



Governor Rendell's Science, Technology, Engineering & Math (STEM) Initiative

*LEVERAGING PUBLIC-PRIVATE PARTNERSHIPS
ON STEM REDESIGN IN PENNSYLVANIA*

An initiative of the National Governors Association
and the Team Pennsylvania Foundation

Project Background

- **Reports such as ‘Rising Above a Gathering Storm’ etc national dialogue has started around the need to focus on STEM education**
- **These efforts are motivated by several factors: Industry & Government are concerned about the size, diversity, and quality of the U.S. engineering/STEM workforce**

Partners in STEM Redesign Connected to PA's Economy



- \$500,000 grants over two years to six states (Colorado, Hawaii, Minnesota, Ohio, Pennsylvania, and Virginia)
- Grants out of Innovation America initiative; Governor Rendell led Task Force
- Strategic Partners: NGA, Team PA, PDE, L&I, DCED, **DEP**, **PPTN**, **NGCP**, **PACU**, **AT&T**, and growing

A Unique Public-Private Partnership with a Goal to:

Dramatically increase the number of P-20 students
(especially females, minorities and underrepresented groups)
in Science, Technology, Engineering and Mathematics
careers while continuing the development of effective
strategies to retain, recruit and retrain our incumbent
workforce in these critical fields.

We are NOT starting from a Blank Slate;
PA's STEM Transformation is already under way . . .



- **E-Fund** – helping build telecommunications infrastructure in school districts
- **Science: It's Elementary** – SIE school districts outperforming peers throughout the world on science tests by transforming how elementary school teachers teach science to their students
- **Classrooms for the Future** – giving teachers intensive training in how to use technology to improve instruction; transforming teaching & learning; putting laptops in high schools
- **Industry Partnerships** – working to close skills gaps in mostly STEM industries
 - **89 State-wide partnerships** with more than 6,000 businesses
- **Workforce Leadership Grants** – developing programs in bio-technology/life sciences, information technology/electro-optics and advanced manufacturing in education and business
- **Institutional research and programmatic work** from premier institutions such as Carnegie Mellon University, Penn State, Lehigh University etc.

PA STEM Initiative Leadership Structure



- **Governor's STEM Leadership Council**
 - will oversee the development of Pennsylvania's 10 Year STEM strategy.

- **PA STEM Initiative Design Team**
 - will assist the Governor's Leadership Council
 - responsible for meeting the objectives of the two – year NGA/Team PA Grant.

- **Five Regional STEM Networks**
 - will convene stakeholders and develop a regional strategy. The regional strategies will be firmly rooted in the particular characteristics of the region but will also inform and help build the state strategy.

PA STEM Initiative: Short Term Goals



- Organize Five Regional STEM Networks
- Create a long term (10 Year) Pennsylvania STEM Strategy
- Implement a Communication Strategy
- Secure and Leverage Resources

