

The Demand for STEM and Graduate Education

STEM Jobs, Education, and the Economy through 2018

The Role and Status of the
Master's Degree in STEM
For the
Council of Graduate Schools and
the National Science Foundation

May 18th, 2010
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GEORGETOWN UNIVERSITY

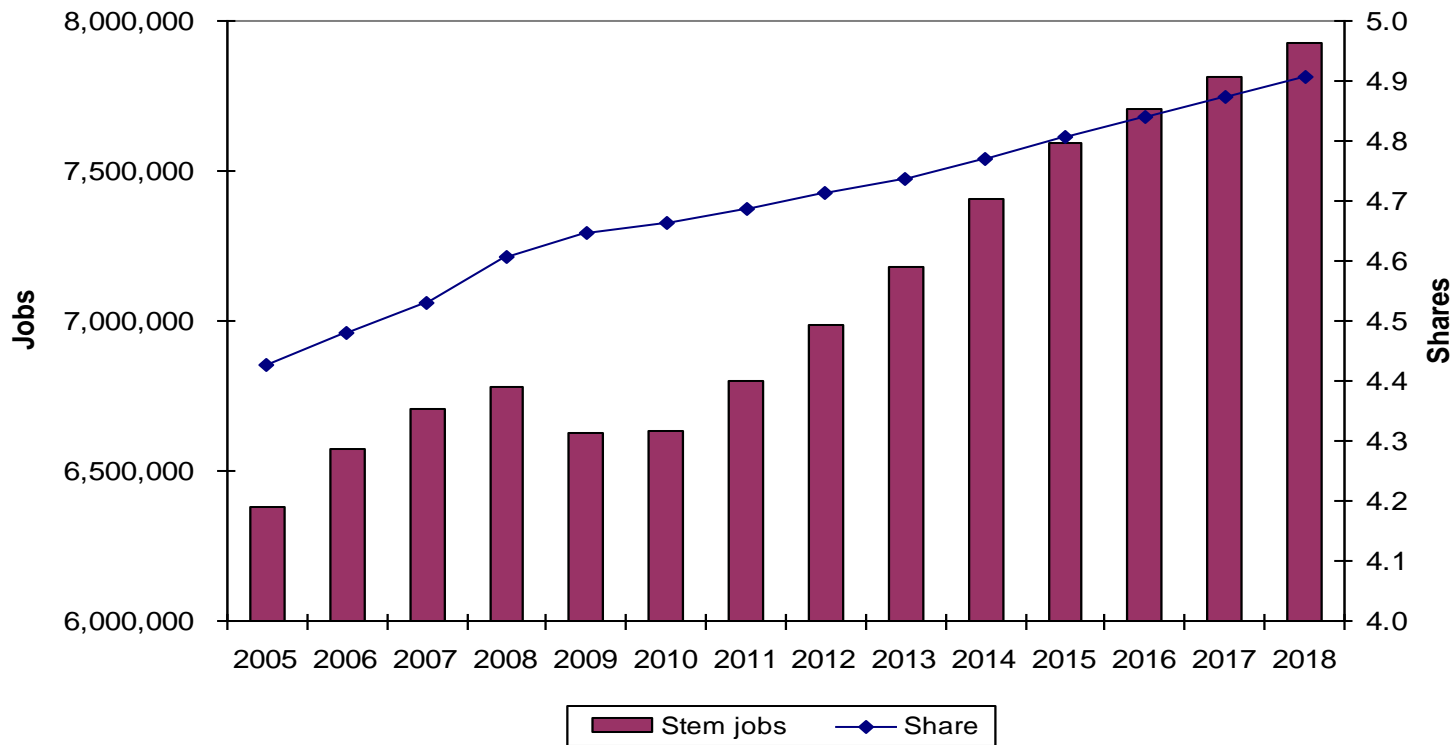
Center on Education and the Workforce

STEM jobs are only 5% of the Workplace. Why Care???

