

Connections

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AMTE PRESIDENT'S MESSAGE

Preparing for the Future: Finding Solutions

Marilyn E. Strutchens, Auburn University



In thinking about this month's president's message for the *Connections* Fall Newsletter, I began to reflect on a column that I wrote for a college newsletter about 29 years ago when I was a sophomore majoring in Fashion Merchandising. My article was entitled —Focus on Fashions: Fall Styles Offering Rich Colors and Textures. After viewing several fashion magazines, I could easily recommend to my fellow coeds what was in style at the time and what would make their wardrobes pop for the fall.

Today, as president of the Association of Mathematics Teacher Educators (AMTE), I am thinking about the kind of learning experiences that mathematics teachers will provide to their students as they return to school after their summer breaks. I am wondering about the preparation and on-going professional development that teachers have had and if they are ready to meet the needs of their diverse students. Moreover, I am thinking about the myriad of ways that teachers come to know what they need to know and the types of district and building supports which need to be in place in order for them to teach mathematics well to their students.

The Common Core State Standards for Mathematics (CCSS-M) and the related assessments are catalysts in 2011 that have many people thinking about teacher knowledge and effectiveness, and how best to help teachers develop the knowledge and skills they need. Currently 44 states have adopted these standards. Stakeholders want to know how to capitalize on the commonness of the CCSS-M and how to create and provide professional development and teacher preparation so implementation is successful.

Thinking about large-scale professional development is not new to mathematics teacher educators. Over the past 30 years many of us have been working on how to change the teaching and learning of mathematics from a traditional setting with students in rows and listening to their teachers to a reformed setting with students in groups actively engaged in higher-order problem solving with teachers facilitating students' thinking and interactions around tasks. The National Council of Teachers of Mathematics (NCTM) Standards documents (NCTM, 1989, 1991, 1995, & 2000), which have since been extended with *Curriculum Focal points for Prekindergarten Through Grade 8 Mathematics: A Quest for Coherence* (NCTM, 2006), and *Focus in High School Mathematics: Reasoning and Sense Making* (NCTM, 2009 - Present) were the driving forces behind this movement. Similar ideas have been articulated in *Principles and Indicators for Mathematics Educators (PRIME) Leadership Framework* (National Council of Supervisors of Mathematics, 2008), and *Standards for Elementary Mathematics Specialists State Certification* (AMTE, 2010).

Thus, along with the emphasis of important mathematics in the CCSS-M, many of us are rallying around the Standards for Mathematical Practice which state that students should be able to: 1) Make sense of problems and persevere in solving them, 2) Reason abstractly and quantitatively, 3) Construct viable arguments and critique the reasoning of others, 4) Model with mathematics, 5) Use appropriate tools strategically, 6) Attend to precision, 7) Look for and make use of structure, and 8) Look for and express regularity in repeated reasoning.

A key concern is how teacher educators can help teachers embed the Standards for Mathematical Practice into their curriculum and teaching and not just address them on a superficial level. Furthermore, a goal is for teachers, regardless of the set of standards for which they are held accountable to be able to do the following tasks well:

(Continued on page 2)

The Association of Mathematics Teacher Educators

<http://www.amte.net>

President

Marilyn Strutchens
Department of Curriculum & Teaching
Auburn University
(334) 844-6838
strutme@auburn.edu

Past-President

Barbara Reys
Learning, Teaching & Curriculum
University of Missouri
reysb@missouri.edu

Secretary

Maggie B. McGatha
Department of Middle & Secondary Education
University of Louisville
maggie.mcgatha@louisville.edu

Treasurer

Lynn Stallins
Interim Associate Dean of Graduate Studies
Bagwell College of Education
Kennesaw State University
lstallin@kennesaw.edu

Board Members at Large

Randy Philipp
School of Teacher Education
San Diego State University
rphilipp@mail.sdsu.edu

Amy Roth McDuffie
Department of Teaching and Learning
Washington State University, Tri-Cities
mcduffie@tricity.wsu.edu

Beth Herbel-Eisenmann
Teacher Education
Michigan State University
bhe@msu.edu

Executive Director

Nadine Bezuk
School of Teacher Education
San Diego State University
(619) 594-3971
nbezuk@mail.sdsu.edu

Affiliate Director

Sandi Cooper
Department of Curriculum & Instruction
Baylor University
Sandra_Cooper@baylor.edu

Conference Director

Susan Gay
Department of Curriculum & Teaching
University of Kansas
sgay@ku.edu

Sponsorship Director

Jeffrey Wanko
Department of Teacher Education
Miami University
wankojj@muohio.edu

Newsletter Editor

Trena L. Wilkerson
Department of Curriculum and Instruction
Baylor University
Trena_Wilkerson@baylor.edu

Publications Director

Alfinio Flores
Department of Mathematical Sciences
University of Delaware
alfinio@math.udel.edu

Website Coordinator

Tim Hendrix
Dept. of Mathematics & Computer Science
Meredith College
hendrix@meredith.edu

- Design mathematically accurate explanations that are comprehensible and useful for students
- Use mathematically appropriate and comprehensible definitions;
- Represent ideas carefully, mapping between a physical or graphical model, the symbolic notation, and the operation or process;
- Interpret and make mathematical and pedagogical judgments about students' questions, solutions, problems, and insights (both predictable and unusual);
- Be able to respond productively to students' mathematical questions and curiosities;
- Make judgments about the mathematical quality of instructional materials and modify as necessary;
- Be able to pose good mathematical questions and problems that are productive for students' learning; and
- Assess students' mathematics learning and take next steps. (Ball, 2003, p. 6)

This list carries implied messages related to equity issues and other pedagogical concerns that are too numerous to list in this message. The point is that there are high expectations for teachers, but there is not a consensus of how to reach those expectations.

