STEM Occupations
in Allegheny County

STEM Occupations

Code	Description
15-1100	Computer Occupations
15-2000	Mathematical Science Occupations
17-2000	Engineers
17-3000	Drafters, Engineering Technicians, and Mapping Technicians
19-1000	Life Scientists
19-2000	Physical Scientists
19-3000	Social Scientists and Related Workers
19-4000	Life, Physical, and Social Science Technicians

Occupation Summary for STEM Occupations

44,620	12.1%	$33.48/hr
Jobs (2015)	**% Change (2010-2015)**	**Median Hourly Earnings**
20% above National average	Nation: 10.9%	Nation: $37.69/hr

Growth

39,812	44,620	4,808	12.1%
2010 Jobs	**2015 Jobs**	**Change (2010-2015)**	**% Change (2010-2015)**

Occupation	2010 Jobs	2015 Jobs	Change	% Change
Computer and Information Research Scientists (15-1111)	41	40	-1	-2%
Computer Systems Analysts (15-1121)	3,464	4,092	628	18%
Information Security Analysts (15-1122)	310	354	44	14%
Computer Programmers (15-1131)	2,100	2,393	293	14%
Software Developers, Applications (15-1132)	3,577	4,283	706	20%
Software Developers, Systems Software (15-1133)	1,184	1,314	130	11%
Web Developers (15-1134)	466	533	67	14%
Database Administrators (15-1141)	711	765	54	8%
Network and Computer Systems Administrators (15-1142)	2,139	2,305	166	8%
Computer Network Architects (15-1143)	561	606	45	8%

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Occupation	2010 Jobs	2015 Jobs	Change	% Change
Computer User Support Specialists (15-1151)	3,920	4,427	507	13%
Computer Network Support Specialists (15-1152)	778	806	28	4%
Computer Occupations, All Other (15-1199)	791	796	5	1%
Actuaries (15-2011)	170	193	23	14%
Mathematicians (15-2021)	18	21	3	17%
Operations Research Analysts (15-2031)	442	502	60	14%
Statisticians (15-2041)	256	299	43	17%
Mathematical Technicians (15-2091)	7	8	1	14%
Mathematical Science Occupations, All Other (15-2099)	7	7	0	0%
Aerospace Engineers (17-2011)	113	124	11	10%
Agricultural Engineers (17-2021)	19	21	2	11%
Biomedical Engineers (17-2031)	85	96	11	13%
Chemical Engineers (17-2041)	187	209	22	12%
Civil Engineers (17-2051)	2,065	2,406	341	17%
Computer Hardware Engineers (17-2061)	174	186	12	7%
Electrical Engineers (17-2071)	965	1,075	110	11%
Electronics Engineers, Except Computer (17-2072)	391	396	5	1%
Environmental Engineers (17-2081)	493	573	80	16%
Health and Safety Engineers, Except Mining	129	141	12	9%

Occupation	2010 Jobs	2015 Jobs	Change	% Change
Safety Engineers and Inspectors (17-2111)				
Industrial Engineers (17-2112)	1,061	1,177	116	11%
Marine Engineers and Naval Architects (17-2121)	24	28	4	17%
Materials Engineers (17-2131)	161	172	11	7%
Mechanical Engineers (17-2141)	1,313	1,451	138	11%
Mining and Geological Engineers, Including Mining Safety Engineers (17-2151)	59	78	19	32%
Nuclear Engineers (17-2161)	371	433	62	17%
Petroleum Engineers (17-2171)	216	305	89	41%
Engineers, All Other (17-2199)	421	438	17	4%
Architectural and Civil Drafters (17-3011)	821	881	60	7%
Electrical and Electronics Drafters (17-3012)	176	195	19	11%
Mechanical Drafters (17-3013)	467	492	25	5%
Drafters, All Other (17-3019)	55	62	7	13%
Aerospace Engineering and Operations Technicians (17-3021)	14	14	0	0%
Civil Engineering Technicians (17-3022)	484	515	31	6%
Electrical and Electronics Engineering Technicians (17-3023)	655	687	32	5%
Electro-Mechanical Technicians (17-3024)	55	60	5	9%

