

25 years! 20th Conference!





Think about

- 1997: 1st Conference – 30 sessions
- 2016: 20th Conference - 190 Sessions
- *Received seemingly 1,000 times:* Join over 650 colleagues (actually 658 - reported by Susan Gay) across the country who have already registered for AMTE's **largest conference ever!**

***Mathematics Teacher Education:
Normal Schools to Now.
What's the fit and future for AMTE (and you)?***

**Francis (Skip) Fennell
McDaniel College**

Judith Jacobs Lecture

AMTE 20th Annual Conference • Irvine, CA

January 29, 2016 • 2:45-4:00 p.m.

www.mathspecialists.org

ELEMENTARY MATHEMATICS SPECIALISTS & TEACHER LEADERS (EMS&TL) PROJECT

HOME

EMS&TL RESOURCES

ABOUT

MY ACCOUNT



ELEMENTARY MATHEMATICS SPECIALISTS & TEACHER LEADERS PROJECT

Supporting the ongoing work of Elementary Mathematics Specialists -- professionals who know and understand mathematics, and who effectively lead and mentor their colleagues.

A PARTNERSHIP OF:



ems&tl
Elementary Mathematics Specialists
& Teacher Leaders Project



Here's the plan

- Some history – some things seem to stay the same...
- You – what do you do and what might you be doing?
- AMTE – sharpening our focus and future - some considerations
 - Who's not here – and what we must do to support them!

Central Pennsylvania Normal School



Our Roots – Normal Schools...

- Bowling Green State Normal School: BGSU
- California State Normal School: UCLA
- Colored Normal School at Huntsville: Alabama A & M
- Howard Normal and Theological School for the Education of Teachers and Preachers: Howard University
- **Lexington Normal School: (moved and became Framingham State University)**
- Illinois State Normal: Illinois State University
- Milwaukee State Normal: UW – Milwaukee
- Ohio State Normal College at Kent: Kent State University
- San Diego Normal School: San Diego State University
- **So many more...**

- 1891 – David E. Smith became chair in mathematics at Michigan State Normal School in Ypsilanti (now Eastern Michigan University). He developed a program with four general components:
 1. strong mathematical preparation well beyond what a teacher may expect to teach in a school;
 2. specialized training in mathematics pedagogy;
 3. study of educational history, philosophy and psychology;
 4. supervised practice teaching.
- The four-component structure was consonant with the structure of programs developed some years earlier to prepare teachers of other high school disciplines.
- And, NOW – consider major components of your programs

Beginning of the Math Wars?

- **The Committee of Ten** - Report on Secondary School Studies in 1893.
- Recommended changes to the high school curriculum in order to better prepare students for college work.
- At the time, teachers were educated either in colleges and universities or **normal schools**.
- With the growing demand for high school teachers during the 1890s, conflicts developed over which type of institution could best prepare teachers.

- The U.S. has never had a single teacher education program or set of certification requirements prescribed by the federal government for all states.
- Many states require that teacher education programs undergo an accreditation process by a nationally recognized independent body (NCATE/TEAC – now CAEP).
- NCATE/TEAC/CAEP coordinates peer review of teacher education programs through SPAs (e.g. NCTM, CEC, CAEP)
- U.S. teacher education programs at the beginning of the twenty-first century, while not identical, are more alike than different.

Accreditation

- NCATE founded in 1954. Replaced the American Association of Colleges for Teacher Education (AACTE) as the agency responsible for accreditation in teacher education.
- TEAC founded in 1997 as a response/reaction to NCATE. Its process is/was generally less standardized.
- July 1, 2013 – NCATE and TEAC consolidate as CAEP.