As I have mentioned in my previous messages, I have been involved with several initiatives surrounding the CCSS-M, some directly related to my role as President of AMTE. Many of the conversations involve professional development and teacher preparation. Discussions included who (mathematics educators, mathematicians, teachers themselves and others) should deliver the professional development and how the mathematics education of teachers has been delivered in a number of forms over the years. This ranges from graduate and undergraduate programs offered by institutions of higher education; institutes provided by professional organizations; and professional development opportunities provided by state departments, school districts, partnerships between universities and school districts, textbook companies and similar entities. I am sure this is not an exhaustive list.

The components of what teachers receive and the duration of these types of learning experiences also vary greatly. Even though there is not a definitive consensus on which components of these experiences yield the most in terms of increased teacher knowledge and student achievement, there are some practices that have been targeted as promising. These include designing the experiences around learning theories related to how people learn, providing opportunities for teachers to build their knowledge and skills, using or modeling with teachers the strategies teachers will use with their students, building learning communities, and supporting teachers to serve in leadership roles (Loucks-Horsley et al., 2010; Weiss, 2011).

On the one hand it appears that we know what teachers need to know and be able to do (Ball, 2003), and how to provide them with the type of mathematics education to foster those skills (Loucks-Horsley et al., 2010; Weiss, 2011). On the other hand we do not know how to ensure that what is learned in a particular setting, whether an institution of higher education or in a professional development setting, is enacted in the classroom and sustained over time.

I challenge us as mathematics teacher educators to work with our school partners to come up with ideas that will enhance the quality of mathematics teacher education and sustainability of efforts in the buildings. Is part of the answer developing mathematics coaches, or professional learning communities, or neither, or both? What other means can be used to maximize the learning experiences for teachers and students? Also, if you know of professional development practices or teacher preparation programs that are helping teachers and students to reach their full potential, I challenge you to write about the work or find other ways to share the information with your colleagues. It is not enough to talk about what needs to be done. WE must take action.

Please contact me by email (strutme@auburn.edu) or Lynn Breyfogle (mbreyfog@bucknell.edu) chair of AMTE's CCSS-M Taskforce if you would like to share work that you are doing with teachers around the CCSS-M. Also, please check the AMTE website for upcoming links to resources related to the implementation of the CCSS-M.

(References found on page 3)

References for President's Message (continued from page 2)

**Make hotel
reservations
for the 2012
AMTE
Conference by
December 2,
2011**

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AMTE 2012 16th ANNUAL CONFERENCE



**New online
conference
registration
process!**

**Go to
www.amte.net**

Make your plans now to attend the 2012 AMTE Annual Conference in Fort Worth, TX, February 9-11, 2012. At this conference, we will conclude the year-long celebration of AMTE's 20th anniversary.

The keynote speakers for the 2012 conference have been selected. Details on these speakers and information on their presentations can be found on [pages 5-6](#). Thursday's General Session will feature Doug Clements, University of Buffalo, SUNY. Friday's Judith E. Jacobs Lecture will be given by Deborah Schifter, Education Development Center.

Details of the February 2012 conference include the following:

- All meals on Friday and Saturday's breakfast and lunch are included in the registration fee.
- Preconference sessions will be held Thursday morning; see [page 4](#) for details or the [AMTE website](#).
- A full slate of conference sessions begins at 1:00 p.m. on Thursday.
- The Thursday General Session will begin about 5:00 p.m. followed by dinner on your own.
- The business meeting will occur in conjunction with Saturday's lunch.
- The conference will end approximately at 1:15 p.m. on Saturday.

The conference site is the Worthington Renaissance Hotel in Fort Worth, TX. The hotel room rate is \$159 for a single or double room. Make your reservation by **Friday, December 2, 2011** to get our special conference room rates. Please be aware that the conference block of rooms may be sold out early. Once the room block is full, the hotel will accept reservations at the hotel's prevailing rate and only on a space-available basis. Hotel reservations can be made using the link on the [AMTE website](#) or by calling Marriott Passkey Reservations at 800-266-9432. Be sure to mention the "AMTE Conference" when you call. We encourage you to reserve your room soon.

Conference registration is now available on the [AMTE website](#). **Registration deadline is December 2, 2011.** **Early registration** at reduced rates (see [page 4](#)) is available through **September 30**. The speaker registration deadline is September 15. We hope to see you in Fort Worth in February 2012!

Susan Gay, AMTE Conference Director, sgay@ku.edu, University of Kansas, KS

The Sixteenth AMTE Conference will be held February 9-11, 2012 in Fort Worth, TX. Online conference registration and payment is now available on the AMTE website (www.amte.net). You can also download and print a registration form from the AMTE website to use if you are paying your registration fee by mail or fax.

There is **no onsite registration** available; you must register prior to the conference. Registration fees vary by deadline date. Conference registration is limited; please register early.

Meals included as part of the registration fee:

Thursday: afternoon break (Note: Dinner is on your own after the General Session.)

