT SECONDARY TEACHER CANDIDATES' USE OF STUDENT IDEAS IN WHOLE-CLASS DISCUSSIONS

Stephanie Jones, Fairmont State University
Matthew P. Campbell, West Virginia University

We share research and discuss current work around using rehearsals in secondary mathematics teacher education to coordinate practices of eliciting and responding to student reasoning and positioning students' reasoning as central in whole-class instruction.

Session 127

Teaching and Learning with Technology
Individual Session

Salon 3

PRESERVICE TEACHERS' CONSTRUCTIONS OF DYNAMIC GEOMETRY SKETCHES FOR EXPLAINING AND EXPLORING TRIGONOMETRY

Aaron Brakoniecki, Boston University
David Glassmeyer, Kennesaw State University
Julie Amador, University of Idaho

This session shares technology-driven trigonometric tasks used with 20 PSTs to influence their conceptual thinking about trigonometry, learning of alternate approaches to connect trigonometric concepts, and reflecting on student learning of trigonometric content—all while engaging with dynamic geometry sketches.

Session 128

AMTE Gold Sponsor
Individual Session

Salon 6

LEARN HOW TO USE FREE ELEMENTARY MATHEMATICS CURRICULUM IN YOUR COURSES

Pamela Harris, University of Texas, Austin

The content of *Bridges in Mathematics K-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 129

Equity and Mathematics Education

Salon 7

BRIEF REPORT SESSION: ELLS

MATHEMATICS IN MY VOICE: THE EXPERIENCE OF NON-NATIVE ENGLISH-SPEAKING PRESERVICE TEACHERS

Daniel Rios, Texas A&M University, Commerce
Rebecca Dibbs, Texas A&M University, Commerce

The students who matriculated from early ELL are now entering the teaching profession, but preparation of non-native English speaking (NEST) mathematics teachers has focused on undergraduate instruction. This grounded theory study investigated the experiences of NEST in their preservice mathematics program.

MATHEMATICS PRESERVICE TEACHERS LEARNING TO TEACH PRODUCTIVE STRUGGLE TO ALL STUDENTS, INCLUDING ELLS

James Ewing, Stephen F. Austin State University

Teachers should engage their students in productive struggle—students grappling to make sense of problems. This report discusses how to teach preservice teachers to do so for all students, including ELLs.

MATHEMATICS PRESERVICE TEACHERS' LEARNING TO LEARN TO TEACH CULTURALLY AND LINGUISTICALLY DIVERSE STUDENTS

José Manuel Martínez, Michigan State University

This study analyzes the efforts in a methods course for preservice teachers to learn to teach culturally and linguistically diverse students. Situated learning perspectives illustrate how PSTs planned refinement of their initial teaching repertoire based on the situatedness of their future practice.

Session 130 <i>Teacher Professional Development Symposium</i> STORYCIRCLES: THE COLLECTIVE CREATION OF STORIES OF PRACTICE BY A PROFESSIONAL LEARNING COMMUNITY Amanda Milewski, University of Michigan Patricio G Herbst, University of Michigan Umut Gursel, University of Michigan Nicolas Boileau, University of Michigan Eva Thanheiser, Portland State University Sandra Crespo, Michigan State University Edward Silver, University of Michigan Ilana Horn, Vanderbilt University Presenters will discuss StoryCircles — a form of professional education that elicits and develops teachers’ practices through collective scripting and visualization of lessons. We share critical components and patterns within various implementations of StoryCircles including both preservice and inservice teachers.	Salon 8	Session 133 <i>Equity and Mathematics Education Individual Session</i> FACILITATING A MATHEMATICS PROFESSIONAL DEVELOPMENT COLLABORATION AS ALLIES WITH TEACHER-COLLEAGUES Courtney Koestler, Ohio University Joel Amidon, University of Mississippi Anita A Wager, University of Wisconsin, Madison Mary Q Foote, Queens College, CUNY In this session, we will report initial findings from a professional development project where teacher educators explicitly positioned themselves as “allies” with grades 4-9 teachers in the planning and implementation of a weeklong teacher institute about equitable mathematics teaching and learning.	Salon 11
Session 131 <i>Teacher Professional Development Individual Session</i> ADULT LEARNING THEORY: A LENS FOR DESIGNING AND INVESTIGATING TEACHER EXPLORATIONS WITH STATISTICAL VARIATION Amy Stokes-Levine, University of Louisville I report on a study to investigate how dilemma, critical reflection, and rational discourse affect middle and secondary teachers’ understandings about statistical variation. Participants engage with activities to consider how PD informed by adult learning theory can enhance teachers’ understandings.	Salon 9	Session 134 <i>Teacher Professional Development Discussion Session</i> SUPPORT SYSTEMS OF EARLY CAREER SECONDARY MATHEMATICS TEACHERS AND THEIR EFFECTS ON TEACHER RETENTION Lisa Amick, University of Kentucky This discussion will center around data from a national survey focused on what types of activities early career secondary mathematics teachers are participating in, their perceptions of these activities, and how the activities influence their teaching practice and retention rates.	Salon 12
Session 132 <i>Mathematics Content, Processes, and Practices Individual Session</i> ELEMENTARY MATHEMATICAL WRITING: RESEARCH AND TEACHING IMPLICATIONS FOR MATHEMATICS EDUCATORS Tutita Casa, University of Connecticut Madelyn Colonnese, University of Connecticut Elementary students are expected to write during mathematics class. However, this practice has been ill-defined until recently. Engage in activities to learn about types of and purposes for mathematical writing and discuss implications for research and teaching.	Salon 10	Session 135 <i>Development of Mathematics Teacher Educators Discussion Session</i> A CRITICAL ANALYSIS OF EMERGING HIGH-LEVERAGE PRACTICES FOR MATHEMATICS SPECIALISTS Courtney Baker, George Mason University Shannon Larsen, University of Maine, Farmington Pam Bailey, Mary Baldwin University Terrie Galanti, George Mason University Our theorization of high-leverage practices for mathematics specialists will inform a discussion of connections between prior research, accreditation standards, and potentially productive coaching activities. This collaboration will advance shared understandings of math specialist roles and define directions for future research.	Salon 13

Session 136**Salon 14**

*School and University Partnerships and Projects
Symposium*

DEVELOPING A STATEWIDE COMMUNITY OF PRACTICE TO SUPPORT ALGEBRA INSTRUCTION

Rick A. Hudson, University of Southern Indiana
Yi-Yin Ko, Indiana State University
Doris Mohr, University of Southern Indiana
Jean Sangmin Lee, University of Indianapolis
Jodi Frost, Indiana State University
Brooke Max, Purdue University
Christine Taylor, Indiana State University
Andrew Hoffman, Purdue University

This panel discussion will describe a statewide model for the establishment of communities of practices among secondary teachers and between institutions of higher education. We will also discuss factors associated with developing and assessing the impact of these communities.

FRIDAY, FEBRUARY 10, 2017
1:00 PM - 3:00 PM
Session 137**Salon 4**

*Teaching and Learning with Technology
Extended Session*

TECHNOLOGY'S ROLE IN A CALCULUS COURSE FOR MIDDLE GRADES MATHEMATICS TEACHERS: A MULTI- INSTITUTIONAL PERSPECTIVE

Mark Klespis, Sam Houston State University
Jaclyn Murawska, Saint Xavier University
Shannon Driskell, University of Dayton
Dusty Jones, Sam Houston State University

We discuss how technology aids in the conceptual understanding of calculus and describe our curriculum. Participants will work on technology-related activities then engage in whole-group discussion on topics and technology to include in a course for middle grades mathematics teachers.

Session 138**Salon 5**

*Mathematics Pedagogy and Instructional Practice
Extended Session*

HOW MUCH IS A BILLION? ENGAGING NOVICE TEACHERS IN A FIRST EXPERIENCE OF OPEN-ENDED MATHEMATICS

Jen Munson, Stanford University
Jennifer Langer-Osuna, Stanford University

The math methods course is a critical site for reshaping novice teachers' vision of math teaching and learning. In this workshop, we will engage in and examine the affordances of an initial immersive experience designed to launch this process.

Session 139

*NCSM Presidential Exchange Session
Individual Session*

Ballroom B

MATHEMATICS IN THE DIGITAL AGE: SHIFTING TEACHERS' PRACTICES AND TOOLS

John William Staley, National Council of Supervisors of Mathematics

Supporting teachers as they shift teaching practices and tools in the mathematics classroom is key to making mathematics more meaningful and relevant. Participants will consider leadership actions and tools to support the teaching and learning of mathematics that makes mathematics more accessible for all students.

Session 140

*Mathematics Content, Processes, and Practices
Individual Session*

Salon 1

USING MEDIA ARTICLES TO DEVELOP TEACHERS' QUANTITATIVE LITERACY

Shannon Dingman, University of Arkansas

This session provides an overview of efforts to enhance the quantitative literacy skills of inservice and preservice mathematics teachers through use of media articles and graphics in coursework and PD. Examples of tasks and implications for teacher education will be shared.

Session 141

*Teaching and Learning with Technology
Individual Session*

Salon 2

EXAMINING THE PLAY PHASE OF MATHEMATICS LESSONS INVOLVING COMPUTER SIMULATIONS

Ian Whitacre, Florida State University
Karina K. R. Hensberry, University of South Florida, St. Petersburg
Kelly Findley, Florida State University

We examine play within middle-school mathematics lessons involving PhET interactive simulations. We identify four characteristics of play in sim-based lessons, illustrate the advantages and disadvantages of each version of play observed, and discuss implications of these for teaching with technology.

Session 142

*Mathematics Pedagogy and Instructional Practice
Individual Session*

Salon 3

PRESERVICE SECONDARY TEACHERS' REFLECTIONS ON ENGAGING IN A PRACTICE-BASED ASSESSMENT

Allyson Hallman-Thrasher, Ohio University
Derek Joseph Sturgill, Ohio University

We share findings of a practice-based assessment of preservice secondary teachers' skills in responding to student misconceptions. We compare our analysis of their interactions with a 'standardized student' with the preservice teachers' own analysis of and reflections on the assessment.

Session 143

*Mathematics Pedagogy and Instructional Practice
Individual Session*

Salon 6

THE ART OF FORMATIVE RE-ENGAGEMENT LESSONS IN THE MATHEMATICS CLASSROOM FOR PRESERVICE TEACHERS AND BEYOND

Norma Boakes, Stockton University

Teachers often re-teach when students struggle with a math concept. However, the best way to address issues is through formative re-engagement lessons. These lessons take what's already known about learners and re-engages them in a way that deepens math understanding.

Session 144

Teacher Professional Development

Salon 7

BRIEF REPORT SESSION: TEACHER COLLABORATIONS

COLLECTIVE CONCEPTUAL ORIENTATIONS AND TEACHER LEARNING IN LESSON STUDY

Aki Murata, University of Florida

The study examined how collective orientations of lesson study groups guided teacher learning processes as well as created different learning opportunities for students in research lessons.