A continuing challenge: Recruiting and Retaining Teachers of Mathematics - Secondary

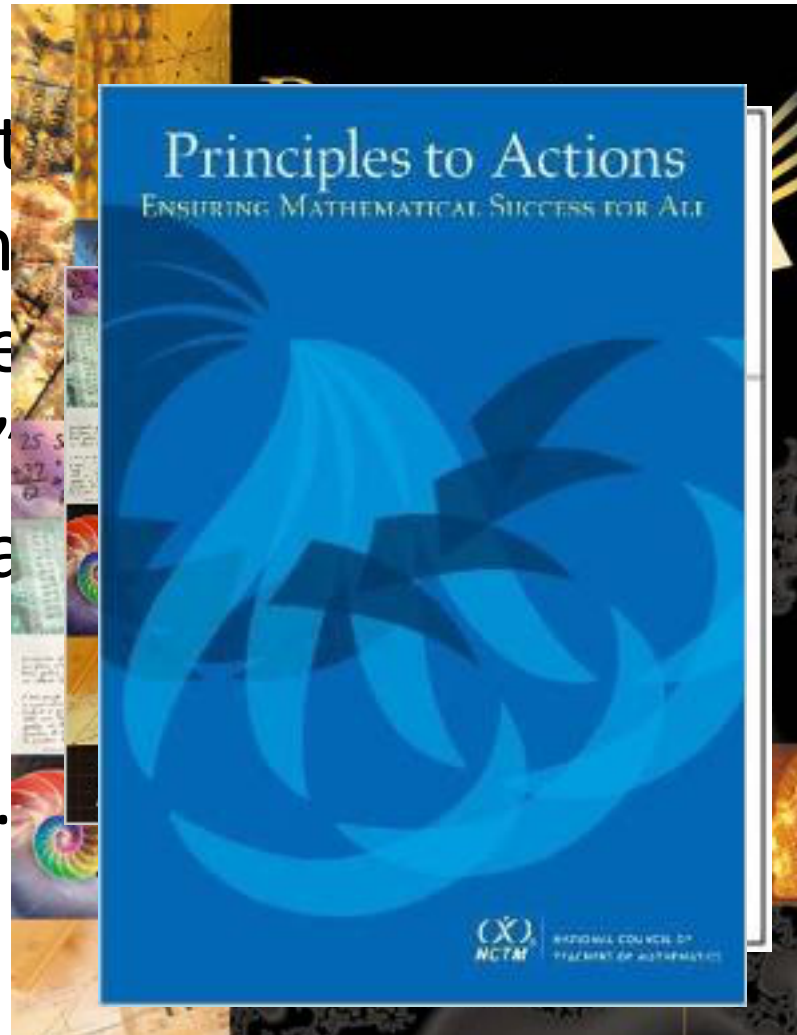
- Local funding directly impacts teacher working conditions and salaries. With notable exceptions starting math teachers can expect to earn 50–75% of the starting salaries for the other professions that attract mathematics majors (Cuoco, 2003).
- 5% of bachelor's degrees and 9% of all completers were in mathematics and sciences (AACTE, 2009-2010), while > 31% of all degrees in education were in elementary education a major surplus area.

MTE and Standards and More...

Until recent
U.S. system
control, even
“standards”
tested at ea

usual in the
it of local
own set of
that will be

And, then...



