



Preconference Sessions at the 2011 AMTE Conference

January 27, 2011, Thursday morning, 8:30 am

The following Preconference Sessions will be held at 8:30 am on Thursday morning, January 27, 2011, at the Fifteenth Annual AMTE Conference at the Hyatt Regency Hotel in Irvine, California. Each session requires pre-registration; information is below. **No onsite registration will be available.** Please contact the organizers for more information.

Preconference Sessions

| Session | Title |
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| 1 | Affiliate Connections |
| 2 | Framing and Analyzing (In)equity and Power in Mathematics Methods |
| 3 | Using the TPACK Framework to Think About Issues in Technology-based Professional Development for Mathematics Teachers |
| 4 | Designing Professional Development to Build Specialized Mathematical Knowledge for Teaching |
| 5 | Facilitating Teachers' Discussions of Practice using Animated and Video Representations of Teaching (ThEMaT) |
| 6 | NCTM's NCATE Program Reviewer Training Workshop |
| 7 | Pathways to Middle School Mathematics Teaching in California: Concerns and Opportunities |
| 8 | Preparing to Teach Mathematics with Technology [PTMT]: Engaging Practices and Materials for Technology-Using Mathematics Teacher Educators |
| 9 | STaR Fellows Follow-up |
| 10 | Understanding Students' Conceptions of Integers and Implications for Teacher Educators |

Session Descriptions

1. Affiliate Connections

Sponsor: AMTE's Affiliate Connections Committee

Lead Presenter: Jo Ann Cady, University of Tennessee, jcady@utk.edu

Presenters: Angela Barlow, University of Mississippi; Tammy Hanebrink, Southeast Missouri State University; Stephanie Smith, Georgia State University; Brian Townsend, University of Northern Iowa

Time: 8:30 – 11:30 a.m.

Session limit: 100 participants

Description: This session will provide information regarding starting an AMTE affiliate and growing your affiliate membership. In addition, session leaders and participants will share useful information about successful initiatives and lessons learned. Information will be provided to help affiliates connect with AMTE and with other affiliates. Time for affiliate leaders to discuss issues and ideas will be provided.

Session goals:

- To support the growth of affiliates and their membership;
- To identify the needs of AMTE's affiliates;
- To provide a venue for sharing ideas and "best practices" among affiliate leaders and
- To increase communication between the national organization and the affiliates.

To Register: Indicate your interest on the Fifteenth Annual AMTE Conference Registration Form.

2. Framing and Analyzing (In)equity and Power in Mathematics Methods

Sponsor: AMTE's Equity Task Force

Lead Presenters: Julia Aguirre, University of Washington-Tacoma, jaguirre@u.washington.edu & Rochelle Gutiérrez, University of Illinois at Urbana-Champaign, rg1@illinois.edu

Presenter: José Maria Menéndez, Radford University

Time: 8:00 a.m. – 12:00 p.m.

Session limit: 40 participants

Description: Faculty experienced at addressing equity offer their perspectives on how they frame their work with pre-service teachers, and how their contexts and personal identities influence what they do in their courses. Participants will engage in selected activities that aforementioned faculty use in their courses and analyze these activities for what potential benefits/limitations/challenges exist.

Session goals:

- To offer instructors of mathematics methods courses a variety of "stances" and specific approaches used in addressing (in)equities and power with pre-service teachers and
- To allow participants to reflect on how these relate to one's own practice and students.

To Register: Indicate your interest on the Fifteenth Annual AMTE Conference Registration Form.

3. Using the TPACK Framework to Think About Issues in Technology-Based Professional Development for Mathematics Teachers

Sponsor: AMTE's Technology Committee

Organizer: Susann M. Mathews, Wright State University, susann.mathews@wright.edu

Presenters: Tom Dick, Oregon State University, Enrique Galindo, Indiana University, Christopher Johnston, George Mason University, Bob Ronau, University of Louisville

Time: 8:30 – 11:30 a.m.

Session limit: 50 participants

Description: This session will engage participants with the main messages in the TPACK (Technology Pedagogical and Content Knowledge) framework opening with an overview using examples drawn from virtual manipulatives. Participants will have an opportunity to gain more in-depth, hands-on familiarity with either CAS graphing calculator/software (TI-Nspire) or dynamic geometry software (GeoGebra). We will close with a discussion and reflection on how TPACK can guide our practices.

Session goals:

- To illustrate specific TPACK issues that could help teachers (and preservice and inservice professional developers of teachers) think about effectively choosing and using technology in the mathematics classroom. Emphasis will be given to the theme of using technology as a lever for sense-making and reasoning. The hands-on session will provide a practical lens for participants to think more deeply about choosing and using technology, especially in terms of what tasks and questions are afforded (as in "what are the good questions I can ask students using this?"), and
- To engage in professional development to enhance their technological and pedagogical knowledge, in line with TPACK principle IV.