Friday: continental breakfast, lunch, afternoon break, and dinner

Saturday: continental breakfast and lunch

Registration for the conference (amounts listed are US funds):

	Early Registration (Postmarked by Sept. 30)	Registration (Postmarked by Dec. 2)	Late Registration (Payment RECEIVED by Jan. 27)
Registration and Membership Dues (1 year of dues included)	\$375	\$450	\$525
Registration and Membership Dues (2 years of dues included)	\$447	\$522	\$597
Registration and Membership Dues (3 years of dues included)	\$511	\$586	\$661
Member Registration	\$295	\$370	\$445
Non-Member Registration	\$405	\$480	\$555
Full-time Graduate Student Registration and Membership Dues*	\$285	\$360	\$435
Full-time Graduate Student Member Registration*	\$245	\$320	\$395
Emeritus Member Registration and Membership Dues (1 year of dues included)	\$335	\$410	\$485
Emeritus Member Registration and Membership Dues (2 years of dues included)	\$371	\$446	\$521
Emeritus Member Registration and Membership Dues (3 years of dues included)	\$403	\$478	\$553
Emeritus Member Registration	\$295	\$370	\$445

*Graduate students must submit a Graduate Student Verification Form in order to receive the reduced registration fee. This form can be found on the registration website.

The deadline for speaker registration is September 15, 2011.

***No onsite registration!
See the chart to the left for registration deadlines.***

AMTE Conference Featured Speaker: General Session

Dr. Douglas H. Clements

Lessons from Research: What Research Does and Does Not Tell Us



Douglas H. Clements is SUNY Distinguished Professor of Education at the University of Buffalo, SUNY. Previously a pre-school and kindergarten teacher, his present research interests are in the areas of the learning and teaching of early mathematics and computer applications. He has published over 100 research studies, 8 books, 50 chapters, and 250 additional publications. His latest books, *Early Childhood Mathematics Education Research: Learning Trajectories for Young Children* and a companion book *Learning and Teaching Early Math: The Learning Trajectories Approach* detail research-based learning trajectories in early mathematics education.

Dr. Clements has directed 20 projects funded by the National Science Foundation (NSF) and the U.S. Dept. of Education's Institute of Education Sciences (IES). Currently, Dr. Clements is Principal Investigator on two large-scale randomized cluster trial projects (IES). He is also working with colleagues to study

and refine learning trajectories in measurement (NSF). Two recent research projects have just been funded by the NSF. Clements is PI on the first, Using Rule Space and Poset-based Adaptive Testing Methodologies to Identify Ability Patterns in Early Mathematics and Create a Comprehensive Mathematics Ability Test, which will develop a computer-adaptive assessment for early mathematics. Clements is co-PI on the second, Early Childhood Education in the Context of Mathematics, Science, and Literacy, developing an interdisciplinary preschool curriculum.

Dr. Clements was a member of President Bush's National Mathematics Advisory Panel, convened to advise the administration on the best use of scientifically based research to advance the teaching and learning of mathematics and coauthor of the Panel's report. He was also a member of the National Research Council's Committee on Early Mathematics and co-author of their report. He is presently serving on the Common Core State Standards committee of the National Governors Association and the Council of Chief State School Officers, helping to write national academic standards and the learning trajectories that underlie them. He is one of the authors of NCTM's *Principles and Standards in School Mathematics* and *Curriculum Focal Points*.

Dr. Clements teaches courses on early childhood mathematics, early childhood educational technology, and the cognitive foundations of early childhood education. In addition, he works with over 350 teachers in three current projects that include professional development and collaborative research.

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**Session Description:** What is the state of early and elementary mathematics education? What does the research say? Douglas H. Clements paints a picture of where we stand regarding standards, curriculum, teaching, and professional development. He draws several "lessons" from research—findings that support visions of new approaches to mathematics education, including information from recent publications that he co-authored, including the report of President Bush's National Mathematics Advisory Panel, NCTM's Curriculum Focal Points, the National Research Council report on early mathematics, and the Common Core State Standards. At the core of these approaches are learning trajectories—research-based paths of learning and teaching. Participants will hear and see examples of projects using these approaches.

*Learning trajectories are research-based paths of learning and teaching.*

# AMTE Conference: Judith Jacobs Lecture Dr. Deborah Schifter

*Interpreting the Common Core: What might it look like in classrooms?*



**Deborah Schifter**, Principal Research Scientist in the Learning and Teaching Division of the Education Development Center (EDC), has more than 25 years of experience providing professional development in mathematics and conducting research on student mathematics learning. Recently she has focused on supporting teachers adopting the mathematical practices in the Common Core State Standards and on understanding the potential for algebraic thinking in the elementary grades. Dr. Schifter leads EDC’s Mathematics Leadership Program (MLP), which provides coordinated professional development experiences for educational leaders across a range of roles and responsibilities. She is coauthor of MLP’s *Developing Mathematical Ideas*. She is coeditor of *A Research Companion to Principles and Standards for School Mathematics*, coauthor of *The Mathematical Education of Teachers*, *Reconstructing Mathematics Education: Stories of Teachers*

*Meeting the Challenge of Reform*, and editor of a two-volume anthology of teachers' writing, *What's Happening in Math Class?* Dr. Schifter is coauthor of the second edition of the K–5 curriculum, *Investigations in Number, Data, and Space* and coauthor of the forthcoming *Connecting Arithmetic to Algebra*.

Dr. Schifter has been a member of the editorial board of *Journal of Mathematics Teacher Education* since 2001. She was a writer for the Mathematical Education of Teachers Project and has either chaired or been a member of numerous advisory committees for the National Council of Teachers of Mathematics, the American Educational Research Association, and the National Science Foundation. She is a frequent collaborator with colleagues at TERC and SummerMath for Teachers at Mount Holyoke College.

She is an inaugural fellow of the International Society for Design and Development in Education. AERA awarded her its Professional Service Award in 1996, and the Constructivist Research, Theory, and Practice Special Interest Group recognition for Significant Contribution to the Profession in 1999.