Cuoco, 2003

You and AMTE

Engaging you – #1

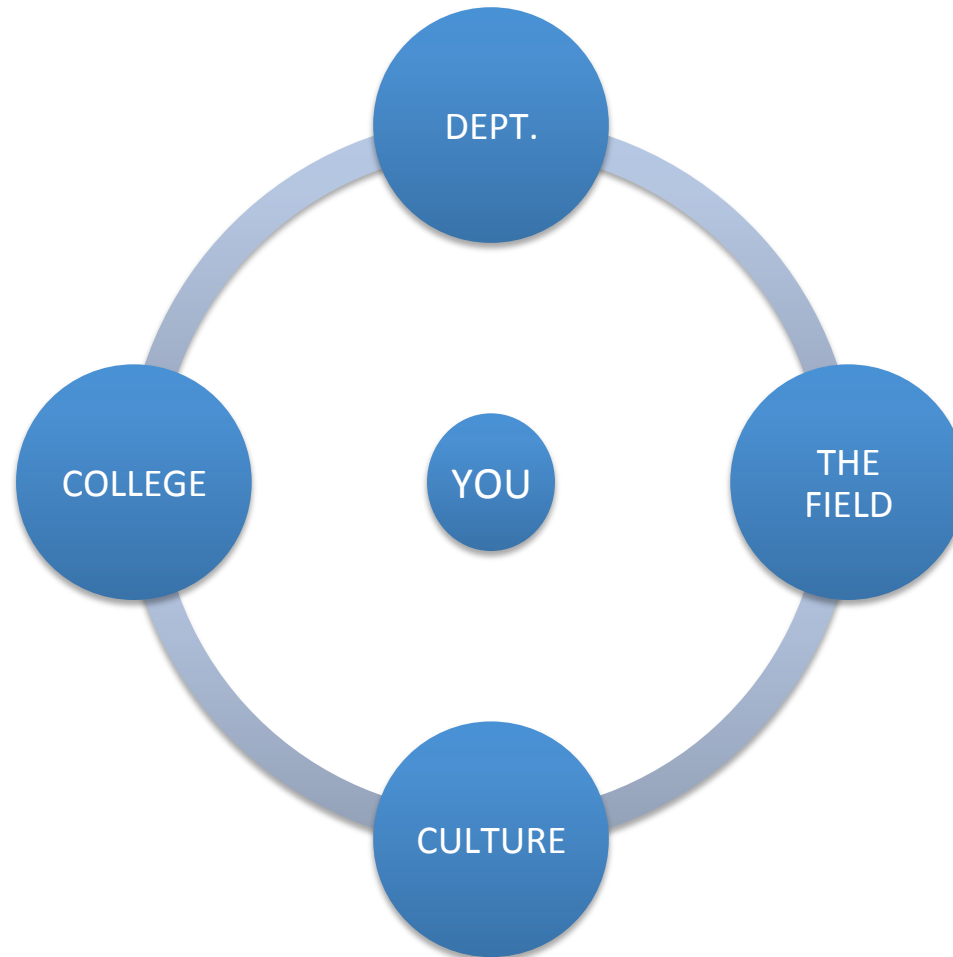
At one of those unsettling “family” events; with high school friends; in an elevator...When someone asks, “What do you do?” What’s your response?

<http://tinyurl.com/amteskip1> or



And, this is part of the problem...

The fit and fitting in...



You and “the Academy”

Settling in...

- Issues related to turf and culture
- What’s valued?
- Who do I hang out with?
- Expectations? (teaching, service, professional)
- **How can I impact what we do – after all mathematics teacher education is much more than my methods course!**

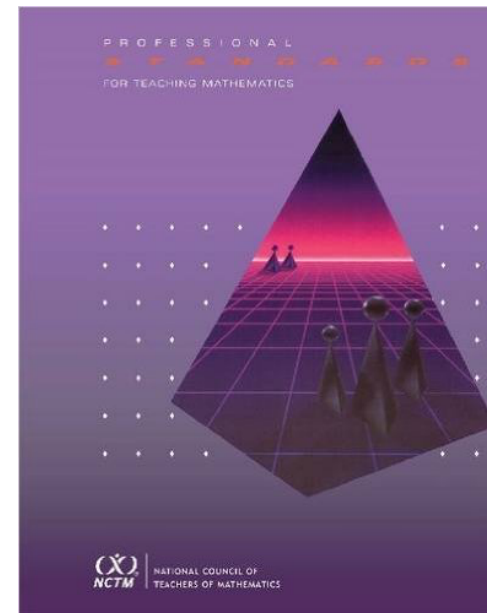
PLC's and Communities of Practice

- What's a PLC?
 - Professional Learning Community
- Is **AMTE** your PLC or Community of Practice (CoP)
 - It should be, consider the following...some of these accomplishments impact your work today.



Beginnings

- NCTM Baltimore Regional Conference – Omni Hotel (November 2, 1991).
- Mark Spikell – President
- Francis (Skip) Fennell – Vice President
- Don Balka – Secretary
- Judith Jacobs – Treasurer
- **At dinner the AMTE name was adopted...**





AMTE Mission and Goals

If you're bored, find them. Do they still work?