FACTORS CONTRIBUTING TO TEACHERS' SELF-INITIATED COLLABORATIONS

Funda Gonulates, Northern Kentucky University

This case study exploring mathematics teachers' self-initiated collaborations, provided evidence that physical, practical and personal-interpersonal factors contributed to the frequency and directionality of teachers' collaborative interactions. This study informs teacher educators how to support teachers in building a collaborative culture.

Session 145

*Mathematics Pedagogy and Instructional Practice
Individual Session*

Salon 8

DEVELOPMENT OF A RUBRIC TO ASSESS PSTS' NOTICING OF CHILDREN'S MATHEMATICAL THINKING: A CROSS-INSTITUTIONAL STUDY

Shawn Broderick, Weber State University
Mollie Appelgate, Iowa State University
Lara Kristen Dick, Bucknell University
Melissa Marie Soto, San Diego State University

To assess preservice teachers' growth in their ability to notice children's mathematical thinking, we developed a rubric based on the Jacobs, Lamb, and Philipp noticing framework. During this session, participants will use the rubric to assess preservice teacher work.

Session 146 <i>Teaching and Learning with Technology</i> <i>Individual Session</i> MATHEMATICS TEACHERS' EVALUATION OF DIGITAL INSTRUCTIONAL MATERIALS Amanda Thomas, University of Nebraska, Lincoln Alden J. Edson, Michigan State University <p>This session will focus on K-8 inservice teachers' evaluation of digital instructional materials. Participants will become familiar with findings of a research study and an evaluation tool that can be incorporated in their own practice.</p>	Salon 9	Session 150 <i>Equity and Mathematics Education</i> <i>Individual Session</i> MOVING PROSPECTIVE MATHEMATICS TEACHERS FROM INSTRUMENTS OF INEQUITY TOWARDS AGENTS OF CHANGE Anne Marie Marshall, Lehman College Joel Amidon, University of Mississippi Rebecca Smith Nance, University of Mississippi <p>This session describes a project that engaged preservice teachers in a social justice mathematics module designed to develop awareness and agency. We will provide a module description, present our research findings, and engage in critical dialogue about the project.</p>	Salon 13
Session 147 <i>Preservice Teacher Field Experiences</i> <i>Individual Session</i> THEORY INTO PRACTICE: INTERNSHIPS AS MEANINGFUL OPPORTUNITIES TO IMPLEMENT FORMATIVE ASSESSMENT CONCEPTS Carolyn Mitten, University of Florida <p>Internships provide unique opportunities for PSTs to put theoretical ideas into practice. This session highlights how a mathematics education course engaged PSTs in formative assessment during their internship and the impact on their formative assessment knowledge and practices.</p>	Salon 10	Session 151 <i>Development of Mathematics Teacher Educators</i> <i>Individual Session</i> USING LESSON STUDY AS A TOOL FOR COLLABORATION BETWEEN MATHEMATICS CONTENT AND METHODS FACULTY Bridget Druken, California State University, Fullerton Alison S Marzocchi, California State University, Fullerton <p>University faculty engaged in lesson study with the purpose of fostering collaboration between mathematics methods and mathematics content instructors. This session will report on (1) logistics for facilitating cross-departmental lesson study and (2) the reported benefits from faculty participation.</p>	Salon 14
Session 148 <i>Equity and Mathematics Education</i> <i>Individual Session</i> SEEING WHAT WAS ONCE SEEN Christa Jackson, Iowa State University Elizabeth E Buchheister, University of South Carolina Cynthia E. Taylor, Millersville University of Pennsylvania <p>In this session, we report the results of a study that explored how prospective teachers perceived equity issues by examining what they noticed in five authentic classroom vignettes on students' mathematical thinking and its relation to culture, home, and community.</p>	Salon 11		
Session 149 <i>Mathematics Content, Processes, and Practices</i> <i>Individual Session</i> PREPARING PROSPECTIVE TEACHERS OF STUDENTS AT ANY GRADE LEVEL TO DO MATHEMATICAL MODELING Ben Galluzzo, Shippensburg University Rose Mary Zbiek, Pennsylvania State University <p>We target how prospective teachers for early grades through high school can learn mathematical modeling as a process while using only school mathematics. We also embrace the challenge of how to bring mathematical modeling into packed programs with crowded curricula.</p>	Salon 12		

Session 152

*TODOS Presidential Exchange Session
Individual Session*

Ballroom B

BUILDING DISCOURSE TO FOSTER EQUITY AND RIGOR IN MATHEMATICS

Diane Kinch, TODOS: Mathematics for ALL

This session will engage participants in activities that foster equity and rigor in mathematics in a collaborative language rich environment. We will engage in meaningful, high cognitive demand, mathematical thinking and academic discourse.

Session 153

*Mathematics Pedagogy and Instructional Practice
Individual Session*

Salon 1

BEYOND THE RHETORIC: MATHEMATICS TEACHING THAT AUTHENTICALLY SUPPORTS GROWTH MINDSET

Kathy Liu Sun, Santa Clara University

This session is intended for those interested in supporting mathematics teachers to move beyond the growth mindset rhetoric and align their mathematics instructional practices to consistently communicate the message that all students can grow their mathematical ability.

Session 154

*Teacher Professional Development
Individual Session*

Salon 2

EXPLORING INSERVICE TEACHERS' PERCEPTIONS OF PROFESSIONAL NOTICING

Jonathan Norris Thomas, University of Kentucky
David Dueber, University of Kentucky

This study is focused upon inservice teachers' perceptions of professional noticing within a statewide professional development initiative. Focus groups were conducted with classroom, special education, and intervention teachers to ascertain the perceived viability and enactment possibilities regarding professional noticing.

Session 155

*Teacher Professional Development
Individual Session*

Salon 3

INSTRUCTIONAL ROUNDS AS A MODEL OF YEARLONG PROFESSIONAL DEVELOPMENT SUPPORT

Erin Elizabeth Krupa, Montclair State University
Mika Munakata, Montclair State University
Zareen Rahman, Montclair State University
Ceire Monahan, Montclair State University

Isolated professional development does not typically support sustained changes to instructional practices. We propose an alternative model that involves both a Summer Institute and Instructional Rounds, where during the school year teachers observe and provide meaningful feedback to each other.

Session 156

*Teacher Professional Development
Individual Session*

Salon 4

WEAVING TOGETHER MATHEMATICS, DISCOURSE, COMMUNITY, AND POWER IN MATHEMATICS TEACHER PROFESSIONAL DEVELOPMENT TOWARDS EQUITABLE SYSTEMS

Ashley Danielle Scroggins, University of Colorado, Boulder
Frances Harper, Michigan State University

This session will explore a sequence of PD activities, as planned and enacted, aimed at incorporating four strands of an equitable mathematics system - mathematics, discourse, community, and power. We will consider implications for future PD that incorporates these strands.

Session 157

*Mathematics Pedagogy and Instructional Practice
Individual Session*

Salon 5

AFTER THE CLASS: BUILDING SCHOLARLY ENDEAVORS WITH FORMER PRESERVICE CANDIDATES TO FOSTER TEACHER LEADERSHIP

Karen Karp, Johns Hopkins University
Sarah B Bush, Bellarmine University

This presentation describes an initiative engaging former preservice teachers in scholarly work. We examine how brainstorming various ideas and their alignment to content strands and student outcomes influenced novice teachers' instruction and their growth as emerging scholars.

Session 158

*Mathematics Pedagogy and Instructional Practice
Individual Session*

Salon 6

MATHEMATICS TEACHERS' TAKE-UP OF EXPLORATORY ("ROUGH DRAFT") TALK TO ENGAGE STUDENTS IN DISCOURSE

Amanda Jansen, University of Delaware

Both middle school mathematics student teachers and experienced secondary teacher leaders participated in online study groups to learn to promote the use of "rough draft" talk in classroom discourse. Findings suggest a continuum of teachers' learning about engaging students.

Session 159 <i>Mathematics Content, Processes, and Practices</i> BRIEF REPORT SESSION: ALGEBRA AND SECONDARY TEACHERS ALGEBRA AS A TOOL: USING CONNECTIONS, MODELING, AND TECHNOLOGY IN TEACHER PREPARATION Eryn Michelle Stehr, Michigan State University Hyunyi Jung, Calvin College Jill Newton, Purdue University <p>In this presentation, we will discuss varying aspects of five secondary mathematics teacher education programs related to preservice teachers' opportunities to encounter modeling, technology, and connections as they learn algebra and learn to teach algebra.</p> PRESERVICE SECONDARY MATHEMATICS TEACHERS' UNDERSTANDING OF NON-LINEAR FUNCTIONS: AN EXAMINATION OF THEIR SHAPE THINKING Volkan Sevim, University of South Carolina, Beaufort Christine Trinter, Virginia Commonwealth University <p>Presenters will share findings from a qualitative study focused on preservice secondary mathematics teachers' static and emergent shape thinking when engaging with non-linear functions.</p>	Salon 7
Session 160 <i>Teaching and Learning with Technology</i> <i>Individual Session</i> PRESERVICE TEACHERS' CONCEPTIONS AND MISCONCEPTIONS OF PHYSICAL AND VIRTUAL MANIPULATIVES Enrique Ortiz, University of Central Florida Heidi Eisenreich, Georgia Southern University <p>It is necessary to assess virtual manipulatives' impact on the learning process. A possible approach is a framework that combines the well-known concrete, pictorial and abstract levels with a proposed Virtual-level. We will discuss preservice teachers' understanding of the framework.</p>	Salon 8
Session 161 <i>Teaching and Learning with Technology</i> <i>Individual Session</i> USING CLASSCHATTER TO MEDIATE DISCUSSION IN SMALL TEACHER PREPARATION PROGRAMS: A CASE STUDY Rebecca Dibbs, Texas A&M University, Commerce <p>Engaging students in authentic discussions in class about equity can be very difficult. The purpose of this case study was to investigate the efficacy of using Classchatter to provide preservice middle-school teachers such discussions while preserving their anonymity.</p>	Salon 9
Session 162 <i>School and University Partnerships and Projects</i> <i>Individual Session</i> BUILDING DISTRICT CAPACITY TO DELIVER EFFECTIVE MATHEMATICS PROFESSIONAL DEVELOPMENT Jodie Novak, University of Northern Colorado Frieda Parker, University of Northern Colorado <p>We describe a scalable, university-district partnership where faculty work with district math coaches to train teachers to offer high quality mathematical professional development to their peers. Evaluation data suggest the model is viable, improves instruction, and builds leadership capacity.</p>	Salon 10
Session 163 <i>Equity and Mathematics Education</i> <i>Individual Session</i> INFUSING CO-TEACHING, DIFFERENTIATION, AND HIGH QUALITY MATHEMATICS TASKS: CREATING A UNIQUE PROFESSIONAL DEVELOPMENT MODEL Kristin E Harbour, University of Alabama Stefanie D Livers, University of Alabama Jim Gleason, University of Alabama Nicolette Nalu, University of Alabama <p>A change in instructional and collaborative practices is critical in creating equitable mathematics instruction. We highlight a structured professional development framework and results from a project with elementary mathematics and special education teachers addressing co-teaching, differentiation, and high quality tasks.</p>	Salon 11
Session 164 <i>Mathematics Content, Processes, and Practices</i> <i>Individual Session</i> DEVELOPING AND STUDYING THE USE OF PRIMARY SOURCE PROJECTS TO TEACH UNDERGRADUATE MATHEMATICS Diana White, University of Colorado, Denver Kathleen Clark, Florida State University <p>We report on a project to design and implement primary source projects in undergraduate mathematics courses, as well as to investigate how student perceptions of the nature of mathematics evolve and how their written argumentation develops.</p>	Salon 12
Session 165 <i>Equity and Mathematics Education</i> <i>Individual Session</i> ADVANCING INCLUSIVE MATHEMATICS EDUCATION: A CASE OF PROSPECTIVE TEACHER LEARNING Paulo Tan, University of Tulsa <p>Despite the push for equity in mathematics education, students with disabilities continue to lack access to and equitable achievement in rich mathematics. This presentation describes a case of prospective teacher learning toward inclusive mathematics education centered on an equity-oriented tool.</p>	Salon 13