To Register: Indicate your interest on the Fifteenth Annual AMTE Conference Registration Form.

4. Designing Professional Development to Build Specialized Mathematical Knowledge for Teaching

Sponsors: Researching Mathematics Leader Learning (RMLL), NSF Grant No.: ESI 0554186, and Teaching Mathematical Knowledge for Teaching (Dev-TE@M and Mod4)

Lead Presenter: Elham Kazemi, University of Washington, ekazemi@u.washington.edu

Presenters: Dev-TE@M & Mod4: Deborah Ball, Hyman Bass, Minsung Kwon, Yvonne Lai, Laurie Sleep, Kara Suzuka, and Mark Thames

Presenters: RMLL: Elham Kazemi, Judy Mumme, Cathy Carroll, Rebekah Elliott, Matt Campbell, Kristin Lesseig, Megan Kelley-Petersen

Time: 8:30 – 11:30 a.m.

Session limit: 48 participants

Description: Participants will engage in analyzing and designing mathematical tasks for PD that promote the development of specialized mathematical knowledge for K-12 teaching. Participants will discuss how the skilled facilitation of engaging teachers in mathematics connects to the subject matter demands of classroom teaching.

Session goals: In this interactive session, collaboratively designed by researchers from two research projects that have been designing and studying the development of leaders of professional development, participants will:

- Engage in examining the design of mathematical tasks to support K-12 teachers' learning of specialized content knowledge;

- Consider how to frame mathematical ideas in ways that focus teachers on the specialized content knowledge they need to draw upon in classroom practice;
- Engage with several mathematical tasks and analyze what specialized content knowledge could be developed through skilled use of the tasks with teachers (This analysis will be connected to an articulation of the skills facilitators need to orchestrate mathematically productive discussions with teachers while working on such tasks); and
- Consider how such knowledge might be deployed in classroom teaching. Mathematical tasks used during the session will be available for future use by participants.

To Register: Send an e-mail with the subject line "Designing Professional Development Registration" to Veronica Medina (vmedina@wested.org) with the following information: Name, affiliation, e-mail address, telephone, and in a sentence or two, please describe your interest in this session. Deadline for registration is December 3rd. You will receive an email confirmation by December 17th.

5. Facilitating Teachers' Discussions of Practice Using Animated and Video Representations of Teaching

Sponsor: ThEMaT (Thought Experiments in Mathematics Teaching), a National Science Foundation-funded project

Organizer & Lead Presenter: Patricio Herbst, University of Michigan, pgherbst@umich.edu

Presenter: Deborah Moore-Russo, SUNY Buffalo

Time: 8:30 – 11:30 a.m.

Session limit: 50 participants

Description: We show exemplars of session plans designed to engage teachers in conversations about practice. These exemplars will have been designed in a PME-NA 2010 working group and will illustrate a taxonomy of activity structures, discussion tasks and facilitation moves that are possible to use with animated and video representations of teaching. Participants will discuss and improve those session plans.

Session goals:

- To work on validating and expanding a catalogue of facilitation tools that includes activity structures, discussion tasks, and facilitator moves to be used face-to-face and online; and
- To review and critique actions that clients of teacher development sessions are allowed to do with animated and video representations of teaching in an online resource (ThEMaT online) that can be used in face-to-face and online sessions.

To Register: Send an e-mail to themat@umich.edu indicating interest in participating.

6. NCTM's NCATE Program Reviewer Training Workshop

Sponsor: National Council of Teachers of Mathematics

Organizer/Presenter: Monique Lynch (mlynch@nctm.org)

Time: 8:30 – 11:30 a.m.

Session limit: 40 participants

Description: This session is designed to prepare potential mathematics education program report reviewers for the current NCATE system. Attendance would also be useful to existing reviewers as a refresher and update.

To Register: E-mail nctmncate@nctm.org for an application form. There is no charge to attend, but the completion of an application and pre-registration for the workshop are required.

7. Pathways to Middle School Mathematics Teaching in California: Concerns and Opportunities

Organizer & Lead Presenter: Carol Fry Bohlin, California State University, Fresno, carolb@csufresno.edu

Presenters: Joanne Rossi Becker, San Jose State University; Babette Benken, California State University, Long Beach; Mark Ellis, California State University, Fullerton; Davida Fischman, California State University, San Bernardino; Eric Hsu, San Francisco State University; Margaret Kidd, California State University, Fullerton; David Pugalee, University of North Carolina, Charlotte, and Felipe Razo, California State University, East Bay.

Time: 8:30 – 11:30 a.m.

Session limit: 100 participants

Description: Multiple certification pathways exist in California for teaching middle school mathematics.

There is considerable concern and debate about the efficacy of these pathways, particularly since algebra is a standard eighth-grade course in many schools. There is a need for discussion about middle school mathematics teacher preparation—effective models, methods and content courses, existing research, and a recommended research agenda.