For you? For AMTE? For those who prepare mathematics teachers at every level and are not, nor never have been, at an AMTE event?



Beginnings

- January 1998 - the AMTE Board of Directors unanimously approved Judith Jacobs as AMTE's first executive director.



CAL POLY POMONA



Beginnings

- In Spring 1998, AMTE received an invitation to apply for membership in the Conference Board for the Mathematical Sciences (CBMS) (approved for membership – 1999).
- What is CBMS? Why should AMTE be involved?





Beginnings

- Spring, 1998 - The AMTE membership voted to support affiliation with the National Council of Teachers of Mathematics.





Beginnings

- 2000 – The domain name, www.amte.net was purchased.

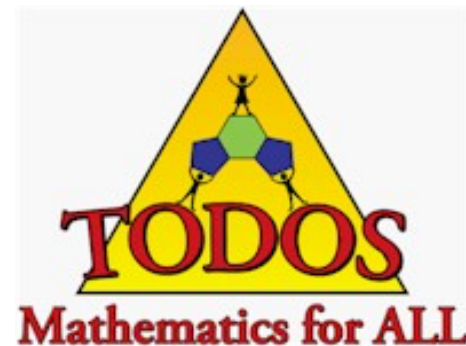
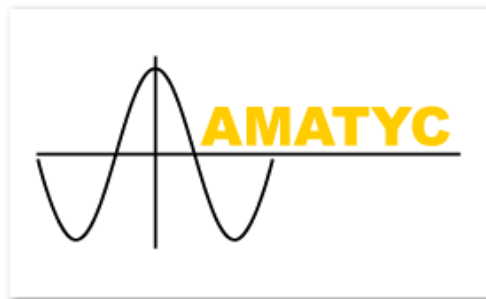


Collaboration

- Since 1993 AMTE-arranged sessions at NCSM and NCTM Annual Meetings...



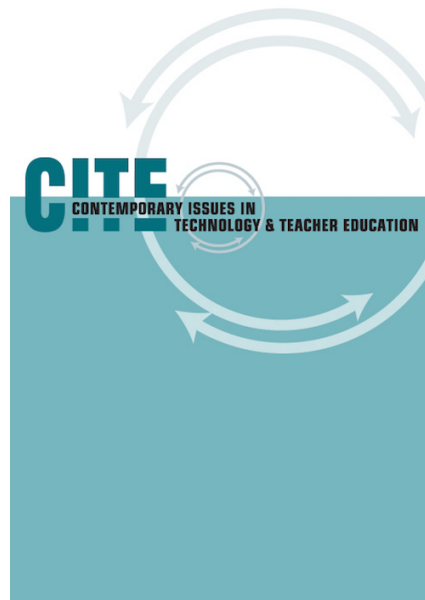
- And more recently:





Collaboration

- 2000-2001 - AMTE began a partnership with the then new on-line journal Contemporary Issues in Technology and Teacher Education (CITE). Visit <http://www.citejournal.org/vol15/iss4/>





More Recently

2010-2011

- Peg Smith is appointed as the first editor of MTE, a joint publication of AMTE and NCTM.
- Sandra Crespo – current editor

Mathematics
Teacher
Educator

a joint publication of
the National Council of Teachers of Mathematics
and the Association of Mathematics Teacher Educators



NATIONAL COUNCIL OF
TEACHERS OF MATHEMATICS



More Recently

2010-2011

- The Susan Gay Conference Scholarship was created. The award supports a graduate student or early-career MTE to attend the AMTE Conference.
- The AMTE Excellence in Service Award was renamed to the Nadine Bezuk Excellence in Leadership and Service Award.