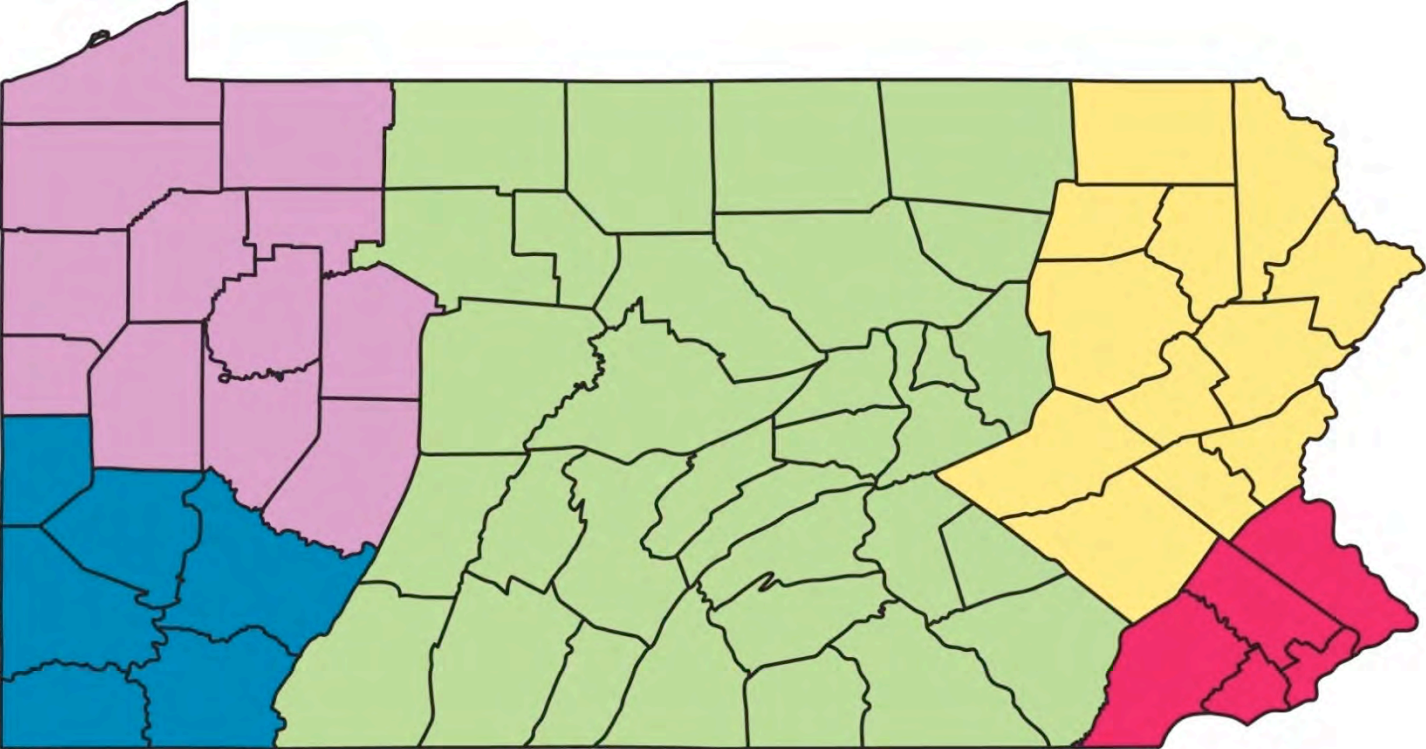




Progress



Through Program Year-One

PA STEM Initiative has:

Developed Five Regional STEM Networks



 Northwest PA
 Southwest PA

 Central PA
 Northeast PA

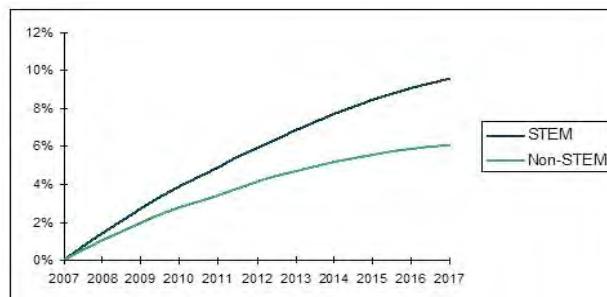
 Southeast PA

*The regional boundaries and service areas follow the definitions of Pennsylvania's Inspired Leadership Regions.

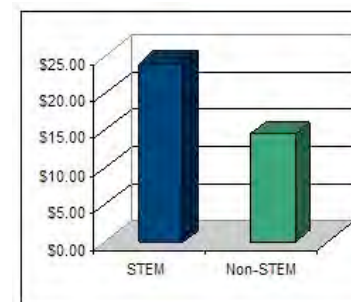
Linked Education & Workforce Issues

- **Analysis of the Critical Gaps**

Research on the supply/demand for STEM education and skills in the future and the future supply/demand of those same skills



10% Growth projected in STEM occupations
 4% Growth projected in Non-STEM



Earnings gap between STEM and Non-STEM averages \$9.55 per Hour

Developed A Coordinated Long Term Strategy



- Increase the number and diversity of Pennsylvania's residents and workers with high quality post-secondary STEM education and training
- Ensure that all graduates from Pennsylvania's high schools are proficient in STEM content areas
- Increase the number and diversity of teachers well-prepared in STEM content areas who are working in Pennsylvania's P-20 educational institutions
- Increase public support for STEM education as a priority for the Commonwealth's citizens

Identified and Aligned Resources

- **Communications Strategy**
 - Regions and Partner Programs will be aligned under same branding
 - Communicate what STEM is and its relevance
- **Asset Mapping process**
 - Each region will create a database of STEM programs and practices
- **Resource Development Plan**
 - PA STEM Initiative grants from the following partners:
 - Wall St. West
 - National Girls Collaborative Grant
 - PA Association of Colleges and Universities
 - AT&T

Developed consensus on what
STEM means to us . . .