Occupation	2010 Jobs	2015 Jobs	Change	% Change
Environmental Engineering Technicians (17-3025)	151	179	28	19%
Industrial Engineering Technicians (17-3026)	168	171	3	2%
Mechanical Engineering Technicians (17-3027)	196	218	22	11%
Engineering Technicians, Except Drafters, All Other (17-3029)	212	222	10	5%
Surveying and Mapping Technicians (17-3031)	303	359	56	18%
Animal Scientists (19-1011)	3	4	1	33%
Food Scientists and Technologists (19-1012)	27	30	3	11%
Soil and Plant Scientists (19-1013)	39	44	5	13%
Biochemists and Biophysicists (19-1021)	130	151	21	16%
Microbiologists (19-1022)	176	194	18	10%
Zoologists and Wildlife Biologists (19-1023)	18	18	0	0%
Biological Scientists, All Other (19-1029)	81	78	-3	-4%
Conservation Scientists (19-1031)	54	54	0	0%
Foresters (19-1032)	34	36	2	6%
Epidemiologists (19-1041)	17	18	1	6%
Medical Scientists, Except Epidemiologists (19-1042)	1,170	1,298	128	11%
Life Scientists, All Other (19-1099)	25	25	0	0%
Astronomers (19-2011)	7	7	0	0%
Physicists (19-2012)	36	37	1	3%
Atmospheric and Space	29	31	2	7%

Occupation	2010 Jobs	2015 Jobs	Change	% Change
Scientists (19-2021)				
Chemists (19-2031)	700	765	65	9%
Materials Scientists (19-2032)	66	75	9	14%
Environmental Scientists and Specialists, Including Health (19-2041)	440	504	64	15%
Geoscientists, Except Hydrologists and Geographers (19-2042)	169	221	52	31%
Hydrologists (19-2043)	23	24	1	4%
Physical Scientists, All Other (19-2099)	86	88	2	2%
Economists (19-3011)	60	60	0	0%
Survey Researchers (19-3022)	125	152	27	22%
Clinical, Counseling, and School Psychologists (19-3031)	431	424	-7	-2%
Industrial-Organizational Psychologists (19-3032)	8	10	2	25%
Psychologists, All Other (19-3039)	80	80	0	0%
Sociologists (19-3041)	31	34	3	10%
Urban and Regional Planners (19-3051)	175	183	8	5%
Anthropologists and Archeologists (19-3091)	7	7	0	0%
Geographers (19-3092)	3	3	0	0%
Historians (19-3093)	9	10	1	11%
Political Scientists (19-3094)	5	5	0	0%
Social Scientists and Related Workers, All Other (19-3099)	58	54	-4	-7%

Occupation	2010 Jobs	2015 Jobs	Change	% Change
Agricultural and Food Science Technicians (19-4011)	52	55	3	6%
Biological Technicians (19-4021)	837	902	65	8%
Chemical Technicians (19-4031)	515	568	53	10%
Geological and Petroleum Technicians (19-4041)	111	153	42	38%
Nuclear Technicians (19-4051)	91	111	20	22%
Social Science Research Assistants (19-4061)	95	104	9	9%
Environmental Science and Protection Technicians, Including Health (19-4091)	251	296	45	18%
Forensic Science Technicians (19-4092)	15	14	-1	-7%
Forest and Conservation Technicians (19-4093)	38	31	-7	-18%
Life, Physical, and Social Science Technicians, All Other (19-4099)	538	557	19	4%