- Scientific innovation has produced roughly half of all U.S. economic growth over the last 50 years. (NSF, 2004).
- Critical fuel for the engines of innovation and growth
- Have been growing rapidly – 23% between 1994-2003
- Forecasted to grow at twice the rate of the economy as a whole between now and 2018



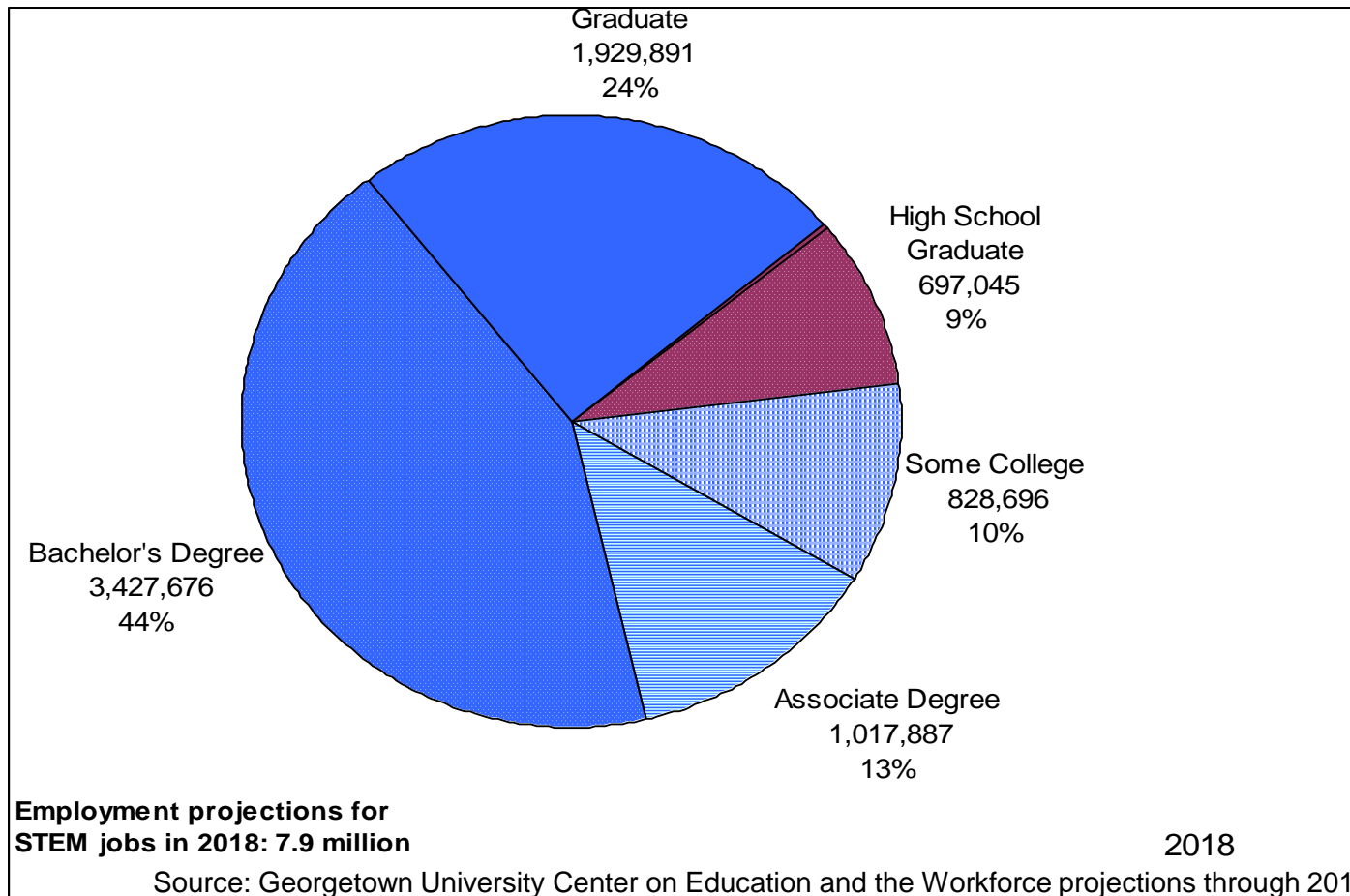
STEM jobs show nearly 17% growth, will grow much more quickly than the economy (10%).