Before joining EDC, Dr. Schifter taught elementary, secondary, and college-level mathematics and was an applied mathematician at the Naval Research Laboratory. In 1985, she began working for SummerMath for Teachers at Mount Holyoke College and directed that program from 1988 to 1993. She received a BA from Saint John's College, Annapolis, an MA in applied mathematics from the University of Maryland, and an MS and PhD in psychology from the University of Massachusetts.



**Session Description:** Deborah Schifter will present samples of student work and classroom video that illustrate teachers and students engaging with a constellation of content and practice standards related to the Common Core's emphasis on the properties of the operations.

*Engaging students and teachers in content and practice*

## Developing as Mathematics Teacher Educators across the Professional Continuum

by Kathryn B. Chval (2011 AMTE Early Career Award Winner) and  
John K. Lannin (2009 AMTE Early Career Award Winner)

*Opening up our practice to one another was not always comfortable.....Yet, throughout the year, we learned a great deal about teaching undergraduates and our effectiveness as MTEs increased.*

Becoming a mathematics teacher educator (MTE) is challenging and requires professional development as well as a supportive environment. We both have fond memories of MTE mentors who encouraged and prepared us to enter the field. As we transitioned from roles as full-time classroom teachers to MTEs, we sought regular opportunities to grow professionally. Yet, as time passed and the demands on our time grew, our learning opportunities to grow as MTEs were not prioritized in the same way. We both realized we needed to be purposeful about our professional growth and we needed specific mechanisms beyond conferences and literature (although these are beneficial). We began to ask questions such as:

- What are ways we can challenge ourselves to grow as MTEs?
- Who can we work with to challenge our thinking and help us make decisions about our practices?
- What are tools and resources that can give us new insights?
- What are processes and criteria we can use to make decisions about the content of our courses?

How can we support future and early career MTEs?

In this article, we describe some of our experiences to begin a conversation about these issues with the wider AMTE membership.

### **The Early Years**

During our doctoral studies, we both had opportunities to observe and study experienced MTEs while they engaged with both preservice and practicing teachers. These advisors and mentors shared entertaining stories about their experiences, explained the purposes behind their instructional decisions, posed challenging questions, and expected us to engage in deep discussions about the work of MTEs. They provided insight into their thinking regarding how they designed learning experiences for mathematics teachers. More importantly, they shared "the floor" with us (i.e., invited us to lead PD sessions) so we could learn to do the same. At the same time, we spent a great deal of time in K-12 classrooms, working with teachers and students. We did not realize at that time how often we would draw on and refer to these experiences in our future efforts as MTEs.

After we accepted our positions as faculty members and were assigned to teach courses for future elementary teachers, we both recognized the potential isolation that could occur. We could fulfill many MTE responsibilities (e.g., create a syllabus, design a course, meet with students, or grade papers) without working with other MTEs. To avoid isolation, we videotaped and observed each other teach over the course of an academic year and involved doctoral students in weekly discussions about course design and teaching mathematics/methods courses. Opening up our practice to one another was not always comfortable. We were expected to answer questions such as: Why did you make that decision? What did you hope to accomplish through that discussion? Why did you ignore that preservice teacher (PST) response? We shared examples of PSTs' misconceptions and considered how we could design mathematical tasks to challenge them. As a result, we felt additional pressure to be prepared and purposeful about our decisions. Yet, throughout the year, we learned a great deal about teaching undergraduates and our effectiveness as MTEs increased. Benefits that resulted from this investment included making explicit what we often did tacitly (e.g., how and why we help PSTs see ourselves as credible, how we deal with PSTs who question our authority, and why we choose and sequence particular tasks that confront PSTs' mathematical thinking). Moreover, we strengthened our abilities to design tasks and assignments, facilitate discussions, and respond to challenging PSTs.

### **Recent Experiences**

We also began a process to help others learn how to do the work of MTEs, drawing on the experiences we had with those who had supported us in our preparation. We involved doctoral students in the discussions mentioned above for our benefit, but also to prepare them to teach sections of these courses. They observed us teach for a semester and participated in weekly meetings while they interned in our courses and then taught a section of the course. We developed detailed lessons and corresponding mathematical tasks that were refined each time the course

## Developing as Mathematics Teacher Educators across the Professional Continuum *continued*

was taught. In addition, along with Fran Arbaugh, we developed video and written cases to use with a larger group of doctoral students during lunch seminars to aid their transition from classroom teachers to MTEs. These cases included videos of our practice as well as transcripts and student artifacts from our courses. They addressed issues such as PST mathematical misconceptions, PSTs challenging the instructor's authority, the difference between designing a task for K-12 students and PSTs, and video resources MTEs can use with PSTs. We collected data during these lunch discussions (e.g., written responses from the participants and audio records of the discussions) to better understand the needs of beginning MTEs. Although we collected evidence that suggested these mechanisms supported the growth of novice MTEs, we also recognized that these activities facilitated our own professional growth.

As we designed cases for beginning MTEs, we engaged in lively discussions about the important knowledge that we gained as MTEs that differed markedly from our work as mathematics teachers. For example, when we considered showing various instructional videos, we discussed the specific purposes of using these videos (e.g., to challenge PST beliefs about what K-12 students can do, to demonstrate the sociomathematical norms in a classroom, or to demonstrate specific K-12 student mathematical difficulties). We also discussed what PSTs should learn about mathematics, assessment, technology, and equity and how we should coordinate our efforts across courses.