PREPARING EMERGING TEACHER LEADERS THROUGH STATEWIDE PARTNERSHIPS

Jennifer Luebeck, Montana State University

How is teacher leadership defined and enacted? Can teachers' individual talents and unique knowledge bases be channeled into a coherent leadership program? Learn how we prepare secondary teachers for leadership roles in mathematics and science teacher education and professional learning.



CONFERENCE HISTORICAL HIGHLIGHTS

10TH ANNUAL CONFERENCE, 2006

TAMPA, FL

Preconference Symposium

New Directions and Focus for Standards, Curricula, and Assessments

Randall Charles, San Jose State University
 Francis (Skip) Fennell, McDaniel College
 Cathy Seeley, NCTM President
 Rose Mary Zbiek, Penn State University
 Janie Schielak, Texas A&M University

Judith Jacobs Lecture

Preparing Elementary Teachers: The Role of Reasoning about Numbers and Quantities

Judith Sowder, San Diego State University

Closing Session

NCTM's Standards for the Mathematics Teaching Profession Then and Now: The History, Landscape, and Content of a Living Document

Tami Martin, Illinois State University
 Glenda Lappan, Michigan State University
 William Speer, University of Nevada – Las Vegas

**Judith Jacobs Lecture****Ballroom B****ATTENDING TO ACCESS, EQUITY, AND EMPOWERMENT MATTERS FOR EACH AND EVERY STUDENT: BEYOND COURSES AND WORKSHOPS**

Marilyn E. Strutchens, Auburn University

In this session, access, equity, and empowerment matters related to mathematics education will be discussed. The discussion will include challenges faced by mathematics teacher educators in helping prospective and inservice teachers attend to these issues beyond conversations and activities in courses and workshops. We will look at what has been accomplished over the past twenty-five years and what still needs to be done.

**AMTE CONFERENCE DINNER****Ballroom C/D**

Please join your colleagues for a dinner celebrating AMTE's 25th Anniversary.



Ballroom C/D

AMTE BREAKFAST AND AFFILIATE MEETINGS

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 8 and 9 of the program.



CONFERENCE HISTORICAL HIGHLIGHTS

13TH ANNUAL CONFERENCE, 2009

ORLANDO, FL

*Opening General Session***The Preparation Gap: Teacher Education for Middle-school Mathematics in Six Countries**

William Schmidt, Michigan State University

*Judith Jacobs Lecture***Going to War with the Army You Have**

Jeremy Kilpatrick, University of Georgia

*Closing Session***Mathematics Teacher Education in a Changing Policy Context: The Evolving Standards Movement, International Trends, and Research**

Joan Ferrini-Mundy, National Science Foundation

OVERVIEW OF SATURDAY MORNING, FEBRUARY 11, 2017

	8:00 AM - 9:00 AM	9:15 AM - 10:15 AM
Ballroom B	170. <i>Next Steps for Methods: Building Support for Scholarly Practices in Mathematics Methods Courses</i> - Sanchez, Kastberg, & Tyminski	183. <i>Support Makes a Difference: Models and Plans for Supporting Novices, Inservice Teachers, and Mathematics Specialists/Leaders</i> - Fennell, Kobett, & Wray
Salon 1	171. <i>Effectiveness of Diagnostic Interviews: Prospective Teachers' Assessment of Student Understanding</i> - Poling, Moss, & Goodson-Espy	184. <i>Becoming a Mathematics Teacher Educator: What Coordinating Three Different Points of View Reveals</i> - Przybyla-Kuchek & Diamond
Salon 2	172. <i>Strategies for Supporting Inservice and Preservice Teachers to Implement Novel Instructional Practices</i> - Colonnese & Casa	185. <i>Increasing the Preparation of Preservice Secondary Teachers to Teach Statistics</i> - Lovett
Salon 3	173. <i>Common Core Geometry: Preparing Teachers Across the Grades</i> - Cirillo, Hummer, & Cox	186. <i>Building Mathematical Knowledge for Teaching in Content Courses for Secondary Teachers: Geometry and Beyond</i> - Lischka, Strayer, Watson, & Quinn
Salon 4	174. <i>The Forgotten Middle: Preparation of Middle School Mathematics Teachers</i> - Cady & Layton	187. <i>Characterizing Anticipated Conversations: What Do Teachers Plan to Ask Individual Children About Their Fraction Strategies?</i> - Hewitt, Jessup, Jacobs, & Baker
Salon 5	175. <i>Informing Instructional Practice and Pedagogical Preparation Through Mathematical Modeling</i> - Safi & Abassian	188. <i>Vertical Grouping Around Mathematical Tasks: A Collaborative Learning Model</i> - Wilburne & Franz
Salon 6	176. <i>Teachers' Use of the IGS Framework to Design and Implement Tasks in Secondary Classrooms</i> - Cayton, Sherman, & Funsch	189. <i>Developing Mathematics Teachers' TPACK and Technology Evaluation Abilities</i> - Smith & Shin
Salon 7	177. <i>Brief Report Session: Learning Instructional Practice in Methods Courses</i> - Bose, Ebby, & Ochieng	190. <i>Brief Report Session: Teaching and Learning with Technology</i> - Arnold, Trocki, & Nickels
Salon 8	178. <i>Supporting Teacher Learning Through Collaboration and Context: The Case of a Math Talk PLC</i> - Disney	191. <i>Exploring Math Teachers' Circles as a Complement to Professional Development Models for Enhancing Mathematical Knowledge</i> - Waller & Richardson
Salon 9	179. <i>Development of Teachers' Collaborative and Mathematical Practices in a Synchronous Dynamic Mathematics Environment</i> - Alqahtani, Weimar, & Powell	192. <i>Barriers to Building on Student Mathematical Thinking</i> - Stockero, Van Zoest, Leatham, & Peterson
Salon 10	180. <i>Testing the Feasibility of Preparing Elementary Mathematics Teachers to Teach the Common Core</i> - Berk, Hiebert, Dyson, Young, Mixell, & DiNapoli	193. <i>Promoting Teacher Learning: A Framework for Evaluating the Educative Features of Mathematics Curriculum Materials</i> - Quebec Fuentes
Salon 11	181. <i>Advocacy Efforts by AMTE Affiliates</i> - Yoder & Stump	194. <i>Embedding Culturally Responsive Teaching in Mathematics Classrooms by Utilizing Anchor Charts with Urban Terminology</i> - Glenn-White
Salon 12	182. <i>Implications for the Preparation of Mathematics Education Doctoral Students From a Recent Research Study</i> - Shih & Reys	195. <i>Summer Math Academy for Early Learners: Varied Field Experiences for Preservice Teachers</i> - Cooper, Kerschen, & Shelton

	10:30 AM - 11:30 AM
Ballroom B	196. <i>Global Perspectives on Preservice Teacher Preparation: Topics From ICME 13-</i> Musgrave, Pugalee, Bezuk, Burton, & Conner
Salon 1	197. <i>Differences in Structure: How Implementation of SMP 7 Differs for Mathematical and Statistical Standards-</i> Casey & Bostic
Salon 2	198. <i>Number Talk Professional Learning Communities: Scaling Up Through Online Professional Development Facilitation-</i> Baldinger & Wyberg
Salon 3	199. <i>Learning to Support Collective Argumentation: Consistencies Between Interpretations From Coursework and Teaching Actions-</i> Conner, Park, Gomez, Salaam, Zhuang, & Foster
Salon 4	200. <i>Learning From Practice: Developing Elementary Mathematics Teachers' Noticing-</i> Beattie, Smith, & Heaton
Salon 5	201. <i>What Knowledge is Used in Giving an Explanation? Enacting Mathematical Knowledge for Teaching in Practice-</i> Snider
Salon 6	202. <i>Working Across Institutional Boundaries: Developing and Piloting Assessments of Instructional Practice for Elementary Methods Courses-</i> Selling, Dumitrascu, Lee, Kemmerle, & Garcia
Salon 7	203. <i>Brief Report Session: Enhancing Instructional Practice-</i> Gil, King, Nurnberger-Haag, & Fraivillig
Salon 8	204. <i>Using Children's Authentic Claims to Consider the Role of Argument in the Classroom-</i> Kline & Kasmer
Salon 9	205. <i>Measuring Co-Teaching Strategies During Clinical Experiences-</i> Junor Clarke, Sears, Brosnan, Riggs, Oloff-Lewis, & Grady
Salon 10	206. <i>Examining Pinterest as a Mathematics Curriculum Resource for Preservice Teachers-</i> Wessman-Enzinger & Hertel
Salon 11	207. <i>Examining Preservice Secondary Mathematics Teachers' Static and Emergent Shape Thinking When Engaging With Non-Linear Functions-</i> Trinter & Sevim
Salon 12	208. <i>Using Math Teachers' Circles for Professional Development With a Focus on Problem Posing-</i> Bolognese & Steward

Session 170

*Development of Mathematics Teacher Educators
Individual Session*

Ballroom B

NEXT STEPS FOR METHODS: BUILDING SUPPORT FOR SCHOLARLY PRACTICES IN MATHEMATICS METHODS COURSES

Wendy B Sanchez, Kennesaw State University
Signe Kastberg, Purdue University
Andrew M. Tyminski, Clemson University

Research on mathematics methods illustrating diversity in the use of frameworks, goals, and activities will be shared. Participants will discuss benefits of diversity in collaboration and scholarly inquiry drawing from experiences with frameworks, goals, and activities used in mathematics methods.