Source: Georgetown University Center on Education and the Workforce projections through 2018



What will STEM jobs require?



Education requirements in Computer and Mathematical Occupation: 2008 and 2018

	Education Requirements (2008/2018)			
	2008	Percentage	2018	Percentage
High school dropouts	18,009	1%	21,406	1%
High school graduates	251,618	7%	229,500	5%
Some college	393,410	12%	476,684	11%
Associate's degree	336,159	10%	408,244	10%
Bachelor's degree	1,658,123	49%	2,127,160	51%
Master's degree	684,770	20%	844,819	20%
Professional degree	22,378	0.7%	39,267	1%
Doctorate degree	46,710	1.4%	62,463	1%

Source: Georgetown University Center on Education and the Workforce projections through 2018



Educational Requirements in Architecture and Architectural Technician Occupations: 2008 and 2018

	Education Requirements (2008/2018)			
	2008	Percentage	2018	Percentage
High school dropouts	242	0.1%	1,053	0.2%
High school graduates	15,208	3%	13,331	3%
Some college	30,350	7%	15,206	3%
Associate's degree	28,949	7%	27,634	6%
Bachelor's degree	230,269	52%	264,399	56%
Master's degree	115,818	26%	133,360	28%
Professional degree	8,080	2%	7,748	2%
Doctorate degree	11,739	3%	12,194	3%

Source: Georgetown University Center on Education and the Workforce projections through 2018



Education requirements for Engineers and Engineering Technician Occupations: 2008 and 2018

	Education Requirements (2008/2018)			
	2008	Percentage	2018	Percentage
High school dropouts	71,000	3%	5,246	0.2%
High school graduates	338,594	16%	433,498	19%
Some college	359,624	18%	325,252	15%
Associate's degree	470,703	23%	581,429	26%
Bachelor's degree	526,220	26%	604,506	27%
Master's degree	224,932	11%	240,476	11%
Professional degree	34,984	2%	17,562	1%
Doctorate degree	26,280	1%	31,397	1%

Source: Georgetown University Center on Education and the Workforce projections through 2018



Education Requirements in Life and Physical Sciences Occupations: 2008 and 2018

	Education Requirements (2008/2018)			
	2008	Percentage	2018	Percentage
High school dropouts	-	0%	-	0%
High school graduates	17,958	2%	20,299	2%
Some college	26,493	3%	11,085	1%
Associate's degree	16,669	2%	-	0%
Bachelor's degree	368,244	42%	430,905	43%
Master's degree	267,649	31%	281,855	28%
Professional degree	24,078	2.8%	28,962	3%
Doctorate degree	152,326	17%	229,590	23%

Source: Georgetown University Center on Education and the Workforce projections through 2018



