

Governor's Conference on Postsecondary Education Trusteeship

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Bureau of Labor Statistics

Job Outlook in Selected Sectors (2004-2014)

Growth of 27% or more

- Computer Science
- Database Administration
- Software Engineering
- Biomedical Engineering
- Environmental Engineering
- Healthcare
- Medical Research
- Internet Publishing

Decline

- Agriculture
- Manufacturing
- Mining
- Textile and Apparel Production

America's STEM Shortfall

- Number of American 18- to 24-year-olds who receive science degrees has fallen to 17th in the world. U.S. ranked 3rd three decades ago.
- Asian universities produce eight times more engineering bachelor's degrees than the United States.
- Of the 2.8 million university degrees in science and engineering granted worldwide in 2003, 1.2 million were earned in Asian universities, 830,000 in Europe, and 400,000 in the U.S.

Kentucky's STEM Shortfall

- 47th in workforce education
- 47th in number of scientists and engineers
- 45th in number of patents
- 42nd in high-tech jobs
- 39th in industry investment in R&D
- 33rd in number of fastest growing companies

Kentucky's Leaking Pipeline

Bachelor's Degrees Conferred in Science and Engineering (2003)

- U.S. average – 7.82 per 1,000 individuals
- Kentucky – 4.76 per 1,000 individuals (Ranked 49th in the nation)

Science and Engineering Degrees as Share of Degrees Conferred (2003)

- U.S. average – 29.7%
- Kentucky – 22.7% (Ranked 48th in the nation)

Kentucky's STEM Economy

Individuals in Science and Engineering Occupations (2002)

- U.S. average – 3.61%
- Kentucky – 2.4% (Ranked 41st in the nation)

High-tech Share of All Business Establishments (2002)

- U.S. average – 6.3%
- Kentucky – 4.1% (Ranked 44th in the nation)

STEM Task Force Recommendations

1. Energize and fund a statewide STEM public awareness campaign
2. Create incentives and a supportive environment for students, teachers, and institutions in STEM disciplines
3. Implement international benchmarks and best practices in professional development programs for P-16 STEM teachers
4. Improve teacher preparation programs and encourage people with undergraduate and graduate STEM degrees to enter the teaching profession

STEM Task Force Recommendations

5. Revolutionize how STEM subjects are taught, learned, and assessed
6. Engage business, industry, and civic leaders to improve STEM education and skills in the Commonwealth and create incentives for Kentucky businesses that employ and invest in STEM educated students
7. Develop an ongoing, coordinated, statewide STEM initiative that maximizes that is focused on developing and attracting STEM-related jobs to Kentucky
8. Target energy sustainability problems and opportunities in Kentucky and the nation as a primary objective of statewide STEM enhancements