Session 171

*Preservice Teacher Field Experiences
Individual Session*

Salon 1

EFFECTIVENESS OF DIAGNOSTIC INTERVIEWS: PROSPECTIVE TEACHERS' ASSESSMENT OF STUDENT UNDERSTANDING

Lisa Poling, Appalachian State University
Diana Moss, Appalachian State University
Tracy Goodson-Espy, Appalachian State University

In this session, we will explore the use of diagnostic interviews in field experiences to negotiate prospective teachers' understanding and misconceptions of mathematical content knowledge and the impact it may have on classroom experiences.

Session 172

*School and University Partnerships and Projects
Individual Session*

Salon 2

STRATEGIES FOR SUPPORTING INSERVICE AND PRESERVICE TEACHERS TO IMPLEMENT NOVEL INSTRUCTIONAL PRACTICES

Madelyn Colonnese, University of Connecticut
Tutita Casa, University of Connecticut

Mathematics teacher educators are charged with educating preservice teachers about novel instructional practices, and inservice teachers are expected to implement them. Participants will discuss ways to support both groups to implement practices that push them beyond their current understanding.

Session 173

*Mathematics Content, Processes, and Practices
Symposium*

Salon 3

COMMON CORE GEOMETRY: PREPARING TEACHERS ACROSS THE GRADES

Michelle Cirillo, University of Delaware
Jenifer Hummer, University of Delaware
Dana C Cox, Miami University

In this multi-faceted presentation, we will consider the current state of teacher preparation for teaching Geometry according to the standards and discuss recommendations for improvement. Under consideration will be the three "streams" of Geometry outlined in the standards progressions document.

Session 174

*Mathematics Education Policy and Program Issues
Discussion Session*

Salon 4

THE FORGOTTEN MIDDLE: PREPARATION OF MIDDLE SCHOOL MATHEMATICS TEACHERS

Jo Ann Cady, University of Tennessee
Rebecca D Layton, University of Tennessee, Knoxville

This session will summarize the current licensing requirements for middle grades teachers and engage participants in a discussion of how best to prepare these teachers. While focusing on mathematics, we expand the conversation to include STEM teachers.

Session 175

*Mathematics Pedagogy and Instructional Practice
Individual Session*

Salon 5

INFORMING INSTRUCTIONAL PRACTICE AND PEDAGOGICAL PREPARATION THROUGH MATHEMATICAL MODELING

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

Teacher education programs seek to engage teachers in meaningful experiences to teach mathematics with a deep understanding while learning effective ways to prepare students. This presentation focuses on the impact of modeling in informing teachers' instructional practice and pedagogical preparation.

Session 176

*Teaching and Learning with Technology
Individual Session*

Salon 6

TEACHERS' USE OF THE IGS FRAMEWORK TO DESIGN AND IMPLEMENT TASKS IN SECONDARY CLASSROOMS

Charity Cayton, East Carolina University
Milan Sherman, Drake University
Alexandra Funsch, East Carolina University

This session focuses on teachers' use of the Interactive Geometry Software Framework to design tasks and implement these tasks with secondary students. Results and implications of our findings will be shared for tasks as written and as implemented.

<p>Session 177 Salon 7 <i>Mathematics Pedagogy and Instructional Practice</i></p> <p>BRIEF REPORT SESSION: LEARNING INSTRUCTIONAL PRACTICE IN METHODS COURSES</p> <p>"WHERE DO I EVEN START?!": REHEARSING PROBLEM SOLVING PRACTICES IN A MATHEMATICS METHODS COURSE</p> <p>Enakshi Bose, Louisville, KY</p> <p>Reporting from the field, I describe and examine a semester-long assignment in an undergraduate elementary methods course to develop prospective teachers' capacity to solve problems and communicate reasoning and to rehearse moves and practices to lead mathematically productive discussions.</p> <p>BELLRINGERS IN METHODS COURSES: A TOOL FOR DEVELOPING INSTRUCTIONAL PRACTICE</p> <p>Mary A. Ochieng, Western Michigan University</p> <p>I report on the use of bellringers in a middle school methods course and how in addition to preparing preservice teachers to effectively use bellringers, it also provided an opportunity to address issues related to mathematics and instructional practice.</p> <p>DEVELOPING CORE PRACTICES THROUGH NUMBER TALKS IN AN ELEMENTARY METHODS COURSE</p> <p>Caroline Ebby, University of Pennsylvania</p> <p>In this session, we explore trajectories of novice teacher learning as they developed proficiency with the instructional activity of a Number Talk as well as the extent to which this learning transferred to their mathematics instruction more broadly.</p>	<p>Session 180 Salon 10 <i>Mathematics Content, Processes, and Practices Symposium</i></p> <p>TESTING THE FEASIBILITY OF PREPARING ELEMENTARY MATHEMATICS TEACHERS TO TEACH THE COMMON CORE</p> <p>Dawn Berk, University of Delaware James Hiebert, University of Delaware Nancy Dyson, University of Delaware Siobahn Young, University of Delaware Robert Anthony Mixell, University of Delaware Joseph DiNapoli, University of Delaware</p> <p>We describe the outcomes of testing a hypothesis, arising from a previous large-scale study, with far-reaching policy implications: If preservice elementary teachers do not spend enough time studying a mathematics topic, they are significantly less prepared to teach it well.</p>
<p>Session 178 Salon 8 <i>Teacher Professional Development Individual Session</i></p> <p>SUPPORTING TEACHER LEARNING THROUGH COLLABORATION AND CONTEXT: THE CASE OF A MATH TALK PLC</p> <p>Andria Disney, Georgia Southern University</p> <p>This session explores how a professional learning community supported inservice teacher learning around planning for and facilitating productive mathematics discourse in elementary classrooms that used a non-reform mathematics curriculum. Key findings and promising practices from the study will be shared.</p>	<p>Session 181 Salon 11 <i>Mathematics Education Policy and Program Issues Discussion Session</i></p> <p>ADVOCACY EFFORTS BY AMTE AFFILIATES</p> <p>Gina Borgioli Yoder, Indiana University, Indianapolis Sheryl Stump, Ball State University</p> <p>Our goal is to facilitate discussion on the role of AMTE affiliates in issues of advocacy, D'Ambrosio's "living contradictions" that might exist between our beliefs and practices and to generate concrete ideas for action to address those contradictions.</p>
<p>Session 179 Salon 9 <i>Teaching and Learning with Technology Individual Session</i></p> <p>DEVELOPMENT OF TEACHERS' COLLABORATIVE AND MATHEMATICAL PRACTICES IN A SYNCHRONOUS DYNAMIC MATHEMATICS ENVIRONMENT</p> <p>Muteb M Alqahtani, SUNY, Cortland Stephen Weimar, The Math Forum at NCTM Arthur Belford Powell, Rutgers University</p> <p>We report on how two groups of secondary teachers collaborated synchronously in an online dynamic geometry environment to construct geometrical figures and solve geometrical problems. Our analysis shows how features of the environment influenced teachers' collaborative and mathematical practices.</p>	<p>Session 182 Salon 12 <i>Development of Mathematics Teacher Educators Discussion Session</i></p> <p>IMPLICATIONS FOR THE PREPARATION OF MATHEMATICS EDUCATION DOCTORAL STUDENTS FROM A RECENT RESEARCH STUDY</p> <p>Jeffrey Shih, University of Nevada, Las Vegas Robert Reys, University of Missouri</p> <p>This session will report results from over 500 doctoral graduates in mathematics education. Information about program length and the graduates' self-assessment of program components will be used to generate discussion about ways that doctoral preparation can be strengthened.</p>

Session 183

*School and University Partnerships and Projects
Discussion Session*

Ballroom B

SUPPORT MAKES A DIFFERENCE: MODELS AND PLANS FOR SUPPORTING NOVICES, INSERVICE TEACHERS, AND MATHEMATICS SPECIALISTS/LEADERS

Francis (Skip) Fennell, McDaniel College
Beth McCord Kobett, Stevenson University
Jonathan Wray, McDaniel College

This session defines and addresses the support needed for mathematics teachers and teacher leaders. It will engage participants in discussing the type and levels of support requested and provided to preservice and novice teachers, inservice teachers, and mathematics specialists/leaders.

Session 184

*Development of Mathematics Teacher Educators
Individual Session*

Salon 1

BECOMING A MATHEMATICS TEACHER EDUCATOR: WHAT COORDINATING THREE DIFFERENT POINTS OF VIEW REVEALS

Julia Przybyla-Kuchek, University of Georgia
Jaime Marie Diamond, University of Georgia

Attendees will reflect on experiences that contributed to their development as MTEs and discuss the self-reflections of three developing MTEs. We aim to identify important features that comprise the complex terrain that is MTE development.

Session 185

*Mathematics Content, Processes, and Practices
Individual Session*

Salon 2

INCREASING THE PREPARATION OF PRESERVICE SECONDARY TEACHERS TO TEACH STATISTICS

Jennifer Lovett, Middle Tennessee State University

This session will discuss the results of a large-scale study on preservice secondary teachers' statistical knowledge and confidence to teach statistics to assist teacher educators in designing units for methods courses to increase PSTs' preparedness to teach statistics.

Session 186

*Mathematics Content, Processes, and Practices
Discussion Session*

Salon 3

BUILDING MATHEMATICAL KNOWLEDGE FOR TEACHING IN CONTENT COURSES FOR SECONDARY TEACHERS: GEOMETRY AND BEYOND

Alyson E. Lischka, Middle Tennessee State University
Jeremy Strayer, Middle Tennessee State University
Lucy Watson, Middle Tennessee State University
Candice M Quinn, Middle Tennessee State University

Members of a national partnership collaborated to create modules for college geometry content courses including geometries from an advanced perspective and development of mathematical knowledge for teaching (MKT). Pilot data frames discussions of building MKT in other secondary content courses.

Session 187

*Mathematics Pedagogy and Instructional Practice
Individual Session*

Salon 4

CHARACTERIZING ANTICIPATED CONVERSATIONS: WHAT DO TEACHERS PLAN TO ASK INDIVIDUAL CHILDREN ABOUT THEIR FRACTION STRATEGIES?

Amy Hewitt, University of North Carolina, Greensboro
Naomi A Jessup, University of North Carolina, Greensboro
Vicki Jacobs, University of North Carolina, Greensboro
Katherine Baker, University of North Carolina, Chapel Hill

We will share research on conversations that grades 3-5 teachers anticipated having with individual children during fraction problem solving. Findings include the goals and types of questions teachers proposed when building (or not building) on children's thinking.

Session 188

*Teacher Professional Development
Individual Session*

Salon 5

VERTICAL GROUPING AROUND MATHEMATICAL TASKS: A COLLABORATIVE LEARNING MODEL

Jane M Wilburne, Penn State, Harrisburg
Dana Pomykal Franz, Mississippi State University

We will share how we reframed the professional development experience by setting sociomathematical norms and modeled the five practices for orchestrating productive discourse. The results included significant changes in teachers' learnings and implementation of tasks in their own classrooms.

