MTE-Partnership: Past Progress and Future Opportunities

Association of State Supervisors of Mathematics
April 11, 2016
Goals for Discussion

• To provide a brief update on MTE-Partnership and its future directions.
• To discuss ways in which ASSM and its members might become more involved with MTE-Partnership.
The Challenge in Mathematics Education: A Downward Cycle

Many K-12 students do not learn challenging mathematics

Talented mathematics teachers leave the field

Teachers are left to their own devices in terms of continuing their mathematical education

Prospective teachers are apprenticed in classrooms of teachers who themselves know little mathematics

Those students enter college unprepared for math; the best-prepared don’t go into teaching

Math courses taken by secondary teachers do not prepare them to develop mathematical knowledge for teaching

(Adapted from Wilson, 2011)
Mathematics Teacher Education Partnership (MTE-Partnership)

Our goal is to **transform** the preparation of secondary mathematics teachers to ensure an adequate supply of new teachers who can promote mathematical excellence in their future students, leading to **college and career readiness** as described in the Common Core State Standards for Mathematics and other standards.

“To set the bar for the nation in secondary mathematics teacher preparation”
MTE-Partnership Teams

- Organized by the Association of Public and Land-grant Universities (APLU), it includes 39 partnership teams with an APLU university as the lead, at least one K-12 partner, and additional partners.

- Must demonstrate continuing involvement of mathematics educators, mathematicians, and K-12 educators.
### MTE-Partnership, By the Numbers

<table>
<thead>
<tr>
<th>Category</th>
<th>Data</th>
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</thead>
<tbody>
<tr>
<td>Number of universities and colleges involved</td>
<td>99 across 31 states</td>
</tr>
<tr>
<td>Number of school districts involved</td>
<td>Over 110</td>
</tr>
<tr>
<td>Total number of personnel involved</td>
<td>Around 350</td>
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<tr>
<td>Annual production of new math teachers</td>
<td>2,245</td>
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<tr>
<td></td>
<td>(15% of national production)</td>
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<tr>
<td>Annual production target for 2020</td>
<td>3,143</td>
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<tr>
<td></td>
<td>(20% of national production)</td>
</tr>
<tr>
<td>Number of students impacted annually by each year’s graduates</td>
<td>250,000</td>
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<tr>
<td>Number of students impacted annually by graduates from 2014-2020</td>
<td>2,000,000</td>
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Networked Improvement Community (NIC) Design

• Unique design developed by the Carnegie Foundation for the Advancement of Teaching

• We spent three years building out the network:
Four Major Features of a NIC

• Focused on a common aim
  – producing mathematics teacher candidates who meet a “gold standard” of preparedness
  – 40% increase in candidate production by 2020

• Guided by deep problem analysis

• Disciplined inquiry based on continuous improvement

• Networked to accelerate progress
  – “Divide and conquer”
  – Cross-contextual
  – Built-in potential for scaling implementation
Creating a “gold standard”
Programs document that their graduates are capable of providing the ambitious instruction and deep learning compelled by CCSSM, based on benchmarks to be developed by the MTE-Partnership.

More and better new teachers
To prepare <target number> of graduating secondary mathematics teachers with an emphasis on increasing diversity.

Aim

Primary Drivers

Creating a Vision
Creating a common vision of and commitment to SMTP among stakeholders

Clinical Preparation
Developing and supporting mentor teachers who can provide field experiences that support candidates' development of instructional practices.

Content Knowledge
Developing candidates' knowledge of mathematics needed to support student learning of content and practices

Recruitment and Retention
Attract and maintain an adequate supply of candidates

Research Action Clusters (RACs)

Clinical Experiences. Innovative models supporting candidates' development of effective mathematical teaching practices.

Active Learning in Mathematics. Use of active learning strategies in introductory university mathematics courses.

MODULE(S)2 (Mathematics of Doing, Understanding, Learning and Educating for Secondary Schools). Developing modules to build particular mathematical knowledge needed to teach.

MATH (Marketing to Attract Teacher Hopefuls). Models for developing and launching marketing campaigns that rebrand teaching to appeal to more students.

STRIDES (Secondary Teacher Retention & Induction in Diverse Educational Settings). To improve teacher retention rates in early career secondary math teachers.
Overview of MTE-Partnership’s Research Action Clusters (RACs)

• Developing Effective Clinical Experiences -- Mentor professional development; alternative models

• ALM: Actively Learning Mathematics -- Improving instruction in introductory university mathematics classes

• MODULES\(^2\): Mathematics of Doing, Understanding, Learning and Educating for Secondary Schools – Developing materials to address specific mathematical needs of math teachers

• MATH: Marketing for Attracting Teacher Hopefuls -- Moving beyond advertising to attract candidates

• STRIDES: Secondary Teacher Retention & Induction in Diverse Educational Setting – Retaining new math teachers in the profession

www.MTE-Partnership.org
Addressing the Downward Cycle:
MTE-Partnership’s Research Action Clusters

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The Next Phase: From Improvement to Transformation

• The challenge:
  – Addressing specific problems may not develop scale to national transformation of secondary mathematics teacher preparation.

• Issues for particular secondary mathematics programs:
  – Institutional resources needed to make more sweeping improvements may be lacking.
  – Policy constraints may limit their ability to make improvements.

• The issue for the Partnership as a whole:
  – Developing supports for programs to create “strategic paths to program improvement.”
  – Spreading improvements to additional universities and colleges.
The General Plan

• A new research effort will focus on building knowledge about how to support program transformation.
  – Teams will create individual “strategic paths for program improvement” to incorporate findings from multiple RACs with the aim of comprehensive program transformation.

• The “hub” will work with teams to expand within their states and to build new teams in additional states.
Questions for ASSM

• In considering transformation of programs:
  – What involvement might ASSM have in supporting particular areas of change?
  – What are broader policy issues with which ASSM might help?
  – How might ASSM promote closer connections of university programs with their K-12 partners?

• In considering the spread of improvement efforts:
  – How might ASSM be able to support/encourage a team to expand within a state, particularly focusing on smaller programs that may lack capacity?
  – How might ASSM support/encourage formation of new teams in additional states?

• Are their particular teams-contexts that might be ripe to be included in this effort?
Next Steps

• Formation of a “transformation working group” to begin to lay out a strategy to support program transformation.
  – Will include members of the current planning team, additional Partnership members with particular interest, and other strategically chosen representatives.
  – *Proposed* outcome will be establishment of a new Research Action Cluster.
For More Information

• Website: www.MTE-Partnership.org
• Howard Gobstein: HGobstein@aplu.org
• W. Gary Martin: wgarymartin@auburn.edu