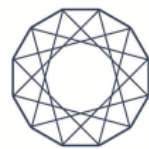
Position Statements

- Principles to Guide Doctoral Programs in Mathematics Education (joint with NCTM).
- Preparing Teachers To Use Technology To Enhance The Learning Of Mathematics ([revised, 2015](#)).
- Mathematics Education Organizations Unite to Support Implementation of Common Core State Standards (joint with NCTM, NCSM, ASSM).
- The Role of Elementary Mathematics Specialists in the Teaching and Learning of Mathematics (joint, with NCTM, NCSM, ASSM).
- Improving Student Achievement in Mathematics Through Formative Assessment in Instruction (joint, with NCSM)
- **Equity in Mathematics Teacher Education.**



EMS Initiative

- *Standards for Elementary Mathematics Specialists: A Reference for Teacher Credentialing and Program Development*
- Two national conferences for states interested in adding EMS certification.
- Elementary Mathematics Specialists Research Conference
- Thank you:



Brookhill
Institute of Mathematics

AMTE's CoP or PLC



Thanks to all fellows and staff,
particularly the vision of Bob Reys

Back to you/us

Your Impact on the field...

With some changes, additions...

- **Content**
 - Number of courses
 - MKT emphasis (one hopes)
- **Foundations – educational, psychological**
 - Conceptual understandings
 - Learning Trajectories
- **Pedagogy**
 - Planning & Assessment
 - Classroom Management
 - Equity
 - Special Education
 - Technology
- **Field Experiences**
 - Earlier
 - More



How can all of us impact these “slices” of a teacher’s preparation? Potential of AMTE’s Standards work?

Smith, Moore, Young, Myers – University of Chicago, and others...

Engaging you – #2

<http://tinyurl.com/amteskip2>

When you have finished teaching, grading and planning (or all you can handle), how do you spend most of your time in those special moments/hours with regard to “professional contributions?” (select only one of A-E)

- A. Research
- B. Planning for & delivery of Professional Development
- C. Professional publications
- D. Conference presentations
- E. Other

What if this asked “how would you prefer” to spend most of your time...?

PD and you...

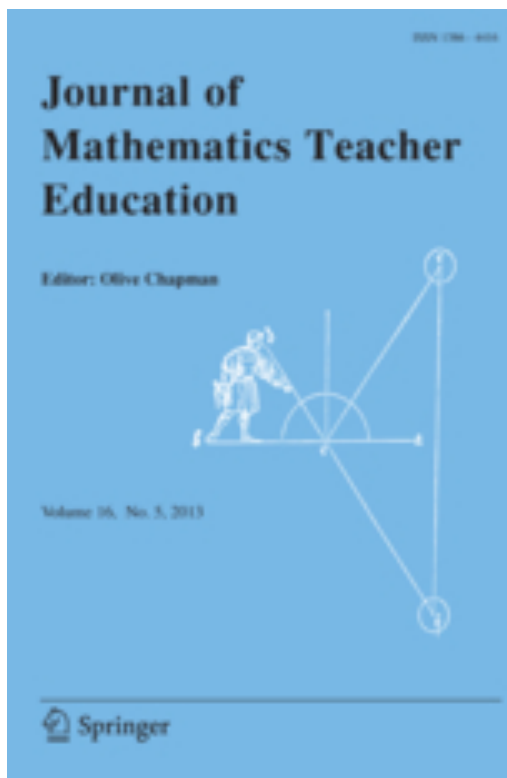
- Baptism under fire
- Validation
- Learning
- Needs – content, pedagogical
- Realistic expectations:
 - Once and done – not!
 - Planning
 - Readiness of a staff; Acceptance of a staff; Follow through
 - And more...

So much to learn here...

Publications

**SOME (not exhaustive)
considerations**

JMTE



- Acceptance Rate*
- 15-20%; email Gwen Lloyd, Associate Editor

JRME



Acceptance Rate*

Year	Acceptance
2014	27%
2015	21%#

* for fully reviewed manuscripts;

as of 11.11.15

JUME

JOURNAL OF URBAN MATHEMATICS EDUCATION

JUME • JUME • JUME • JUME • JUME • JUME • JUME • JUME

- Online
- Eight year average of 31% acceptance rate for double-blind, peer-reviewed research manuscripts.
- Located at Georgia State University, home of the AMTE President.

