



TPSEMath

Transforming Post-Secondary Education in Mathematics

Chairs +1

Washington DC

October 7, 2016

Origins and Information Gathering

- Problem at most fundamental level is that undergraduate math doesn't meet the needs of our students.
- Origins of TPSE Math
- Series of national and regional meetings
- Many departments are already trying approaches to curricula, teaching, and learning, but overall effort is not coordinated.

Strategic Planning: Priorities

- **Multiple Pathways** – lower division
(to increase completion rates and better align coursework with students' programs of study)
- **Enhanced Alternative Pathways** – upper division
(responding to rising demand from other disciplines for students with stronger and more relevant math background)
- New Teaching and Learning Methods and Technologies: ITHAKA
- Broader Preparation of Graduate Students

Actions Taken or Underway

- Multiple pathways and improved completion rates: Dana Center, APLU/AASCU
- Creating an administrative center at Maryland
- Building an action network beyond the mathematics community
 - Administrators
 - Funders
 - State governments and officials
 - NSF and other federal agencies
 - Employers and other stakeholders

Mathematics Advisory Group (MAG)

- MAG members (primarily math department chairs) will help lead the effort to carry out, scale up, and evaluate the effectiveness of major reforms.
- Chairs are at nexus between students, faculty, and administration; importance of “middle management.”

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- Add the perspectives of directors of undergraduate studies and institutional administration:
 - Growing demand for quantitative/math skills in all disciplines
 - Economic/staffing pressures
 - Develop faculty incentives for reform
 - Lessons from earlier postsecondary reform in other STEM disciplines
- Continue to dig more deeply into first two major TPSE topics
 - Multiple Pathways for lower division students
 - Enhanced Alternative Pathways for upper division students
- What we hope to hear from participants: Your own experiences and your ideas for reform
- Develop an action agenda

Next Steps

- Continue work on EAP
 - Gather information about demand; data
 - Discuss further who will be taught, and what
- Hear from other STEM areas
- Increase diversity of institutions, ethnicity, gender in TPSE discussions and plans
- Learn to design, adapt, scale up, and evaluate major reforms

Action

- Action on three levels
 - Existing partnerships
 - Help coordinate work already underway
 - New research
- Overarching questions
 - Who will take these actions?
 - And by what process?

Mission Statement

TPSE Math will facilitate an inclusive movement to strengthen post-secondary education in mathematics by working closely with – and mobilizing when necessary – faculty leaders, university administrations, membership associations, and relevant disciplinary societies in the pursuit of mathematically rich and relevant education for all students, whatever their chosen field of study. TPSE Math will identify innovative practices where they exist, advocate for innovation where they do not, and work with and through partners to implement and scale up effective practices.