Challenges across the U.S.

• Of the 20 fastest-growing occupations of the 21st century, 15 require substantial mathematics and science preparation.¹
• 200,000 math and science teachers are expected to retire within a decade.¹
• From 1950 to 2000, the growth of the STEM (Science, Technology, Engineering, Mathematics) workforce far outstripped that of the total labor force which grew 2.3 times.²
• The preparation of math and science teachers by many colleges and universities does not meet the needs of the modern classroom.³
  • As of 2000, African-Americans made up 6% of the STEM workforce and Hispanics not quite 5%, while each represents 11% of total work force.²

Challenges across Iowa

• Midwestern states have a surplus of social studies teachers, a balanced supply of art teachers, but a “considerable shortage” of physics, chemistry, and math teachers.¹
• The three industry sectors of Iowa’s ‘New Economy’ - bioscience, advanced manufacturing, and information solutions - will require a workforce proficient in math and science.²
• Iowa is 173 teachers short in science and 121 teachers short in mathematics.³
• “In about five years, we’re not going to have anybody to teach physics.”⁴

¹ Rising Above the Gathering Storm, National Academies of Science, 2006
² Commission on Professionals in Science and Technology, 2006
⁴ American Association for Employment in Education, 2006
² Iowa Department of Economic Development, 2006
³ Iowa DOE Task Force on Teacher Shortage, 2006
⁴ Former Governor Tom Vilsack, October 31, 2005
## Board of Regents Mathematics & Science Education Collaborative Initiative

### Goals of the Collaboration

1. To improve mathematics and science performance of Iowa students.
2. To prepare more high-quality mathematics and science teachers for Iowa’s schools.
3. To promote statewide collaboration and coordination.

### Next Steps

1. Create a steering committee
   - Three state universities
2. Gather input from stakeholders
3. Inventory mathematics and science education projects
4. Identify resources
5. Research best practices, benchmarking