Research activities—in our classrooms, but also in local schools—have also supported our growth as MTEs. This past year, we were approached separately by two doctoral students who wanted to conduct dissertation studies in our mathematics/methods courses for preservice elementary teachers. Again, this was not always a comfortable experience, but as we opened up our practice for others to examine and write about, we initiated experiences that facilitated reflection and learning. As we conducted research activities in classrooms, we considered our MTE practice in new ways. For example, during the past two years Kathryn has been facilitating professional development with third grade teachers, filming their mathematics lessons by having English language learners (ELLs) wear head-mounted video cameras, and then debriefing the lessons with the teachers using video clips filmed by the children. She has learned a great deal about enhancing mathematics curriculum materials and creating classroom communities to support ELLs, which she is now able to use with PSTs. (She will share more about this experience during her session at the AMTE meeting in February.) John has been examining the difficulties of elementary students who struggle in mathematics. This study has challenged John to consider the mathematical strengths and difficulties that struggling students bring to the classroom. New videos filmed in this research project demonstrate the unpredictable nature of student mathematical understandings and provide an additional resource that we can use in our courses for future and practicing teachers.

### ***Looking Forward***

We sought opportunities to collaborate with others (i.e., teachers, PSTs, doctoral students, and other MTEs) and to attend professional development to support our growth as MTEs. Yet, as we look forward we want to identify additional mechanisms and collaborators that will help us grow as MTEs. We acknowledge the continuing influx of new ideas, innovations, and research such as the Common Core State Standards (CCSS), Response to Intervention (RtI), technology, and issues related to equity that require us to develop additional knowledge and expertise, change the content of the courses we teach, and enhance our practice. Yet, we see these new challenges as opportunities to continue to develop as MTEs. Such challenges force us to set new goals and develop new strategies for our continued improvement (unless we choose to ignore them). They suggest the need for us to collaborate with other MTEs and teacher educators in ways that improve our understanding of the role of MTEs and enhance the experiences for the teachers we will work with in the future. More importantly, we need to create additional communication and coordination structures that support MTEs who work in isolation, disseminate resources that MTEs create, challenge MTEs throughout the professional continuum, and eliminate duplication of effort. We look forward to continuing the conversation with other AMTE members at the February conference in Fort Worth and at future AMTE conferences.

*Again, this was not always a comfortable experience, but as we opened up our practice for others to examine and write about, we initiated experiences that facilitated reflection and learning.*

## Nominations Sought for 2012 AMTE's Early Career Award

**Deadline for  
nominations:  
October 15,  
2011**

The Board of Directors of the Association of Mathematics Teacher Educators (AMTE) has established an **Early Career Award**. The Early Career Award will be given on an annual basis, and the recipient recognized at the annual meeting of the AMTE. The purpose of this award is to recognize a mathematics teacher educator who, while early in his/her career, has made distinguished contributions and shows exceptional potential for leadership in one or more areas of teaching, service, and/or scholarship. The nominee for the Early Career Award should be a mathematics teacher educator practicing in the field no later than 10 years after receipt of a doctoral degree. The Award is intended to recognize a colleague's contributions in his or her program of teaching, service, and/or scholarship within the first decade after receiving a doctoral degree. We invite nominations that highlight an individual's innovative contributions in one or more areas of teaching, service, and/or scholarship. **More detail on the application process can be found at [www.amte.net](http://www.amte.net).**

### Elections

**Candidates for AMTE President-Elect and Board  
Member-at-Large Announced**



In November 2011, AMTE members will be asked to vote for a President-Elect and a Board Member-at-Large. The election will be conducted online via the AMTE website. The newly elected officers will begin terms at the close of the 2012 AMTE Annual Conference. Further information about the candidates and the election process will be posted on the AMTE website ([www.amte.net](http://www.amte.net)) in October. The slate for each office is listed below.

#### Candidates for AMTE President-Elect

Fran Arbaugh  
Penn State University

Robert Ronau  
University of Louisville

#### Candidates for AMTE Board Member-at-Large

Enrique Galindo  
Indiana University

Stephen Pape  
University of Florida

*Submitted by Christine D. Thomas, Georgia State University  
Chair, AMTE Nominations and Elections Committee  
[cthomas212@aol.com](mailto:cthomas212@aol.com)*

**See page 10  
for  
preconference  
session  
information**

### 2012 Annual Conference Deadlines

**Registration for Speakers: September 15, 2011**

**Early Registration: September 30, 2011**

**Regular Registration: December 2, 2011**

**Deadline for Hotel Reservations: December 2, 2011**

**Conference Dates: February 9-11, 2012**

## PRECONFERENCE SESSIONS at AMTE 2012 CONFERENCE

### Thursday Morning, February 9, 2012

Nine preconference sessions are being offered on Thursday morning, February 9, 2012 at the AMTE Annual Conference at the Worthington Renaissance Hotel in Fort Worth, TX. Each session requires pre-registration. No on-site registration will be available. The following list contains the title of each session. More information about each session including the presenters, times, and session description can be found on the [AMTE website](#). For more information on any session, you can contact the session organizer. **New this year**, you can register for any of these preconference sessions by indicating your interest on the AMTE Conference Registration Form on the [AMTE website](#).