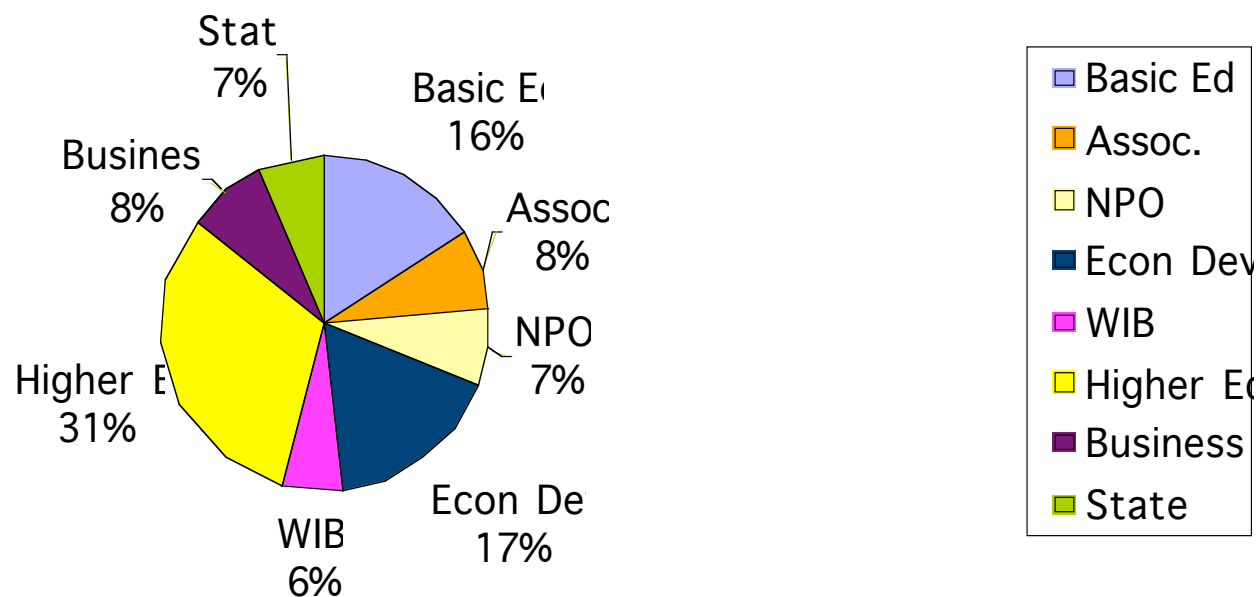


STEM Education is an interdisciplinary approach to learning where students learn science, technology, engineering, and mathematics as they develop 21st century skill sets which will enable them to compete globally in tomorrow's economy. (*Courtesy: Robin Shoop, CMU*)

STEM Occupations center around the core fields of science, technology, engineering, and mathematics. Pennsylvania chose its definitions of STEM occupations based on the definitions given by the National Science Foundation, which focuses on occupations which require a significant level of STEM knowledge and skills. But we customized and supplemented with other STEM-aligned occupations, particularly in the field of health care.

Current Composition of Regional Networks: Unfinished Business!!

Total Region Percer

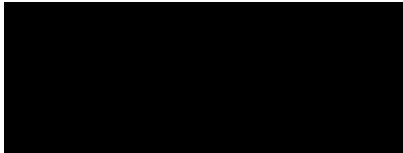


Strategic Partners 2007



Partners in STEM Redesign Connected to PA's Economy

Strategic Partners 2008



Partners in STEM Redesign Connected to PA's Economy



CONTACT

Questions?

Pennsylvania Science, Technology, Engineering and Math Initiative:
www.pasteminitiative.org

An effective STEM education policy agenda that builds upon regional diversity will help Pennsylvania support its economic future.

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