Session 189

*Teaching and Learning with Technology
Individual Session*

Salon 6

DEVELOPING MATHEMATICS TEACHERS' TPACK AND TECHNOLOGY EVALUATION ABILITIES

Ryan C Smith, University of Georgia
Dongjo Shin, University of Georgia

In this presentation, we share the instructional unit we designed to assist secondary mathematics teachers to develop TPACK and abilities to effectively evaluate mathematical technology. We present our study on how the unit influenced the development of their TPACK.

<p>Session 190 Salon 7 <i>Teaching and Learning with Technology</i></p> <p>BRIEF REPORT SESSION: TEACHING AND LEARNING WITH TECHNOLOGY</p> <p>SHAPING TEACHERS' PERCEPTIONS OF TASK QUALITY IN DYNAMIC GEOMETRY ENVIRONMENTS Aaron Trocki, Elon University</p> <p>What knowledge is required to write high quality tasks in dynamic geometry environments? Research on increasing TPACK in this regard is shared along with a framework for assessing task quality.</p> <p>SPECIALY ANNOTATED LESSON PLANS AS A MEANS TO IMPROVE TEACHING STATISTICS WITH TECHNOLOGY Elizabeth Arnold, Montana State University</p> <p>High school teachers were randomly assigned to teach technology-enabled statistics lessons with or without annotations in lesson plans. There were differences between the groups. I will provide examples of the annotated lesson plans and recommendations for teaching statistics with technology.</p> <p>SUPPORTING TPACK IN AN ELEMENTARY MATHEMATICS METHODS COURSE Megan L Nickels, University of Central Florida</p> <p>The purpose of this presentation is to advance the discussion on elementary mathematics methods courses that present educational technology, pedagogy, field experience, and mathematical knowledge for teaching as an integrated whole, rather than discrete components.</p>	<p>Session 192 Salon 9 <i>Mathematics Pedagogy and Instructional Practice Individual Session</i></p> <p>BARRIERS TO BUILDING ON STUDENT MATHEMATICAL THINKING Shari L Stockero, Michigan Technological University Laura R. Van Zoest, Western Michigan University Keith Leatham, Brigham Young University Blake Peterson, Brigham Young University</p> <p>In our work with teachers, we have identified barriers that inhibit them from productively implementing the teaching practice of building on student thinking. We share examples of barriers and ways we have supported teachers to make progress toward overcoming them.</p> <hr/> <p>Session 193 Salon 10 <i>Mathematics Pedagogy and Instructional Practice Individual Session</i></p> <p>PROMOTING TEACHER LEARNING: A FRAMEWORK FOR EVALUATING THE EDUCATIVE FEATURES OF MATHEMATICS CURRICULUM MATERIALS Sarah Quebec Fuentes, Texas Christian University</p> <p>An existing framework for evaluating curriculum materials was expanded to include teacher-learning variables, acknowledging educative curricula. The framework and its development and use with two mathematics curricula will be shared, and participants will consider curricula as sites for teacher development.</p> <hr/> <p>Session 194 Salon 11 <i>Equity and Mathematics Education Discussion Session</i></p> <p>EMBEDDING CULTURALLY RESPONSIVE TEACHING IN MATHEMATICS CLASSROOMS BY UTILIZING ANCHOR CHARTS WITH URBAN TERMINOLOGY Vernita Glenn-White, Stetson University</p> <p>We investigate how students respond to mathematical content when their cultural/urban terminology is used as acronyms to assist with remembering rules or procedures during mathematics instruction. The goal of this session is to discuss how incorporating urban terminology increases student discourse.</p> <hr/> <p>Session 195 Salon 12 <i>Preservice Teacher Field Experiences Individual Session</i></p> <p>SUMMER MATH ACADEMY FOR EARLY LEARNERS: VARIED FIELD EXPERIENCES FOR PRESERVICE TEACHERS Sandi Cooper, Baylor University Keith Kerschen, Baylor University Ryann Nicole Shelton, Baylor University</p> <p>This session reports on the experiences of preservice elementary teachers who led instruction at a summer early mathematics academy for low-socioeconomic populations. Interviews and teaching observations of the preservice teachers were conducted. Implications for elementary education programs will be discussed.</p>
<p>Session 191 Salon 8 <i>Development of Mathematics Teacher Educators Discussion Session</i></p> <p>EXPLORING MATH TEACHERS' CIRCLES AS A COMPLEMENT TO PROFESSIONAL DEVELOPMENT MODELS FOR ENHANCING MATHEMATICAL KNOWLEDGE Patrice Parker Waller, Virginia State University Sandra Richardson, National Science Foundation</p> <p>In this session, Math Teachers' Circles are offered as a complement to traditional professional development models used in developing and enhancing elementary and secondary inservice teachers' mathematical knowledge for teaching.</p>	

Session 196

*Mathematics Education Policy and Program Issues
Symposium*

Ballroom B

GLOBAL PERSPECTIVES ON PRESERVICE TEACHER PREPARATION: TOPICS FROM ICME 13

David Pugalee, University of North Carolina, Charlotte
Nadine Bezuk, San Diego State University
Megan Burton, Auburn University
Kimberly Conner, University of Missouri
Stacy Musgrave, California State Polytechnic University, Pomona

ICME 13 included Topic Study Groups where international scholars compared and discussed research experiences with the different practices of mathematical teacher education throughout the world. This panel discussion will focus on those significant trends and developments.

Session 197

*Mathematics Content, Processes, and Practices
Individual Session*

Salon 1

DIFFERENCES IN STRUCTURE: HOW IMPLEMENTATION OF SMP 7 DIFFERS FOR MATHEMATICAL AND STATISTICAL STANDARDS

Stephanie Casey, Eastern Michigan University
Jonathan David Bostic, Bowling Green State University

SMP 7 calls for students to look for and make use of structure, yet structure differs in mathematics and statistics. Come engage in activities to investigate the difference and learn about our work with middle school teachers on this topic.

Session 198

*Teacher Professional Development
Individual Session*

Salon 2

NUMBER TALK PROFESSIONAL LEARNING COMMUNITIES: SCALING UP THROUGH ONLINE PROFESSIONAL DEVELOPMENT FACILITATION

Erin E. Baldinger, University of Minnesota
Terry Wyberg, University of Minnesota

Number talks are a promising strategy for leading productive mathematics discussions. In this session, we explore how number talk PD utilizing face-to-face meetings with online PD facilitation can make number talks accessible to greater numbers of teachers.

Session 199

*Mathematics Pedagogy and Instructional Practice
Individual Session*

Salon 3

LEARNING TO SUPPORT COLLECTIVE ARGUMENTATION: CONSISTENCIES BETWEEN INTERPRETATIONS FROM COURSEWORK AND TEACHING ACTIONS

AnnaMarie Conner, University of Georgia
Hyejin Park, University of Georgia
Carlos Nicolas Gomez, Clemson University
Bolanle Salaam, University of Georgia
Yuling Zhuang, University of Georgia
Jonathan Foster, University of Georgia

Engaging students in argumentation and proof is difficult for novice teachers. We will describe prospective secondary mathematics teachers' learning about argumentation in a mathematics methods course and compare this to characteristics of their support for collective argumentation during student teaching.

Session 200

*Teacher Professional Development
Individual Session*

Salon 4

LEARNING FROM PRACTICE: DEVELOPING ELEMENTARY MATHEMATICS TEACHERS' NOTICING

Heidi L. Beattie, Troy University
Wendy Smith, University of Nebraska, Lincoln
Ruth Heaton, University of Nebraska, Lincoln

The purpose of this presentation is to share how our research on teacher noticing led to improvements in how we helped K-3 teachers become better at noticing through a child study assignment.

Session 201

*Mathematics Pedagogy and Instructional Practice
Individual Session*

Salon 5

WHAT KNOWLEDGE IS USED IN GIVING AN EXPLANATION? ENACTING MATHEMATICAL KNOWLEDGE FOR TEACHING IN PRACTICE

Rachel B Snider, University of Michigan

Drawing on a study of how secondary mathematics teachers enact knowledge while giving explanations, this session considers the complex relationship between knowledge and practice. Implications of this work for teacher education and research on teaching will also be discussed.

Session 202

*Mathematics Pedagogy and Instructional Practice
Individual Session*

Salon 6

WORKING ACROSS INSTITUTIONAL BOUNDARIES: DEVELOPING AND PILOTING ASSESSMENTS OF INSTRUCTIONAL PRACTICE FOR ELEMENTARY METHODS COURSES

Sarah Kate Selling, University of Utah
Gabriela Dumitrascu, Eastern Michigan University
Ji-Eun Lee, Oakland University
Melissa Kemmerle, University of Michigan
Nicole Garcia, University of Michigan

This session focuses on efforts to improve teacher education at scale in a state-based network of teacher education programs. We discuss how collective work on designing assessments of instructional practice can improve shared understandings of practice and inform course design.