#### Session Title

1. Connecting and Empowering AMTE Affiliates
2. Elementary Mathematics Specialists: Getting Started and Moving Forward
3. Framing and Analyzing (In)equity and Power in Mathematics Methods II
4. Increasing Professional Development Capacity: Common Challenges and Approaches to Preparing Math Leaders to Facilitate Professional Development Programs
3. NCTM NCATE Program Reviewer Training Workshop
4. Professional Development at a Distance: Designing and Facilitating Online Courses for Inservice Mathematics Teachers
5. Sense Making and Reasoning with Technology – An Interactive Panel
6. Teacher Discourse Moves in Context
7. Teaching Mathematics for Elementary Teachers Courses in Light of the Common Core Standards

See the [AMTE website](#) for detailed session descriptions and presenters.

**NOTE:**  
Preconference sessions require pre-registration. Onsite registration will NOT be available.

Remember to register early for the conference! See page 4 for details.

## New Study Offers Current Research in Education of Teachers of Statistics

Since the mid-1980s, the International Commission on Mathematical Instruction (ICMI, [www.mathunion.org/ICMI/](http://www.mathunion.org/ICMI/)) has investigated issues of particular significance to the theory or practice of mathematics education by organizing specific ICMI studies on these themes. The 18th Study in this series has been organized in collaboration with the International Association for Statistical Education (IASE; [www.stat.auckland.ac.nz/~iase/](http://www.stat.auckland.ac.nz/~iase/)) and addresses some of the most important aspects of the teaching of statistics in schools by focusing on the education and professional development of teachers for teaching statistics. The Study included an IASE Roundtable Conference in 2008 and is fully reported in the Proceedings of the Study Conference ([www.ugr.es/~icmi/iase\\_study/](http://www.ugr.es/~icmi/iase_study/)) and in the Study book available in September 2011, published by Springer (<http://www.springer.com/education+%26+language/mathematics+education/book/978-94-007-1130-3>)

During the 2012 AMTE Conference in Fort Worth, TX, a follow-up session will be held for those participants in the 2011 STaR Institute. The 2011 STaR Fellows will meet with Robert Reys, University of Missouri, and Denise Spangler, University of Georgia, on Thursday, February 9, 2012 from 8:30 to 11:30 a.m. This session will provide an opportunity for the 2011 STaR Fellows (early career mathematics teacher educators selected via an NSF induction program) to continue networking and build on the work initiated during the Summer Institute. Arrangements will be coordinated by Barbara Reys. This session is limited to 2011 STaR Fellows.

### **First Annual Policy and Advocacy Breakfast At the 2012 Conference in Fort Worth, TX**

Come to AMTE's initial Policy and Advocacy Breakfast on Friday, February 10, during the 2012 AMTE Conference. Hear a brief update on policy and advocacy issues nationally that may impact you and your work in teacher education AND then join the discussion regarding local and regional challenges you may face.

### **2012 National Technology Leadership Initiative Fellowship Award Partnership Between AMTE & Texas Instruments**

AMTE has entered into a new agreement with Texas Instruments for the support of National Technology Leadership Initiative (NTLI) fellowships.

The NTLI fellowships were established to recognize exemplary presentations related to integration of technology in the core content areas at the annual meetings of each participating association.

AMTE will identify the winner of its annual NTLI fellowship through a competitive process. The AMTE Technology Committee will choose the best paper addressing integration of technology in mathematics instruction presented at its annual conference (held in January/February of each year). Candidates for the award must submit a complete paper suitable for publication in advance of the conference.

The \$1200 fellowship award will be used to support the travel and lodging for the winner to attend and present at the annual conference of the Society for Information Technology and Teacher Education (SITE).

Texas Instruments has agreed to sponsor the fellowship for 2012, 2013, and 2014 by providing the \$1200 funding each of these three years.

Submitted by Jeff Wanko  
Department of Teacher Education  
Miami University  
[wankojj@muohio.edu](mailto:wankojj@muohio.edu)  
AMTE Sponsorship Director

### **New AMTE Committee Appointments Coming Soon!**

Marilyn Strutchens (President) and Barbara Reys (Past-President) will be making new committee appointments next month (October). If you are interested in serving on a Committee, please complete and return the "2011 AMTE Volunteer Form" found at <http://www.amte.net/> (see "Volunteer Form" under Quick Links).

*For 2012  
Conference  
Deadlines  
See page 9*

## AMTE Elementary Mathematics Specialist (EMS) Initiative

Maggie McGatha ([maggie.mcgatha@louisville.edu](mailto:maggie.mcgatha@louisville.edu)) Nicole Rigelman ([rigelman@pdx.edu](mailto:rigelman@pdx.edu)).

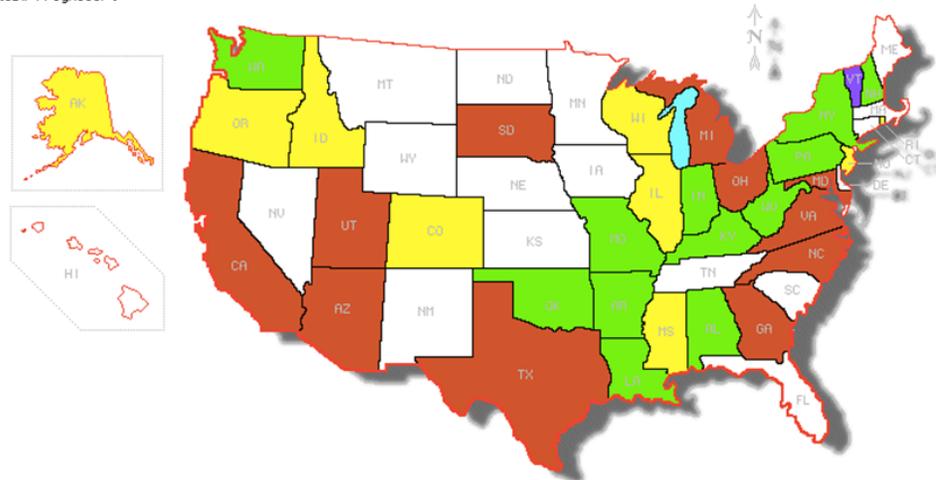
**Look for the EMS-focused pre-conference session at the AMTE conference in February 2012.**