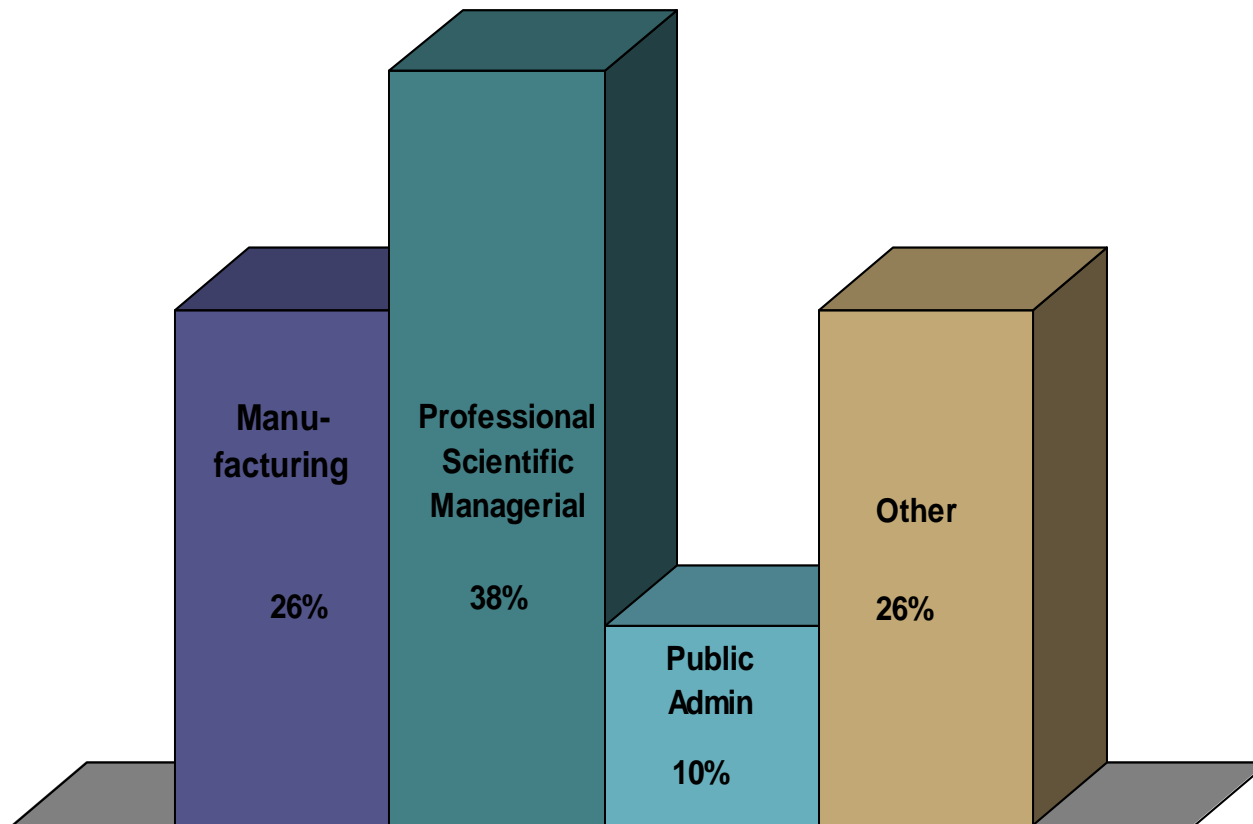
Master's Level Employment in STEM Jobs will Grow More Than the Overall Economy with Computer and Math Fields Driving Growth.

Stem Field	2008	2018	Change	%Change
Computer and Math	684,770	844,819	160,049	23%
Life Sciences	267,649	281,855	14,206	5%
Engineering	224,932	240,476	15,544	7%
Architectural	115,818	133,360	17,542	15%
Total Stem	1,293,169	1,500,510	207,341	16%

Source: Georgetown University Center on Education and the Workforce projections through 2018



