High School to College Mathematics Pathways
Opportunities and Challenges in Policy
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• What is the goal?
  Ensure all students graduate from high school “college and career ready”,
  i.e. fully prepared academically for any and all opportunities they choose to
  pursue. (Achieve)

• Who are the key players who must be involved?
  • I.e., Whose job is it?

• What does success look like?
  • E.g., Will we eliminate the need for remedial mathematics courses in IHEs?
• Will policy changes or cultural changes make the greatest difference?
• How do you get there from here?
• How long will it take?
• How do we fund it?
• Why is this so hard?
30 years working to improve mathematics education – A brief history

- NGA – Goals 2000: First in the World in Math and Science
- NCTM – Curriculum Standards; PSSM; Focal Points; Principles to Action
- NSF – Statewide Systemic Initiatives
- CCSSO – The Mathematics Committee (Voluntary National 8th Grade Math Test)
- AMS – Towards Excellence
- CBMS – The Mathematical Education of Teachers (MET1; MET2)
- Achieve – Foundations for Success: Mathematics Expectations for the Middle Grades
- NSF – Math Science Partnerships
- BHEF – An American Imperative
- National Math Panel – Foundations for Success
- AMS – Task Force on First-Year Mathematics
- APLU – Science and Mathematics Teaching Imperative
- APLU – Mathematics Teacher Education Partnership
- NGA/CCSSO – Common Core State Standards for Mathematics
- AMTE – Standards for Preparing Teachers of Mathematics
Wicked Problems

- Problems are never completely solved
- Every problem is unique
- There is no clear problem definition
- Solutions are not right/wrong, but better/worse
- Every solution ramifications throughout the system
- Every wicked problem is connected to others
- Straddle organizational & disciplinary boundaries
- Are multi-causal multi-scalar & interconnected
- Multiple stakeholders with conflicting agendas
- Can take a long time to evaluate solutions

Based upon Rittel and Webber (1973)
Research on “collective impact” (Kania & Kramer, 2011) suggests that, in achieving significant and lasting change in any area, a coordinated effort supported by major players from all existing sectors is more effective than an array of new initiatives and organizations.