AMTE continues its work strengthening the expertise for teaching mathematics in elementary schools through the Elementary Mathematics Specialists Initiative. The second conference for State Certification of Elementary Mathematics Specialists convened in Louisville, Kentucky July 7-9, 2011 with support from The Brookhill Foundation. The conference provided the opportunity for the nine attending states to become familiar with the AMTE *Standards for Elementary Mathematics Specialists: A Reference for Teacher Credentialing and Degree Programs* (2010), learn about the impact of EMS professionals on teachers and students, and hear stories from states recently adding EMS certification (e.g., Missouri, California, Louisiana). Participants also acquired information about various programs for EMS professionals (e.g., Virginia, North Carolina, Maryland), heard from practitioners working as specialists in the field about their work and perceived impact, and established a state action plan for establishing EMS certification/endorsement.

The map below shows the current status of EMS Certification across the United States. The states shown in rust and purple (n=13) represent those that currently have state certification/endorsements and/or programs. The states shown in green are those who participated in last year's State Certification Conference (n=12) with Kentucky, Louisiana, and Missouri securing certification since the conference and others continuing their efforts. The states shown in yellow are those who participated in this year's State Certification Conference (n=9). Look for updates about their progress in upcoming issues of *Connections*.

### EMS Certification

- - 2010 Conference PPS
- - 2011 Conference PPS
- - Statesw/Cert&Prog
- - Statesw/PrognCert



### Next Steps

Look for the EMS-focused pre-conference session at the AMTE conference in February 2012. Next steps for the EMS Initiative could include systematic publication and presentation efforts, a conference focused on program and course development at institutions of higher education, and an EMS research-catalyst conference. Stay tuned for news about this next phase of work!

### EMS Resources

*Standards for Elementary Mathematics Specialists: A Reference for Teacher Credentialing and Degree Programs* - [www.amte.net](http://www.amte.net)

*Elementary Mathematics Specialists Joint Position Paper with AMTE, ASSM, NCSM, and NCTM* -

[www.amte.net](http://www.amte.net)

*NCTM Research Brief and Clip on Mathematics Specialists and Coaches* - <http://www.nctm.org/news/content.aspx?id=8468>

*EMS&TL Clearinghouse (Elementary Mathematics Specialist and Teacher Leader Project* - <http://www.mathspecialists.org>

## Historical Notes about AMTE



As we continue to celebrate the 20<sup>th</sup> Anniversary of AMTE this year we will highlight events, historical information, and fun questions through the newsletter and the [AMTE website](#).

*Do you know.....*

*what year AMTE became an Affiliate member of NCTM?*

*in what year (and who) was the first Affiliate organization of AMTE?*

*Answers can be found on page 14.*

**AMTE 20<sup>th</sup>  
Anniversary  
is here!**

## AMTE members Consider participating in ICME-12!

The Twelfth International Congress on Mathematical Education (ICME-12), will be held July 8-15, 2012 in Seoul, Korea. Held every 4 years since 1968, ICME brings together mathematics educators from all over the world to discuss a very broad range of mathematics education issues, including mathematics teacher education. A hallmark of ICME is the active involvement of its participants. There are a wide variety of "Topic Study Groups" that include presentations around a focus or theme. Among the Topic Study Groups of particular interest to AMTE members are:

- TSG23: Mathematical knowledge for teaching at the primary level
- TSG24: Mathematical knowledge for teaching at the secondary level
- TSG25: In-service education, professional development of mathematics teachers.
- TSG26: Pre-service mathematical education of teachers

The deadline for presentation proposals to the organizers for the various Topic Study Groups is November 1, 2011.

In addition there are "Discussion Groups" that gather participants interested in discussing a challenging, controversial, or emerging issue in international or regional mathematics education. For more information, see the following website: <http://www.icme12.org>.

### ICME-12 TRAVEL GRANTS AVAILABLE

Applications for travel grants are also now available. These grants will support expenses related to attending ICME-12 including: Hotel accommodations, meal costs, and conference registration, as well as air transportation (on U.S. carriers only).

Eligibility: These National Science Foundation funded ICME-12 grants are available only to U.S. citizens and permanent resident aliens and will support travel expenses to ICME-12 for preK–12 mathematics teachers, mathematicians, graduate students and mathematics teacher educators from the United States. PreK, elementary, middle, and high school teachers and graduate students are strongly encouraged to apply.

The ICME12 **travel grant application deadline is September 30, 2011**. Notifications will be made by January 16, 2012. The travel grant application and selection criteria are available online: <http://www.nctm.org/icme>.

*Questions regarding ICME-12 travel grants can be directed to Gail Burrill, [burill@msu.edu](mailto:burill@msu.edu).*

## AMTE AFFILIATE NEWS

### Celebrating the 20<sup>th</sup> Affiliate during the 20<sup>th</sup> Anniversary Year

The AMTE Board of Directors is pleased to welcome the recently approved 20<sup>th</sup> Affiliate of AMTE, the **Association of Maryland Mathematics Teacher Educators**. Led by newly elected President, Christy Graybeal (*Hood College, Frederick, Maryland*), forty-five mathematics teacher educators crafted and approved the constitution and by-laws and elected a new slate of officers for AMMTE. This 20<sup>th</sup> AMTE Affiliate will receive their official charter during the AMTE Business meeting as part of the 2012 AMTE Annual Conference in Fort Worth, Texas.