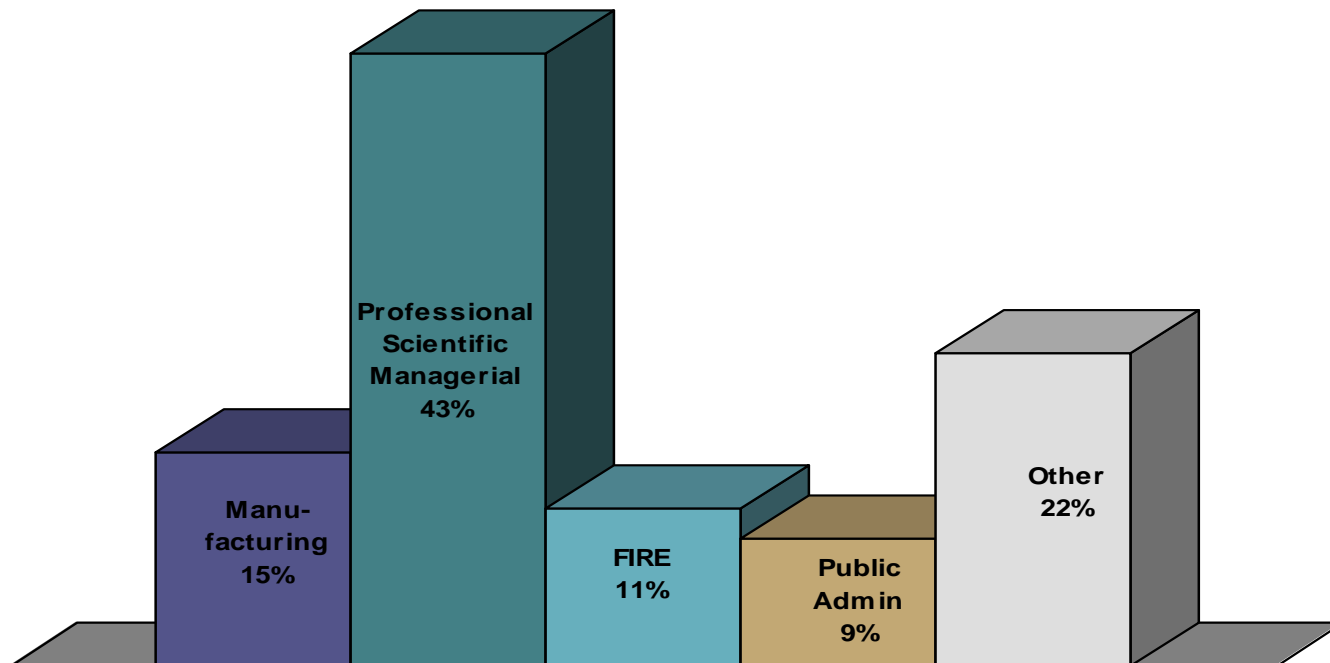
Master's Level STEM Jobs Are Concentrated in Manufacturing, Professional, Scientific, Public Administration, and Other Industries.



Source: Georgetown University Center on Education and the Workforce calculations CPS various years