Session goals: This session will provide a venue for California's mathematics teacher educators to do the following:

- Review the various certification pathways that currently exist for middle school mathematics in California.
- Learn about programs designed to prepare prospective middle school teachers from mathematics teacher educators who are involved in these programs, and receive a copy of their program/coursework outlines.
- Review existing research regarding middle school mathematics teacher preparation and teacher effectiveness.
- Identify and discuss key issues of interest to participants within small groups and report back to the full group.
- Propose research questions to be addressed concerning effective mathematics teacher preparation at the middle school level.

To Register: Send an e-mail with the subject line "AMTE Preconference Session RSVP" to Carol Fry Bohlin at carolb@csufresno.edu.

8. Preparing to Teach Mathematics with Technology [PTMT]: Engaging Practices and Materials for Technology-Using Mathematics Teacher Educators

Sponsor: Preparing to Teach Mathematics with Technology, a National Science Foundation-funded project

Organizer & Lead Presenter: Hollylynne Lee, NC State University, hollylynne@ncsu.edu

Presenters: Karen Hollebrands, and the PTMT project partners

Time: 8:30 – 11:30 a.m.

Session limit: 30 participants

Description: Participants will engage in using National Science Foundation-sponsored teacher education materials to prepare middle and secondary mathematics teachers to effectively use technology. The materials aim to develop teachers' TPACK in an approach that integrates content, pedagogy and technology. Materials to be discussed focus on Data Analysis and Probability using *TinkerPlots* and *Fathom*, and Geometry using *Sketchpad 5.0*. Participants will become part of a national collaborative network. See <http://ptmt.fi.ncsu.edu/>.

Session goals:

- Develop a network of technology-using mathematics teacher educators (novices through experts) that can support each other in their efforts to prepare teachers to effectively use technology in mathematics teaching.

- Engage mathematics teacher educators (MTEs) in several activities from the PTMT module on Data Analysis and Probability, using technology tools such as TinkerPlots and Fathom. Participating MTEs will gain familiarity and raise their comfort level with the use of these technology tools and the content of data analysis and probability.
- Participant MTEs will be invited to participate in evaluation and research efforts associated with the implementation of the curriculum materials.
- Introduce the participating MTEs to some sample activities from the new geometry module to solicit feedback and recruit field testers of the geometry module using Sketchpad 5.0.

To Register: Register via the PTMT website at <http://ptmt.fi.ncsu.edu/amte11>. There is no charge to attend. Participants will be asked to bring their own laptops and download evaluation versions of the needed software, if they do not currently own the licenses.

9. STaR Fellows Follow-up

Sponsor: National Science Foundation STaR Fellow Program (University of Missouri)

Organizer & Lead Presenter: Robert E. Reys, University of Missouri, reysr@missouri.edu

Time: 8:30 – 11:30 a.m.

Session limit: 50 participants

Description: This session will provide an opportunity for STaR Fellows (early career mathematics teacher educators) to continue networking and build on the work initiated at the 2010 STaR Summer Institute. They will be meeting in small group sessions to focus on common areas of interest related to research and teaching responsibilities.

Session goals: The STaR Fellows will:

- Provide progress reports on research projects/manuscripts on which they are collaborating;
- Share syllabi and reflect on courses being taught;
- Demonstrate progress toward attaining tenure at their institution; and
- Attend and participate in the AMTE annual meeting that will further promote their professional growth and increase their networking capability.

To Register: This session is limited to STaR Fellows that participated in the summer STaR Institute at PCMI. Robert Reys will communicate with and register all preconference session participants (2010-11 STaR Fellows).

10. Understanding Students' Conceptions of Integers and Implications for Teacher Educators

Sponsor: Mapping Developmental Trajectories of Students' Conceptions of Integers, a National Science Foundation-funded project

Organizer & Lead Presenter: Lisa Lamb (lisa.lamb@sdsu.edu), San Diego State University

Presenters: Jessica Pierson, Ian Whitacre, Bonnie Schappelle, Mindy Lewis, all from San Diego State University

Time: 8:30 – 11:30 a.m.

Session limit: 50 participants

Description: In this interactive session, we will draw upon research-based results to share both the ways K-12 students make sense of integers and students' possible learning trajectories. Our primary goal is to

engage participants in a discussion about how to use this information to support work with practicing and prospective teachers. Participants will receive a DVD containing video of children's strategies.

Session goals:

- To share research-based findings about students' conceptions of integers, grades K-12
- To share a framework for understanding trajectories of students' integer understanding
- To engage in discussions about how participants might use this information with prospective and practicing teachers, particularly given that participants will be given a DVD of video used during the session.

To Register: Send an e-mail to Candace Cabral, at ccabral@sunstroke.sdsu.edu, including your name, affiliation, and reason for attending the session. There is no charge to attend.