NCSM Journal of Mathematics Education Leadership



- Acceptance Rate
- ~35%

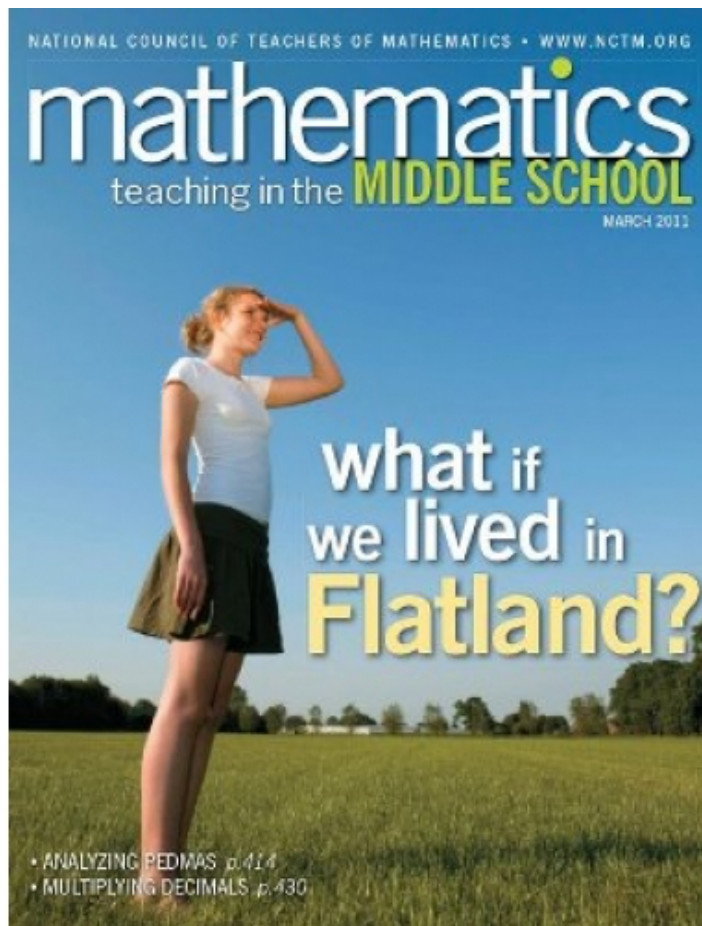
- (email Angela Barlow;
1/11/16)
- John Staley, in the
house!

TCM



- Acceptance Rate
- 22% (as of 11.6.15)
- Circulation (print and electronic)
- TCM 30,595
- Jane M. Wilburne, Penn State Harrisburg, Pennsylvania, Chair

MTMS



- Acceptance Rate
- 39% (as of 11.6.15)
- Circulation (Print and Electronic)
- MTMS 26,278

MT



- Acceptance Rate
- 31% (as of 11.6.15)
- Circulation (Print and Electronic)
- MT 27,529

MTE

Mathematics Teacher Educator

*a joint publication of
the National Council of Teachers of Mathematics
and the Association of Mathematics Teacher Educators*



NATIONAL COUNCIL OF
TEACHERS OF MATHEMATICS

- Acceptance Rate
 - 2014: 19%
 - 2015: 13% (from Sandra Crespo; 1.20.16)
- Note: faster track to publication (< 6 months)!
- Online Journal; would LOVE to publish 6 articles/issue
- Circulation: 1,730
- Oh, and this is OUR journal!!!

And, of course Conferences...



Your lens of opportunity, influence & focus

- Content
- Pedagogy
- Field Experiences
- Research
- Pre-Service
- Professional Development
- Equity/Access
- Policy
- *Mentoring - retention*



Which? Are there others?

Enough about you...

Potential for AMTE influence...

Equity, Access...

Important enough to read...

- 2014-15: First time in history that racial and ethnic minority students outnumbered their white counterparts.
- By 2022: non-white students will make up 54.7 percent of the public school student population, largely due to the national increases in U.S.-born Hispanic and Asian populations.
- Despite the fact that more students of color will be filling classrooms at increasing increments every school year, it's a well reported fact that **almost 80 percent** of their teachers are white—and it doesn't appear that that will change any time soon.