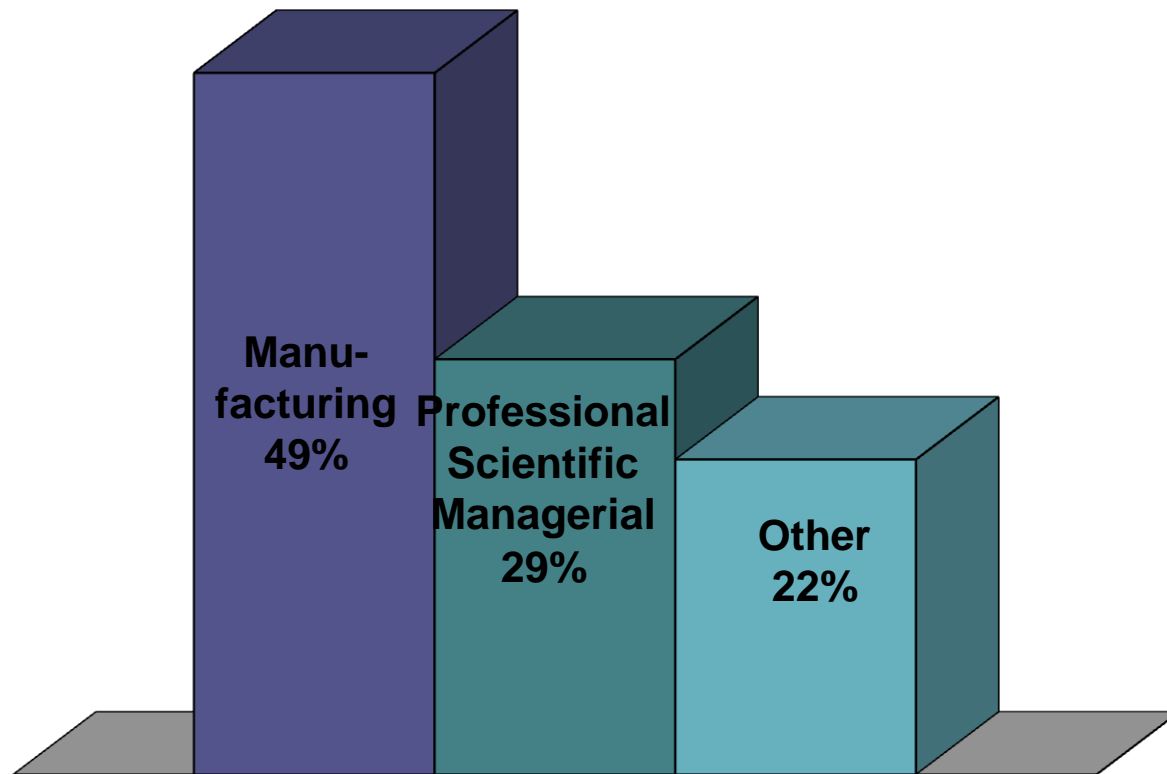
Master's Level Computer and Mathematic Stem Jobs are Heavily Concentrated in Professional, Scientific, Managerial, and Other Industries.



Source: Georgetown University Center on Education and the Workforce calculations CPS various years



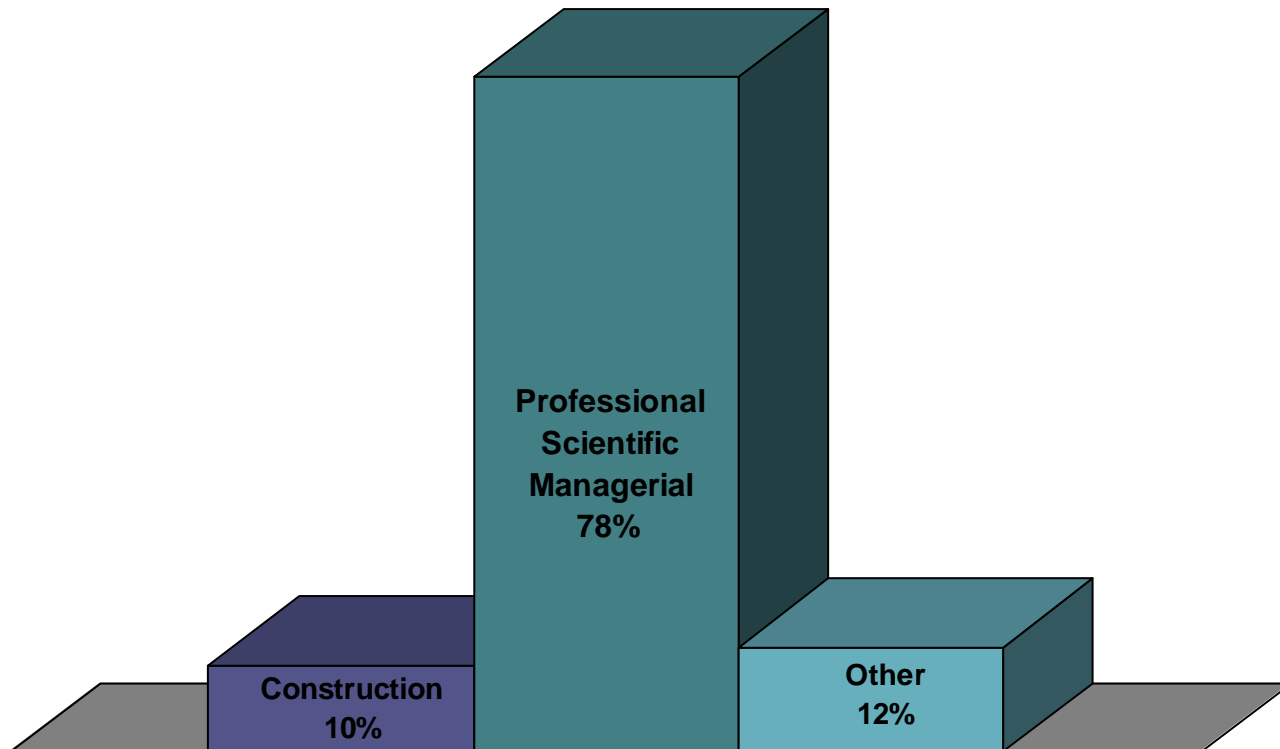
Master's Level Engineering STEM Jobs are Highly Concentrated in Manufacturing Industries.