<p>Session 203 Salon 7 <i>Mathematics Pedagogy and Instructional Practice</i></p> <p>BRIEF REPORT SESSION: ENHANCING INSTRUCTIONAL PRACTICE</p> <p>ADAPTING “DAYS OF SCHOOL” COUNTING ROUTINES TO ACCELERATE PLACE-VALUE UNDERSTANDING: AN EMPIRICAL STUDY IN ELEMENTARY CLASSROOMS Judith Fraivillig, Rider University</p> <p>The speaker will report findings from a longitudinal study in elementary classrooms examining the impact of adaptations to a familiar counting routine on children's place-value understanding and unitizing. Targeted pedagogical supports are described and implications for professional development are discussed.</p> <p>PSTS FIND ERRORS IN CHILDREN'S SHAPE BOOKS AS A WAY TO IMPROVE THEIR OWN KNOWLEDGE Julie Nurnberger-Haag, Kent State University</p> <p>The session reports the impact of an activity used in mathematics content and elementary mathematics methods courses designed to improve preservice and inservice teachers' knowledge of geometric shapes as well as understand potential student conceptions.</p> <p>USING WRITING TO SUPPORT PRESERVICE TEACHERS' TRANSITION FROM TRADITIONAL TO PROBLEM-BASED VIEWS OF INSTRUCTION Barbara King, Florida International University Indira Gil, Florida International University</p> <p>We investigated how PSTs' views of instruction changed throughout a mathematics methods course designed to build understanding about problem-based instruction. Through analyzing writing-to-learn assignments, we documented PSTs' emerging ideas and identified critical areas where they struggled to change their thinking.</p>	<p>Session 205 Salon 9 <i>Preservice Teacher Field Experiences</i> <i>Individual Session</i></p> <p>MEASURING CO-TEACHING STRATEGIES DURING CLINICAL EXPERIENCES Jennifer M Oloff-Lewis, California State University, Chico Ruthmae Sears, University of South Florida Pier Angeli Junor Clarke, Georgia State University Patti Brosnan, The Ohio State University Laurie Riggs, California State Polytechnic University, Pomona Maureen Grady, East Carolina University</p> <p>We will describe instruments that can be used to measure co-teaching strategies during preservice teachers' clinical experiences. Also, we will discuss balancing, process and outcome measures, and consider how the instruments can be used for research and instructional purposes.</p>
<p>Session 204 Salon 8 <i>Mathematics Content, Processes, and Practices</i> <i>Individual Session</i></p> <p>USING CHILDREN'S AUTHENTIC CLAIMS TO CONSIDER THE ROLE OF ARGUMENT IN THE CLASSROOM Kate Kline, Western Michigan University Lisa Kasmer, Grand Valley State University</p> <p>We will analyze videos where children construct and critique arguments related to place value and discuss prospective teachers' interpretations of these videos. Issues related to supporting prospective teachers to facilitate productive argumentation in the classroom will also be discussed.</p>	<p>Session 206 Salon 10 <i>Teaching and Learning with Technology</i> <i>Individual Session</i></p> <p>EXAMINING PINTEREST AS A MATHEMATICS CURRICULUM RESOURCE FOR PRESERVICE TEACHERS Nicole M. Wessman-Enzinger, George Fox University Joshua Hertel, University of Wisconsin, La Crosse</p> <p>In this presentation, we will discuss a research study examining negative integer resources available on the social media site Pinterest. We gathered a dataset of 200 pins on integers using keyword searches and examined this set for mathematical integrity.</p> <p>Session 207 Salon 11 <i>Mathematics Content, Processes, and Practices</i> <i>Discussion Session</i></p> <p>EXAMINING PRESERVICE SECONDARY MATHEMATICS TEACHERS' STATIC AND EMERGENT SHAPE THINKING WHEN ENGAGING WITH NON-LINEAR FUNCTIONS Christine Trinter, Virginia Commonwealth University Volkan Sevim, University of South Carolina, Beaufort</p> <p>Participants are invited to join a problem solving activity and a group discussion on a qualitative study that examines preservice secondary mathematics teachers' static and emergent shape thinking when engaging with non-linear functions.</p> <p>Session 208 Salon 12 <i>Teacher Professional Development</i> <i>Discussion Session</i></p> <p>USING MATH TEACHERS' CIRCLES FOR PROFESSIONAL DEVELOPMENT WITH A FOCUS ON PROBLEM POSING Chris Bolognese, The Ohio State University Michael Steward, The Ohio State University</p> <p>We will discuss the benefits of math circles as professional development, focusing on problem posing, and using a ranking scheme for these problems. We will run an abbreviated math circle session with the audience and discuss available resources.</p>



LUNCH AND BUSINESS MEETING

BALLROOM C/D

Join us for the Annual AMTE Business Meeting during lunch.



CONFERENCE HISTORICAL HIGHLIGHTS

15TH ANNUAL CONFERENCE, 2011

IRVINE, CA

General Session

Making Assessment Integral to Informing Kindergarten through Grade Eight Math Instruction

Marilyn Burns, Math Solutions Professional Development

Judith Jacobs Lecture

Learning for Tomorrow: Challenges and Opportunities in Mathematics Teacher Education

Joan Ferrini-Mundy, Michigan State University

Closing Session

It's Your Choice: Research and Practice Pathways in STEM Education

William F. Tate, Washington University in St. Louis

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HISTORY OF THE JUDITH E. JACOBS LECTURE

The Judith E. Jacobs Lecture was established in 2003 to honor Dr. Judith E. Jacobs, one of the founding 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.

YEAR	JUDITH E. JACOBS LECTURER	AFFILIATION	TITLE
2017	Marilyn E. Strutchens	Auburn University	<i>Attending to Access, Equity, and Empowerment Matters for Each and Every Student: Beyond Courses and Workshops</i>
2016	Francis (Skip) Fennell	McDaniel College	<i>Mathematics Teacher Education: Normal Schools to Now. What's the Fit and Future for AMTE?</i>
2015	Nadine Bezuk	San Diego State University	<i>Supporting Elementary Teachers in Developing Their Mathematics Teaching</i>
2014	Barbara J. Reys	University of Missouri	<i>Curriculum Matters! For Teachers, for Students, and for Mathematics Teacher Educators</i>
2013	Karen Karp	University of Louisville	<i>The Invisible 10% - Preparing Teachers to Teach Mathematics to Students with Special Needs</i>
2012	Deborah Schifter	Education Development Center	<i>Interpreting the Common Core: What Might It Look Like in the Classrooms?</i>
2011	Joan Ferrini-Mundy	Michigan State University	<i>Learning for Tomorrow: Challenges and Opportunities in Mathematics Teacher Education</i>
2010	James Hiebert	University of Delaware	<i>Building Knowledge for Helping Teachers Learn to Teach: An Alternative Path for Teacher Education</i>
2009	Jeremy Kilpatrick	University of Georgia	<i>Going to War with the Army You Have</i>
2008	Ed Silver	University of Michigan	<i>Mathematics Teacher Education in Dodge City: Desperately Seeking Wyatt Earp and Henri Poincaré</i>
2007	Deborah Loewenberg Ball	University of Michigan	<i>The Core and Contemporary Challenges of Mathematics Teacher Education</i>
2006	Judith Sowder	San Diego State University	<i>Preparing Elementary Teachers: The Role of Reasoning about Numbers and Quantities</i>
2005	Glenda Lappan	Michigan State University	<i>Reflections on a Lifetime of Work: Why Curriculum Matters</i>
2004	Thomas J. Cooney	University of Georgia	<i>The Role of Mathematics Teacher Education: Reform or Enculturation?</i>
2003	Judith E. Jacobs	California State Polytechnic University, Pomona	<i>Improving Mathematics Education: Mathematics Teacher Educators Lead the Way</i>

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Brown, Rachael Eriksen	Penn State, Abington	Kosheleva, Olga	University of Texas, El Paso
Buchheister, Elizabeth E	University of South Carolina	Kwon, Minsung	University of Michigan
Buckhalter, Brian	University of Mississippi	Leatham, Keith	Brigham Young University
Burton, Megan	Auburn University	Leyva, Luis Antonio	Vanderbilt University
Cady, Jo Ann	University of Tennessee	Lischka, Alyson E	Middle Tennessee State University
Callahan, Kadian M	Kennesaw State University	LoPresto, Kevin	Radford University
Campbell, Matthew P	West Virginia University	Lovett, Jennifer	Middle Tennessee State University
Carlson, Mary Alice	Montana State University	Luebeck, Jennifer	Montana State University
Cavanna, Jillian M.	University of Connecticut	MacDonald, Beth Loveday	Utah State University
Cayton, Charity	East Carolina University	Majerus, Mary	Westminster College
Chenoweth, Denise L	University of South Florida	Marshall, Anne Marie S	Berry College
Clark, Kathleen	Florida State University	Martin, Megan	Univ. of North Carolina, Greensboro
Colonnese, Madelyn	University of Connecticut	Marynowski, Richelle	University of Lethbridge
Conforti Preszler, Noelle	James Madison University	McBroom, Ewelina	Southeast Missouri State University
Conner, AnnaMarie	University of Georgia	McCulloch, Allison	North Carolina State University
Contreras, Jose N	Ball State University	McLeod, Kevin	University of Wisconsin, Milwaukee
Cook, Alice LaRue Joy	University of Maryland	Meadows, Jennifer	Tennessee Technological University
Costner, Kelly M	Winthrop University	Millsaps, Gayle M	Eastern Washington University
Cox, Dana C	Miami University	Mitten, Carolyn	University of Florida
Daiga, Michael	Indiana University, Bloomington	Moore, Sara Delano	SDM Learning
de la Cruz, Jessica Audet	Assumption College	Moss, Diana	Appalachian State University
Diamond, Jaime Marie	University of Georgia	Myers, Marrielle	Kennesaw State University
Dibbs, Rebecca	Texas A&M University, Commerce	Newton, Jill	Purdue University
Dick, Lara Kristen	Bucknell University	Nguyen, Giang-Nguyen	University of West Florida
Dimmel, Justin	University of Maine	Olanoff, Dana	Widener University
Dingman, Shannon	University of Arkansas	Pitvorec, Kathleen	University of Chicago
Driskell, Shannon	University of Dayton	Powers, Robert	University of Northern Colorado
Duggan, Arren	Univ. of North Carolina, Greensboro	Prasad, Priya Vinata	University of Texas, San Antonio
Edgington, Cyndi	North Carolina State University	Rathouz, Margaret	University of Michigan, Dearborn
Ekici, Celil	University of Virgin Islands	Raygoza, Mary Candace	University of California, Los Angeles
Estapa, Anne	Iowa State University	Reeder, Stacy	University of Oklahoma
Feldhaus, Adam	University of Northern Iowa	Rougee, Annick	University of Michigan
Feldman, Ziv	Boston University	Safak, Elif	Florida Gulf Coast University
Fleming, Elizabeth	University of Maryland	Safi, Farshid	University of Central Florida
Franz, Dana Pomykal	Mississippi State University	Schroeder, Margaret J	University of Kentucky
Galindo, Enrique	Indiana University	Schwartz, Catherine	East Carolina University
Gerstenschlager, Natasha Erika	Western Kentucky University	Sears, Ruthmae	University of South Florida
Gibbons, Lynsey	Boston University	Selling, Sarah Kate	University of Utah

Sherman, Diana
Sinicrope, Rose
Skultety, Lisa
Slate Young, Erica
Slavit, David
Smith, Ryan C
Son, Ji-Won
Stoehr, Kathleen Jablon
Stone, Jamalee (Jami)
Strickland, Sharon
Swartz, Barbara
Taylor, Cynthia E

Saint Anselm College
East Carolina University
Univ.of Illinois, Urbana-Champaign
Appalachian State University
Washington State Univ., Vancouver
University of Georgia
Univ. at Buffalo, State Univ. of NY
Santa Clara University
Black Hills State University
Texas State University
McDaniel College
Millersville Univ. of Pennsylvania

Thomas, Amanda
Timmerman, Maria A
Trocki, Aaron
Webb, Jared
Wilburne, Jane M
Willingham, James C
Wilson, Holt
Young, Jamaal
Zelkowski, Jeremy
Ziegler, Jeff

University of Nebraska, Lincoln
Longwood University
Elon University
Univ.of North Carolina, Greensboro
Penn State, Harrisburg
James Madison University
Univ. of North Carolina, Greensboro
University of North Texas
University of Alabama
Brookhill Institute of Mathematics