Adrienne Green, The Atlantic, September, 2015



- “We cannot let demographics continue to predict our students’ performance.”
- “Students of color now comprise 57.9% of our enrollment, with 47.4% of our students eligible for free and reduced-price meals. Additionally, students speak almost 90 languages from more than 100 countries.”
- “Technology is a key leverage tool for facilitating learner-centered environments across the district.”

Moving Beyond Rhetoric

- “NCTM’s 26-year lament...” (Danny Martin, 2015)
- Are we really preparing teacher candidates to teach and mentor diverse learners? Are EPP’s truly addressing equity and access?
- Equitable practices in mathematics teacher education, including increasing the diversity of mathematics teachers and teacher educators (AMTE goal).
- Consider professional collaboration: engage (directly) with both BBA and TODOS **AND** CEC.
- This is so much more than an opportunity, it’s a responsibility:

Field Experiences

Connecting our Practice to the Field

- What? “that” teacher has an intern?
- Please tell me how that school became a PDS!!
- Who is supervising that student teacher?
- “The practicum students from xU: none of them even knew the Practices.”
- “When I interviewed candidates, if they didn’t know about the CCSS-M, there was no way I was calling them back for a 2nd interview.”
- Personal reflection – I would hear, from a now retired colleague about abysmal teacher observations and my first question was: Where did this person complete their teacher education program?

Field/Clinical Experiences

- We need to do better here...
- All teacher preparation programs and **districts** have to start thinking about teacher preparation as a responsibility they share, working together.
- Clinical preparation is one of the three “aspects of teacher preparation that are likely to have the highest potential for effects on outcomes for students,” along with content knowledge and quality of candidate teachers. (NRC, 2010)
- This is how our candidates engage in the **field!**
- **How are we (all of us, including AMTE) involved here?**

Technology...

Technology and us...

- TPAC – Technological Pedagogical Content Knowledge
- AMTE position statement 11/15
- Paperless classes
- Online instruction
- Math Twitter Blogosphere – and you/us
- How can AMTE help? This is not a “once and done” initiative, it’s a continuing effort.

Start with the AMTE position statement!



- On the topic of teacher preparation
 - Theoretical, not practical
 - Message for beginning teachers: “You’re going to suck, it’s hard.”
- A social media faculty lounge
- How many teachers are receiving PD – minute-by-minute.

NCTM Regional Conference, Nashville, TN – Fall 2015

F. (Skip) Fennell @SkipFennell

If you could have a "do over" in your preparation to be a math teacher at any level (elem, middle, high), what ONE thing would you change?

January 14, 2016



Selected Early Responses

- Focus more on learners and learning;
- I am a 6-12 trained teacher, wish I would have learned more about how students learn math (vs. how to teach);
- Also important to understand learning progressions; complexity of foundational skills like counting;
- More field experiences earlier in my preparation;



- I would have liked to have spent more time on assessment to figure out what and how students struggle so I can best help;
- I would have learned for understanding as a student, instead of memorizing;
- I would want to have learned more about student engagement.

Who prepares teachers?

2-Year Colleges do this...

- Community colleges offer full certification programs: critical shortages in some states.
- Some 4-year colleges and universities offer their teacher preparation programs on community college campuses.
- **Reality:** More than 50% of the nation's current classroom teachers attended a CC for at least part of their education. Community colleges often provide most of the general content area courses future teachers receive. It is estimated that 4 out of 10 teachers complete some of their math and science courses at community colleges.
- Address: A 2-year college presence within AMTE? (Jane Tanner)

On-line Programs do this...

- *The Top 25 Online Teacher Education Programs include (all CAEP approved):*
- Umass – Online
- Western Governor’s University
- Liberty University
- University of Nebraska at Kearney
- University of Cincinnati
- Graceland University
- California Coast University – field trip! (not NCATE/CAEP accredited)

<http://www.thebestschools.org/blog/2012/05/31/top-25-online-teacher-education-programs/>

EIC's - Survey of Enrollment in Mathematics Teacher Preparation Programs

Title II data...Oh my – Here we go

Summing up...why now?