Source: Georgetown University Center on Education and the Workforce calculations CPS various years



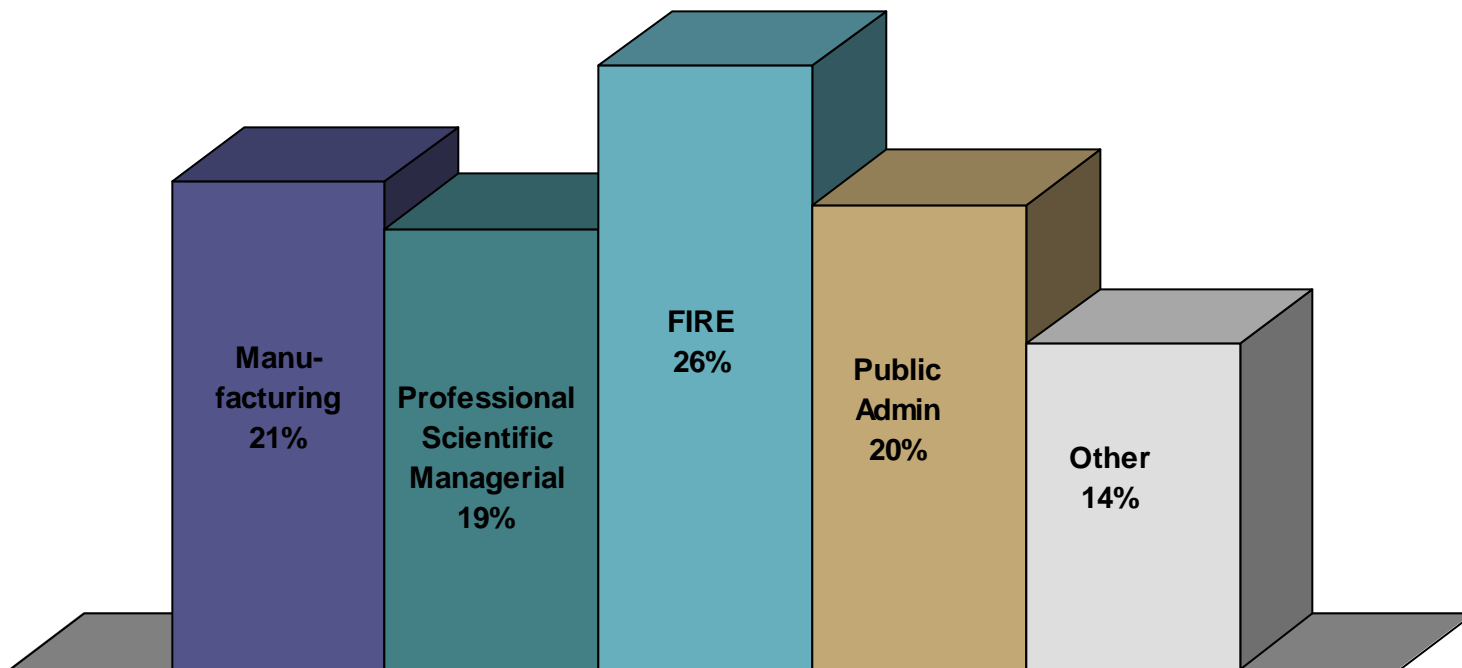
Master's Level Jobs in Architectural Jobs are Found Mainly in Professional, Scientific, and Managerial Industries.