2017 AMTE BUSINESS MEETING AGENDA

Saturday, February 11, 2017

Rosen Plaza, Orlando, FL

A. WELCOME

CHRISTINE D. THOMAS, PRESIDING

B. APPROVAL OF THE MINUTES

NICOLE RIGELMAN

C. TREASURER AND MEMBERSHIP REPORT

ANITA WAGER, TIM HENDRIX

D. COMMITTEE AND TASK FORCE REPORTS

CHRISTINE THOMAS

Affiliate Connections

Jean Lee

Awards

Kimberly Markworth

Communications

Erika Bullock

Constitution and Bylaws

Francis (Skip) Fennell

Emerging Issues

Marilyn Strutchens

Membership

Jonathan Bostic

Mentoring

Gladis Kersaint

STaR Program

Barbara Reys

Nominations and Elections

Margaret Schroeder

Professional Development

Julie James

Program

Holt Wilson

Research

Babette Benken

Technology (and NTLI Award)

Barbara Swartz

Mathematics Teacher Educator Journal

Rebekah Elliott

Connections Newsletter

Babette Benken

CITE Journal

Michael Edwards, S. Asli Ozgun-Koca

E. CONFERENCE AND CELEBRATIONS TASK FORCE

SUSAN GAY

F. RECOGNITIONS

TIM HENDRIX, CHRISTINE D. THOMAS

Program and Local Arrangements Committee Chairs

Outgoing Committee, Panel, and Task Force Chairs

Outgoing AMTE Board Members

G. NEW BUSINESS

CHRISTINE D. THOMAS

H. INSTALLATION OF NEW BOARD MEMBERS

CHRISTINE D. THOMAS

I. 2017 STRATEGIC PRIORITIES AND ANNOUNCEMENTS

RANDOLPH PHILIPP

J. ADJOURNMENT

RANDOLPH PHILIPP

2016 AMTE BUSINESS MEETING MINUTES

January 30, 2016, 12:15 PM - 1:30 PM (PDT)

Hotel Irvine, Salon C/D, Irvine, California

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

WELCOME

Christine Thomas welcomed the membership highlighting the keynote speakers and the poster session.

2015 YEAR IN REVIEW

- Celebrations Task Force established to plan **20/25 AMTE celebrations**
- Board approved moving forward with the development of **Mathematics Teacher Preparation Standards**
- Board approved including a **poster session** as a new format for conference presentation.
- Held the **Elementary Mathematics Specialist Research Conference**
- **Equity Position Statement** was published
- Board approved for AMTE to be a **signatory** on the letter to Congress **opposing cuts in IES funding**
- The Professional Development Committee initiated a **call for proposals for webinar presentations**
- **AMTE Bulletin Board** was launched on the website
- **Survey on Enrollment in Teacher Preparation** initiated
- **Technology Position** Statement updated

APPROVAL OF MINUTES FROM BUSINESS MEETING HELD ON FEBRUARY 14, 2015.

Christine Thomas called for any changes in the 2015 Business Meeting minutes found on pages 96-100 of the conference program.

Motion: Judith Jacobs made the motion to accept the minutes from the 2/14/15 meeting. Jenny Bay-Williams seconded the motion. Unanimously approved.

TREASURER REPORT

Anita Wager, incoming Treasurer, presented the expenditures and income from July 2015 through June 2016 on behalf of Suzanne Harper, outgoing Treasurer. The budgeted operating expenses are at about \$104,000 with the total income at about \$103,688 to date. The difference between expenditures and income is made up with income generated through sponsors and the annual conference. We currently have about \$122,000 in reserves, representing more than one year's expenses.

MEMBERSHIP REPORT

Tim Hendrix provided the following information about membership.

- Last year at this time: 1065 members,
- Total Current Membership: 1035

Of our current members, 160 are graduate students, and 17 are emeritus members. Forty-nine states are represented in our membership along with Washington DC, Puerto Rico, and ten other countries.

Stats on our paid memberships:

- 1 membership is extended until mid-2023
- 16 memberships expire in 2020 or later
- 276 memberships expire in 2017 or later
- 841 memberships expire in 2016
- At least 68 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. He then announced the winners of the scavenger hunt. Prizes for these winners were donated by the exhibitors (i.e., IAP, Pearson, and NCTM).

COMMITTEE AND TASK FORCE REPORTS

Affiliate Connections Committee: Colleen Eddy provided the report as outgoing chair of the committee. The new chair will be Jean Lee. Colleen also welcomed Mary Pat Sjostrom and Tom Evitts as new committee members.

Committee Activities: The Affiliate Connections Committee (ACC) continues support of AMTE Affiliates through webinars, a conference presentation, and the affiliate webpage. The AMTE Affiliate Webinar held October 23 included 23 participants and represented 15 affiliates. Under review is a proposal for ACC members to be assigned to regions so they can better support affiliate leaders. The committee is also exploring a ½ day conference for affiliate leaders.

Awards Committee: Christine Thomas shared the Awards Committee Report. Kim Markworth will continue as chair of the committee. New members include Lisa Poling, Courtenay Miller, and Nirmala Naresh. Kathleen Lynch-Davis will serve as the board liaison in 2016 as Ed Silver completes his term on the board.

Committee Activities: This year's award winners are:

- **Judith Jacobs Lecturer:** Skip Fennell
- **3 Elementary Mathematics Specialist Scholarships:** Anna Feil (VA), Kristin Peters (WA), Heidi Whipple (VT)
- **4 Susan Gay AMTE Conference Scholarships:** Jared Webb (NC), Melody Elrod (FL), Dawn Woods (TX), and Elizabeth Fulton (MT)
- **Nadine Bezuk Award for Excellence in Leadership & Service in Mathematics Teacher Education:** Ruth Heaton, University of Nebraska - Lincoln
- **Early Career Award:** Susan Peters, University of Louisville

Communications Committee: Jo Ann Cady provided the report as outgoing chair of the committee. The new chair will be Erika Bullock. Jo Ann also welcomed Kevin McLeod and Stephanie Lee Behm Cross as new committee members.

Committee Activities: The committee would like to

- increase AMTE social media presence
- continue to improve the conference app
- encourage members to use the app
- eventually eliminate the printed program

They will continue to support development of the conference app and create a social media protocol.

Constitution and Bylaws:

Skip Fennell provided the report as chair of the committee. The Constitution and Bylaws Committee welcomes Fran Arbaugh and Bonnie Oppenheimer.

Committee Activities: The committee began the process of reviewing the constitution and bylaws in alignment with expectations for organizations that are incorporated non-profits. AMTE is currently a non-profit but is an unincorporated entity. They hope to complete this process in early 2016.

Emerging Issues Committee: Jennifer Luebeck provided the report. She announced Marilyn Strutchens as the incoming committee chair. The committee welcomes Kathleen Heid and Shari Stockero. Kathleen Lynch-Davis was the board liaison to the committee in 2015 with Nicole Rigelman serving as board liaison in 2016.

Committee Activities: Jennifer reminded members to complete the online "Survey of Enrollment" and to send emerging issues and breaking news to EIC for distribution via Web and email. There is also a new banner on the website that will house these announcements. The committee provides content for the "Emerging Issues" tab on AMTE.net. They intend to examine the survey of declining enrollment results and continue with their advocacy through public comments, advocacy breakfast, and development of a toolkit for members.

Membership Committee: Jonathan Bostic provided the report. The committee welcomes Suzanne Harper and Winnie Ko. Nicole Rigelman was the board liaison to the committee in 2015 with Megan Burton serving as board liaison in 2016.

Committee Activities: Jonathan shared the current membership level is 1,035 as of January 2016. He encouraged members to learn about the work of various committees and apply to serve on the committees. The committee is currently examining the process by which AMTE members are selected for committees.

Mentoring Committee: Jennifer Chauvot provided the report. She announced that Gladis Kersaint will serve as chair, and the committee welcomes Karen King and Sararose Lynch.

Committee Activities: The committee has been discussing the various groups who need mentoring (e.g., rank, department, institution type). They see their work supporting the membership and professional development committees. This year, they plan to explore alternatives to the lunch Discussion Tables, such as 1) online discussions followed by face-to-face discussions at the conference and 2) face-to-face discussions at the conference followed by

online discussions.

STaR Sub-Committee: Anita Wager provided the report on behalf of Barbara Reys. New members of the committee are Niral Shah and Susan Gregson. Kathleen Lynch-Davis will continue to serve as board liaison to this committee.

Committee Announcements and Activities:

- To date, 210 early career mathematics educators have completed the STaR program.
- Thirty-two early career faculty have been accepted to participate in the 2016 program.
- Karen Hollebrands will take over as co-Director with Denise Spangler.
- To date, \$120,000 has been raised to support the continuation of the program. This funding is enough to sponsor the program in 2016 and 2017. Please consider a contribution to support the next generation of mathematics teacher educators.

Nominations and Elections Committee: Karen Karp provided the report as outgoing chair of the committee. She announced Margaret Mohr-Schroeder as incoming chair of the committee. The committee welcomes Toya Frank and Mark Klespis as new members.

Committee Activities: Karen reminded attendees of this year's election results. Randy Philipp is president-elect, Anita Wager is treasurer, and Mike Steele is member-at-large. All will assume their new roles at the end of this meeting.

Professional Development for Members Committee: Christine Thomas provided the report for this committee. The new committee chair will be Julie James. New members of the committee include Sam Eskelson and Trena Wilkerson. Tim Boerst and Mike Steele will serve as board liaisons to this committee.

Committee Activities: This year, the committee organized one webinar in Spring 2015. They implemented a webinar volunteer form to encourage members to present a webinar, planned webinars for 2016, and explored other means of professional learning for members.

Conference Program Committee: Shannon Dingman provided the report as outgoing chair. He recognized Susan Gay for all that she does for the conference. The incoming chair is Holt Wilson. The committee welcomes the following new members: Robert Berry, AnnaMarie Conner, Enrique Galindo, and Catherine Schwartz. Shannon also reminded attendees that the AMTE 2017 proposal deadline is May 15, 2016.

Conference Program Stats:

- 464 Submitted Proposals (49.8% acceptance)
- 483 Presenters (conference record)
- 189 Sessions plus 30 Posters
- 141 Proposal Reviewers
- Inaugural AMTE Poster Session

Research Committee: John Lannin provided the report as incoming chair of the committee. The committee welcomes two new members, Hilda Borko and Imani Goffney.

Committee Activities: This committee supported the launch of the poster session at the conference. They are seeking input from the membership on how they can best support MTEs' scholarship.

Technology and Mathematics Teacher Education Committee: Asli Özgün-Koca provided the report for the committee. The incoming chair is Barbara Swartz. Suzanne Harper served as board liaison in 2015.

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. They recently updated AMTE's technology position statement. Please check it out at the AMTE's website. They also support the National Technology Leadership Initiative (NTLI) Fellowship.

Mathematics Teacher Educator Editorial Panel: Laura Van Zoest provided the report for the committee. Incoming editor is Rebekah Elliot. Incoming members include Edd Taylor, Gloriana González Rivera, and Angela Barlow.