- Initial Certification
- Title II data - 2014
- 2,171 Providers filed the Title II report and in the same period, CAEP members – 920 (42%)
- <https://title2.ed.gov/Public/Home.aspx>

What can and should (AMTE) do for these mathematics educators?

ECE

EPP	Type	Number (2014)
A+ Texas Teachers	Alternative#	1004
Texas State University	Traditional	610
Indiana U. of Pennsylvania	Traditional	397
Touro College – Manhattan	Traditional	309
Texas A & M - Commerce	Traditional	304
Mercy College	Traditional	289

CAEP Annual Report to AIMS 2014, Self-reported – not all EPP's report their data

8 of the top 12 – Texas

Think about – staffing, program evaluation, etc.

Elementary

EPP	Type	Number (2014)
University of Phoenix	Traditional	1,226
A+ Texas Teachers	Alternative	1,059
Wilmington University (DE)	Traditional	901
Grand Canyon University	Traditional	858
Texas State University	Traditional	609
University of Central Florida	Traditional	469

CAEP Annual Report to AIMS 2014, Self-reported – not all EPP’s report their data

Penn State – 349; 11th - ; UNI – 343; 12th

Think about – staffing, program evaluation, etc.

Special Education

EPP	Type	Number (2014)
Grand Canyon University	Traditional	735
A+ Texas Teachers	Alternative	707
Mercy College	Traditional	661
Western Governor's U.	Traditional	273
Wilmington University (DE)	Traditional	271
University of Phoenix	Traditional	261

CAEP Annual Report to AIMS 2014, Self-reported – not all EPP's report their data

Illinois State University – 203; 11th; Towson U. – 175; 15th

Think about – staffing, program evaluation, etc.

Mathematics

EPP	Type	Number (2014)
A+ Texas Teachers	Alternative	254
NJ Dept of Ed – Alt route	Alternative	188
Texas A & M	Traditional	140
Grand Canyon University	Traditional	124
Indiana University of PA	Traditional	115
Houston ISD	Alternative	100

CAEP Annual Report to AIMS 2014, Self-reported – not all EPP's report their data

4 of the top 10 – alternative; Michigan State University – 95; 8th ;
Bowling Green State University – 80; 13th

How does AMTE connect with “other” providers?

Should we care?

YES!

Policy

- Locally and Nationally
 - Continuing potential and power of AMTE affiliates (now 25 – and hopefully growing)
 - EIC and their efforts!
- Always staying in a position to move forward...rather than react.
- Lingering issues:
 - Math Wars – crazies among you
 - Local issues
- Right now: ESSA; changes in IES, NSF opportunities, etc.



Policy/Collaboration



Council for the
Accreditation of
Educator Preparation

- Get Ready! AMTE/NCTM members are very likely the experts that will be asked to develop the revision of the NCTM/CAEP standards.
- AMTE should begin now to consider how collectively we will review and give feedback on the forthcoming draft standards.
- Connect this work with the forthcoming AMTE Standards



Moving Forward

- Broadening but steadfastly hanging on to that CoP feel
- Reading, reacting, engaging research
- Equity, access
 - BBA, TODOS, CEC
- Field experiences
 - NCSM
- Technology – monitor, sharing
- Reaching others who prepare teachers
- Impacting Standards – plug/push
- **Policy – staying on top, moving forward**
 - NSF (shameless plug) and more...



Critical AMTE Decisions

1. Not having the AMTE Conference on Super Bowl weekend.
2. Ensuring there was an opportunity for a glass of beer or wine after this session.

Thank you...

- Beth Kobett, Jon Wray, Barb Swartz
- Karen Karp
- Denise Spangler
- Jenny Bay-Williams
- NCTM and NCSM friends and colleagues
- Many, many others

- ALL of you!
- And, particularly Judith Jacobs

Thank you!

The logo for the Elementary Mathematics Specialists & Teacher Leaders Project. It features the lowercase letters 'ems&tl' in a serif font. The 'e' has a small square icon with a building inside it. The ampersand is a vibrant green color, while the other letters are black.

*Elementary Mathematics Specialists
& Teacher Leaders Project*

Slides/Handouts:

<http://www.ffennell.com>