



WI Fact Sheet

In Wisconsin between 2006 and 2016:

STEM occupations and related pathways account for **1 in 5** New Jobs

1 in 10 jobs are in **STEM** or related pathways

Among **30 Fastest Growing** occupations in the state **15** are **STEM** or related pathways

Source: 2006-2016 Wisconsin Projections, Office of Economic Advisors, Department of Workforce Development

Working Definition of STEM Occupations in Wisconsin

- Some formal training or education is required; on-the-job training is not sufficient.
- AND EITHER
- Job requires the use of tools from science, technology, engineering or mathematics to perform non-routine tasks or apply complex rules.
- OR
- Invention, innovation or advancement of body of existing knowledge and understanding.

Office of Economic Advisors, WI DWD

STEM Occupations in Wisconsin

Today, Americans are feeling the gradual and subtle effects of globalization that challenge the economic and strategic leadership that the United States has enjoyed since World War II. A substantial portion of our workforce finds itself in direct competition for jobs with lower-wage workers around the globe, and leading-edge scientific and engineering work is being accomplished in many parts of the world. This is no different for the residents of Wisconsin.

Wisconsin's employment is projected to grow by 8.0 percent from 2006-2016, creating 246,400 new jobs. In addition, there will be 680,200 job openings due to replacement needs during the ten-year period. Together, the total, 926,600 job openings, will be dispersed among 800 occupations in nearly 90 industries. One in ten jobs in Wisconsin is in science, technology, engineering or math (STEM) and will account for over one in five of the new jobs created between 2006 and 2016.

The Gender Gap in STEM Occupations in Wisconsin

Nontraditional* STEM Occupations	Females Working	Female %
Science Occupations	1,347	24%
Technology Occupations	5,177	10%
Engineering Occupations	5,604	10%

Source: 2006-2016 Wisconsin Projections, Office of Economic Advisors, Department of Workforce Development
*Less than 25% of individuals employed in these occupations nationwide are women)
figure 1

Selected STEM Occupations	Percent Female
Registered Nurses	94%
Engineering Technicians	12%
Industrial Engineers	20%
Computer Scientists & Systems Analysts	31%
Computer Support Specialists	32%

Source: 2006 American Community Survey (retrieved through IPUMS), Office of Economic Advisors, Department of Workforce Development
figure 2

Not unlike the gender gap across the nation, Wisconsin reflects the continuing disparity between men and women's participation in nontraditional STEM occupations and their wage earnings in all STEM occupations. Figure 1 shows the distribution of women in STEM related occupations in Wisconsin that are considered nontraditional* for women. The data points to the need to increase the participation of women in engineering and technology occupations. When looking

at all STEM occupations, not just those nontraditional for women, Figure 2 shows similar participation of men and women in these career fields. However when the data for wage earnings is compared, a significant wage gap appears between men and women in STEM occupations which starts upon entry into the career field and widens as the population ages. At the age of peak earnings women earn approximately 48% of men in STEM occupations in Wisconsin.

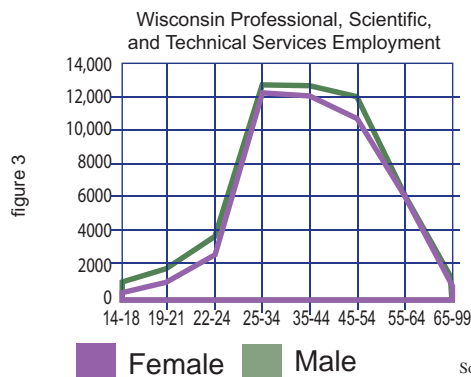


figure 3

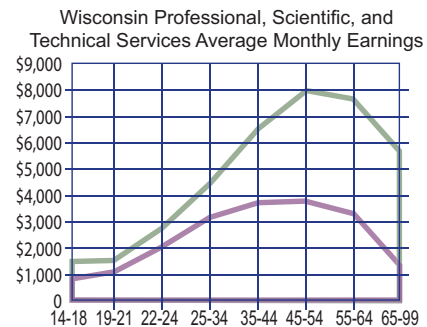


figure 4

Source: U.S. Dept. of Commerce, Census Bureau, Local Employment Dynamics

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Are Wisconsin Graduates Prepared to Meet the Growing Need for STEM Skills