Announcements and Special Projects: Laura reminded attendees that the current editor is Sandra Crespo with Kristen Bieda as Associate Editor. The MTE is published in March and September. She encouraged attendees to read, write, and review for the journal. The panel is working on developing a Reviewer Award and begins the process of searching for the third editor.

Connections Editorial Panel: Babette Benken provided the report for the panel. She welcomed new members Gwendolyn Johnson and Sarah Selmer.

Announcements and Special Projects: The next issue, Spring 2016, will be available about March 1. This is the 6th issue in a new web-based format. The team accepts articles on an on-going basis (max 1,400 words); there is a solicitation on the AMTE website under “Publications” tab. There are three new reoccurring features: “Communications from the Board,” “Question for the Quarter” linked to a discussion on Facebook, and “STaR Fellow Spotlight.”

CITE Editorial Panel: Christine Thomas shared that Doug Lapp and Michael Todd Edwards serve as co-editors for the journal.

Conference and Celebrations Task Force: Susan Gay thanked everyone for their work on behalf of the conference and particularly the Celebrations Task Force. Susan expressed appreciation for attendees’ participation with the line plot and the scavenger hunt. She thanked Tony Nguyen for his work with designing the logos for the 20th conference and 25th anniversary celebration.

RECOGNITIONS

Christine Thomas thanked Mark Ellis for his work as chair for the Local Arrangements Committee. Mark expressed thanks to the volunteers for their support in making this a great conference.

Christine thanked and recognized Ed Silver and Suzanne Harper for their work on the Board of Directors. She also thanked Fran Arbaugh for her mentoring in the role as president and for her service.

INSTALLATION OF NEW BOARD MEMBERS

Christine Thomas welcomed Mike Steele as incoming board member-at-large, Anita Wager as Treasurer, and Randy Philipp as president-elect.

ONGOING 2015 PRIORITIES

Christine Thomas reminded attendees of AMTE’s ongoing priorities:

1. **Strengthen connections across the organization to promote the improvement of mathematics teacher education through evidence-based decisions:**
 - Connect member to member, member to resources, and members to Board leadership.
 - Connect committees to members, committee to committee, and committees to Board leadership.
2. **Strengthen AMTE’s advocacy for high quality mathematics teacher education in support of quality mathematics teaching.**
 - Bring attention to what we know about quality mathematics teacher education and be a catalyst for the improvement of the profession of mathematics teacher education.
 - Support members as advocates.

PRIORITIES FOR 2016

Christine Thomas shared the priorities for 2016:

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

She connected these priorities to AMTE’s Mission and Goals discussing both what we have learned and where there are gaps in how we accomplish the work of this organization. Christine shared that the board has worked to draft a restructuring plan and will work toward restructuring throughout 2016, unveiling the new structure to begin in 2017 with the start of Randy Philipp’s presidency.

ADJOURNMENT

Christine Thomas adjourned the meeting at 1:28 pm (PDT).

Respectfully submitted by Nicole Rigelman.

RESTRUCTURING AMTE FOR IMPROVED GOVERNANCE

The Board of Directors of AMTE has been working for the past year and a half to re-conceptualize how its day-to-day work is carried out and how we might work both more efficiently and more effectively to meet the mission and goals of AMTE. There are many committees and hundreds of volunteers who keep AMTE vital and engaged in the mathematics education professional community. While our membership increased steadily in recent years and has stabilized around approximately 1000 members, the complexity of AMTE initiatives and activities has multiplied and continues to do so.

The rationale for the restructure is centered in two core outcomes of an analysis of AMTE's work. First, there are gaps in how the mission and goals of AMTE are addressed. Second, the current structure of the governance does not adequately situate the organization to respond to the plethora of issues and challenges in mathematics teacher education. We need a structure that builds capacity both to sustain the current level of activity and to accommodate further growth in needed areas.

As a reminder, AMTE has the following goals:

- Promote effective mathematics teacher education programs and practices;
- Promote communication and collaboration among those involved in mathematics teacher education;
- Promote research and other scholarly endeavors related to mathematics teacher education;
- Promote ongoing professional growth of mathematics teacher educators;
- Advocate for effective policies and practices related to mathematics teacher education at all levels; and
- Advocate for equitable practices in mathematics teacher education, including increasing the diversity.

The Board sought a governance structure that would be more effective in supporting our capacity to scale up efforts with respect to these goals, with particular attention paid to initiatives for equitable practices, effective policies, and professional growth of mathematics teacher educators.

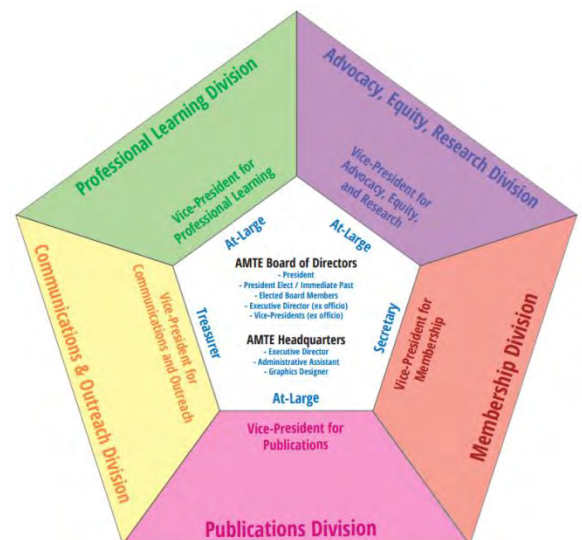
In the proposed restructure, AMTE's work will be organized around five divisions, each of which is led by an appointed Vice-President who works closely with an elected member of the Board of Directors and is supported by a small administrative AMTE Headquarters. The new divisions highlight five major areas of work in the organization:

Membership; Professional Learning; Publications; Advocacy, Equity, & Research; and Communications & Outreach.

Each Vice-President would be an appointed *ex officio* member of the Board of Directors. The entire Board of Directors would be comprised of the voting elected members of the Board (President, President-Elect/Past-President, Secretary, Treasurer, and three Members-at-Large) and *ex officio* non-voting members, including the Executive Director and the five Vice-Presidents. The current *ex officio* directors would become Associate Vice-Presidents, along with the chairs of committees.

At the Annual Business Meeting, AMTE will consider the changes needed to approve this new structure. After the Annual Meeting, once the new structure is in place, the organization will immediately seek to change our status from *unincorporated non-profit organization* to an *incorporated non-profit organization*. The incorporation of the organization is standard for non-profits and will help provide both security and protection for the organization. Incorporation has been a need from the beginning of this process, but it is important to make any structural changes before seeking incorporation.

For more information, please visit the website at amte.net/restucturing.



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 2018 ANNUAL CONFERENCE

We invite you to attend and speak at next year's Twenty-Second Annual AMTE Conference, to be held during **February 8 - 10, 2018**, in **Houston, Texas**.

The Call for Proposals will be available on the AMTE website (amte.net) by March 1, 2017, and in the next issue of *AMTE Connections*. Farshid Safi of the University of Central Florida (farshid.safi@ucf.edu) is the Program Chair.

**THE DEADLINE FOR SUBMITTING PROPOSALS
FOR THE 2018 ANNUAL CONFERENCE IS MAY 15, 2017.**

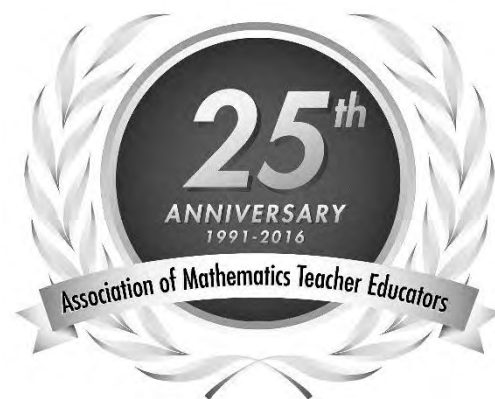
Visit amte.net/conferences for updated information on past and future conferences.

GIVE 25 FOR AMTE'S 25th ANNIVERSARY

Culminating in our 2017 AMTE Conference in Orlando, Florida, we will be celebrating the 25th Anniversary of the Association of Mathematics Teacher Educators. For 25 years, AMTE has been hard at work—growing in number and in scope, finding meaningful ways to promote excellence in mathematics teacher education, and increasing our voice in the fields of mathematics and education. We want this anniversary year to be a year of unparalleled growth and energy to honor the foundation laid by the many members who have given their time and energy to the organization.

GIVE 25 FOR AMTE'S 25th CAMPAIGN

Beginning in January 2016, we invite contributions in honor of the legacy of AMTE. **We encourage you to make a donation of \$25, or multiples of \$25, to express your appreciation for the organization and the work it does to support mathematics teacher education.** Many of you already give on a regular basis, and we thank you for those donations. On the website and in the *Connections* newsletter, we will keep the membership updated on the progress of the *Give 25 for AMTE's 25th* Campaign.



WHERE ARE THE DONATIONS GOING?

Donations can be directed towards any of the ongoing work of AMTE, described below.

AMTE GENERAL FUND

In 25 years, AMTE has grown as an organization to over 1000 members. With elected board members and appointed directors, the work of the organization is carried out with only one part-time employee, a baker's dozen of volunteer committees, and hundreds of volunteers who give selflessly of their time and energy by reviewing proposals, organizing committee work, carrying out task force projects, etc. As AMTE continues to grow in the next quarter-century, please consider supporting both the growth in infrastructure and the ongoing development of new initiatives.

ELEMENTARY MATHEMATICS SPECIALIST SCHOLARSHIP FUND

Since 2012, AMTE has awarded 12 scholarships of \$1000 each to elementary teachers to enhance their mathematics knowledge, teaching, and leadership by enrolling in university coursework or other training to develop expertise in becoming an elementary mathematics specialist. The EMS Scholarship is also supported by the generous sponsorship of the Math Learning Center. Your donation could help increase the number of scholarships that could be awarded.

STaR PROGRAM FOR EARLY CAREER MATHEMATICS EDUCATORS FUND

The Service, Teaching, and Research (STaR) Program is a one-year induction program for early career mathematics educators working at institutions of higher education. The program includes a summer institute, academic year networking, and meetings at the annual AMTE conference. STaR has been instrumental in supporting many future leaders in mathematics education, including the current 239 STaR Fellows who have completed the program.

SUSAN GAY GRADUATE STUDENT CONFERENCE TRAVEL SCHOLARSHIP FUND

Since 2012, AMTE has awarded scholarships to dozens of graduate students to support travel to AMTE's Annual Conference. This has helped many graduate students learn about and become involved in our organization. Your contribution to this fund will help future graduate students be able to attend and participate in the AMTE Conference.

VISIT AMTE.NET/GIVE TO GIVE \$25 (OR \$25*N)