Source: Georgetown University Center on Education and the Workforce calculations CPS various years



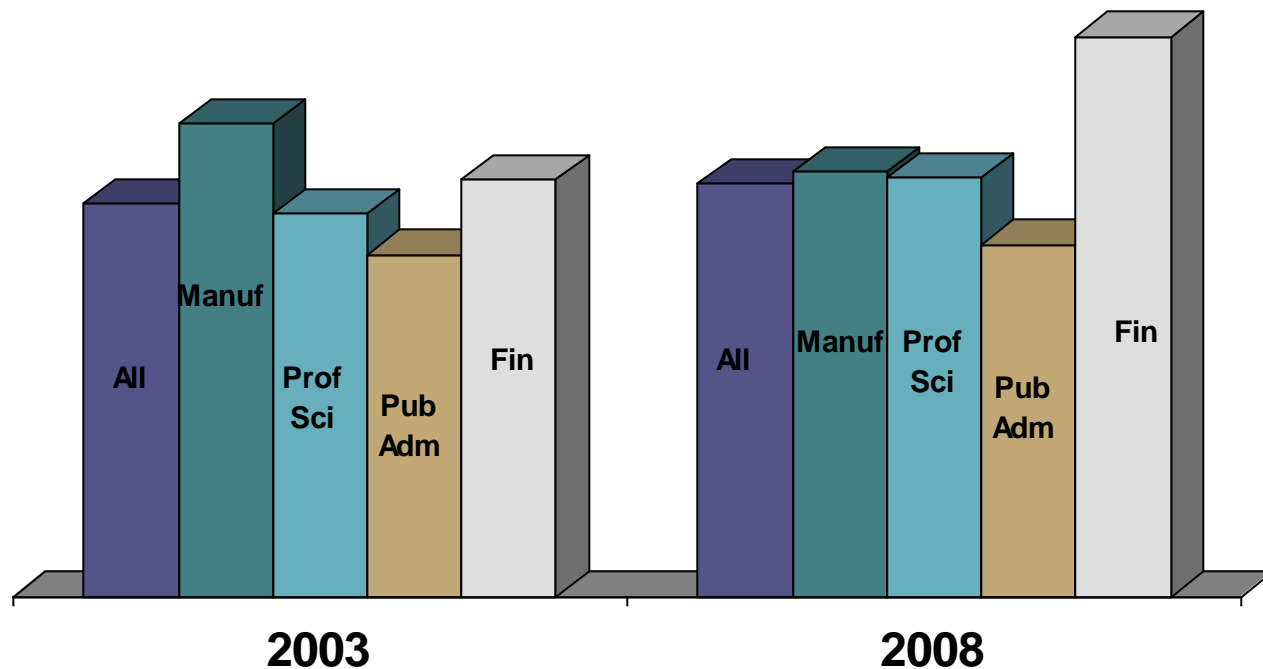
Master's Level Life Sciences Jobs are Spread Across More Industries than are Other Stem Occupations.



Source: Georgetown University Center on Education and the Workforce calculations CPS various years



Wages for Master's Level STEM Occupations have Risen Steadily Since 2003, with Wages in the Financial Industry Soaring (+34%) while Manufacturing Wages Declined by 10%.



Source: Georgetown University Center on Education and the Workforce calculations CPS various years