Academic Preparation

Student's participation rate in upper level science and mathematics courses, including advanced placement, has increased from 2000 to 2007 in all areas except advanced placement mathematics. Girl's participation rates in advanced placement science courses such as chemistry is keeping pace with boys but not so with advanced mathematics and physics. Although, there is no indication from

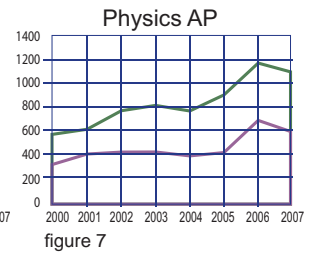
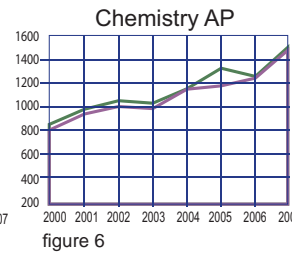
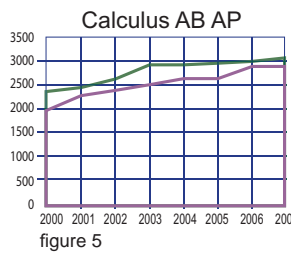
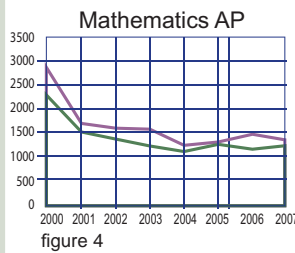
standardized assessment results to support this trend, girls appear to not be choosing to participate in advanced math and physics courses often closing options for further study in these fields at the postsecondary level. Girls participate at a slightly higher rate than boys in advanced placement mathematics but this trend reverses significantly in calculus and physics.

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Female Male



Technical Preparation

The US Bureau of Labor Statistics has identified 30 occupations that will experience the largest employment growth between 2006-2016. Nontraditional occupations-those in which males or females comprise less

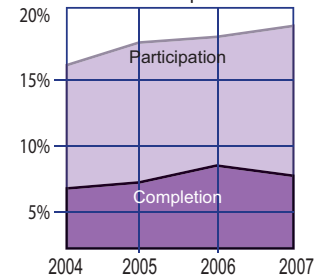
than 25 percent of the workforce-account for more than half of these careers. And of these occupations, roughly one-sixth will require highly educated workers possessing an associates or bachelor's degree.

CTE Programs Nontraditional for Females

Wisconsin Secondary CTE Programs	2007
Title	Female
Ag Production & Management	27.14%
Ag Supplies & Services	24.71%
Forest Production & Processing	25.81%
Architectural Engineering, Technical	26.26%
Electrical & Electronic Engineering, Technical	6.71%
Electro-Mechanical Instrumentation & Maint.	4.62%
Mechanical Engineering, Technical	8.33%
Masons & Tile Setters	.66%
Carpenters	2.91%
Electrical & Power Transmission Installers	2.91%
Construction Trades, Other	2.84%
Plumbers & Pipefitters	.89%
Electrical & Electronics Equipment Workers	6.26%
HVAC & Refrigeration Mechanics	2.49%
Industrial Equipment Mechanics	2.13%
Vehicle & Mobile Equip. Mechanics & Repairers	5.10%
Precision Metal Workers	4.86%
Woodworkers	1.38%
Air Transportation Workers	15.08%
Vehicle & Equipment Operators	10.10%
Total	13.27%

Notes: Data is from Wisconsin DPI VEERS Composite Enrollment Reports, grades 11-13 only, counts are based upon vocational concentrators
figure 8

Secondary Participation and Completion



Postsecondary Participation and Completion