Submitted by Sandi Cooper, AMTE Affiliate Director,  
Baylor University, [Sandra\\_Cooper@baylor.edu](mailto:Sandra_Cooper@baylor.edu)

### UPDATES FROM

#### Oregon AMTE Affiliate

The Oregon AMTE affiliate, Teachers of Teachers of Mathematics (TOTOM) is preparing for its upcoming annual conference September 9-10 in Portland, Oregon. The theme for this year's conference is *Preparing Teachers for the Common Core Standards in Mathematics*. Oregon also had a team attend the AMTE EMS State Certification conference. We look forward to making progress with establishing state certification and developing professional learning opportunities for elementary teachers in the coming months.

#### Association of Maryland Mathematics Teacher Educators (AMMTE)

The Maryland affiliate will meet on Friday, October 21 at the 2011 MCTM Annual Conference in Fulton, Maryland. We are also pleased to announce that the AMMTE has become the 20<sup>th</sup> AMTE Affiliate and will receive its official charter at the AMTE Business Meeting at the 2012 Annual Conference in February. For more information about the AMMTE, please see <https://www.marylandmath.org/AMMTE>.

#### Mississippi Association of Mathematics Teacher Educators (MAMTE)

The Mississippi affiliate hosted its fifth annual symposium in May on the campus of Mississippi State University. The focus of this year's symposium was on the Common Core State Standards for Mathematics (CCSSM). Members formed working groups, focusing on the incorporation of CCSSM into teacher preparation programs, graduate programs, and professional development. In addition to work with CCSSM, several members provided research presentations, and previous initiatives were revisited. The symposium was funded by the E.B. Martin Fund for Excellence which provided support for travel, food, and other expenses.

### Answers to *Do You Know* questions from page 13!

AMTE became an NCTM affiliate in 1998!

IMTE-Illinois Mathematics Teacher Educators became the first AMTE Affiliate in 2002.



### Applications being accepted for 2012 STaR Program

The STaR Program provides early career faculty in mathematics education support and opportunities to network with other new mathematics teacher educators. The program consists of a summer institute (July 15-20, 2012), academic year networking via electronic means, and a regroup session in conjunction with the annual meeting of the AMTE.

The third cohort of STaR Fellows is being recruited. Eligibility is limited to faculty with a doctorate in mathematics education in their first or second year of an academic appointment as a mathematics educator at a U.S. institution of higher education. The faculty appointment may be in a department of mathematics or a school/college/department of education.

To apply, see: <http://matheddb.missouri.edu/star/index12.htm>

Check the AMTE website for the latest on

- 2012 Conference Updates and Deadlines
  - MTE Call for manuscripts
- [www.amte.net](http://www.amte.net)

## Important Dates to Remember

### 2011

|                |                                                      |
|----------------|------------------------------------------------------|
| October 19-21  | NCTM Regional Conference, Atlantic City, NJ          |
| October 20-23  | PME-NA Conference, Reno, NV                          |
| October 26-28  | NCTM Regional Conference, St. Louis, MO              |
| November 1     | Deadline for NCTM 2012 Regional Conference Proposals |
| November 2-4   | NCTM Regional Conference, Albuquerque, NM            |
| November 10-12 | SSMA Annual Convention, Colorado Springs, CO         |
| November 10-13 | AMATYC Annual Conference, Austin, TX                 |

### 2012

|                      |                                                                 |
|----------------------|-----------------------------------------------------------------|
| January 4-7          | AMS-MAA Joint Mathematics Meetings, Boston, MA                  |
| <b>February 9-11</b> | <b>AMTE Annual Conference, Fort Worth, TX</b>                   |
| February 23-25       | RCML Conference, Charlotte, NC<br>RUME Conference, Portland, OR |
| April 13-17          | AERA Annual Meeting, Vancouver, British Columbia                |
| April 25-28          | NCTM Annual Meeting, Philadelphia, PA                           |
| July 8-15            | ICME-12, Seoul, Korea                                           |
| July 18-22           | PME Conference, Taipei, Taiwan                                  |
| October 10-12        | NCTM Regional Conference, Dallas, TX                            |
| October 24-26        | NCTM Regional Conference, Hartford, CT                          |
| November 1-4         | PME-NA Conference, Kalamazoo, MI                                |
| November 8-11        | AMATYC Annual Conference, Jacksonville, FL                      |
| November 8-10        | SSMA Annual Convention, Birmingham, AL                          |
| November 28-30       | NCTM Regional Conference, Chicago, IL                           |

### 2013

|                      |                                            |
|----------------------|--------------------------------------------|
| <b>January 24-26</b> | <b>AMTE Annual Conference, Orlando, FL</b> |
|----------------------|--------------------------------------------|

Online at  
[www.amte.net](http://www.amte.net)

Membership/  
Renewal Forms

2012  
Conference  
Registration

Election  
Information

Position Papers

Position Listings

Resources

Other  
Opportunities

Comments, questions, and submissions for AMTE *Connections* should be directed to:  
Trena L. Wilkerson, AMTE *Connections* Editor  
Baylor University  
Department of Curriculum & Instruction  
One Bear Place # 97314  
Waco, TX 76798  
[Trena.Wilkerson@baylor.edu](mailto:Trena.Wilkerson@baylor.edu)



**AMTE Connections**  
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