Percentile Earnings

$26.18/hr	$33.48/hr	$42.28/hr
25th Percentile Earnings	**Median Earnings**	**75th Percentile Earnings**
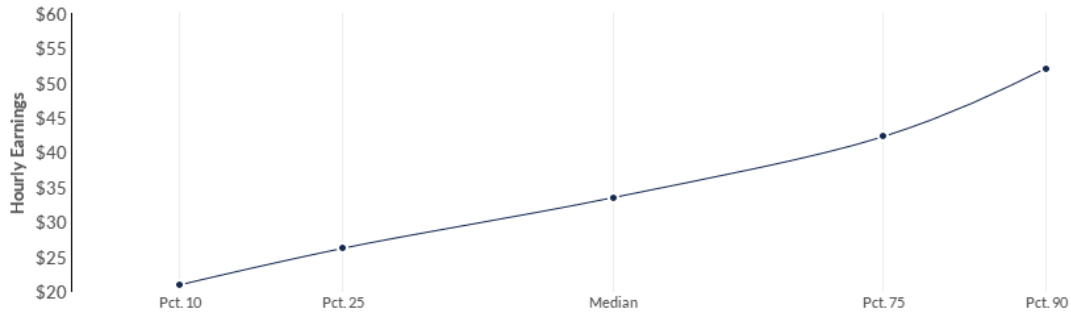
Occupation	25th Percentile Earnings	Median Earnings	75th Percentile Earnings
Computer Occupations (15-1100)	$26.28	$33.48	$42.15
Mathematical Science Occupations (15-2000)	$24.82	$33.15	$44.43
Engineers (17-2000)	$32.04	$40.94	$51.24
Drafters, Engineering Technicians, and Mapping Technicians (17-3000)	$19.11	$24.17	$29.72
Life Scientists (19-1000)	$26.97	$33.60	$43.63
Physical Scientists (19-2000)	$27.31	$36.71	$48.11
Social Scientists and Related Workers (19-3000)	$22.89	$30.89	$40.47
Life, Physical, and Social Science Technicians (19-4000)	$16.66	$21.35	$27.23

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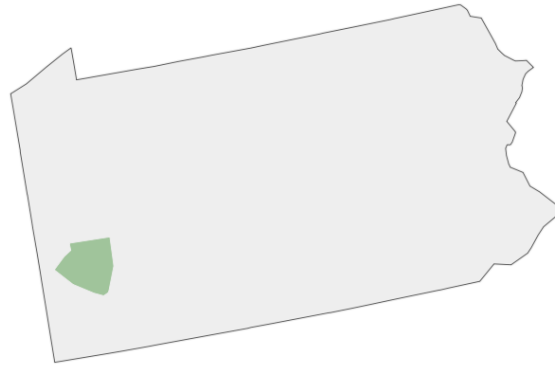## THREE RIVERS WORKFORCE INVESTMENT BOARD

Regional Trends
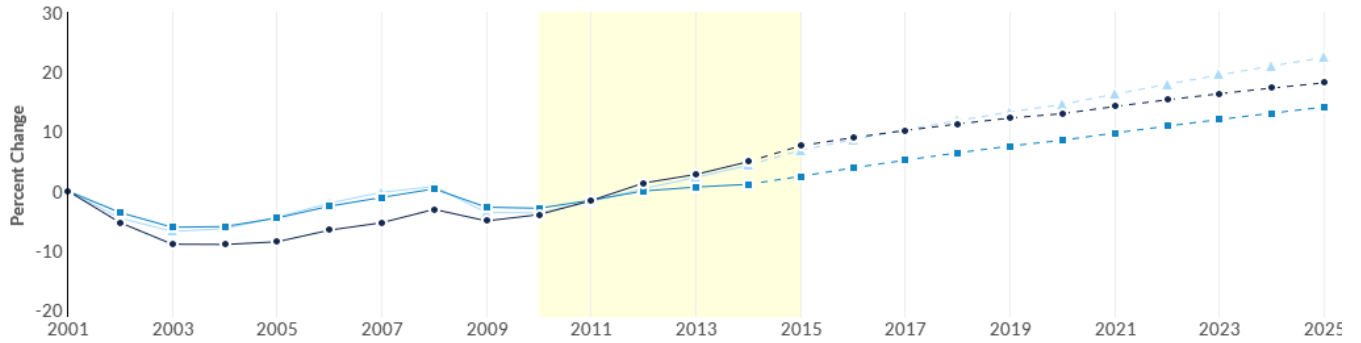
Region	2010 Jobs	2015 Jobs	Change	% Change
● Region	39,812	44,620	4,808	12.1%
● State	271,258	286,260	15,002	5.5%
● Nation	6,770,796	7,511,019	740,223	10.9%

Regional Breakdown

* Highlighted areas show counties that contain the selected zip codes

ZIP	2015 Jobs
Pittsburgh, PA 15222 (in Allegheny County)	5,566
Pittsburgh, PA 15219 (in Allegheny County)	4,479
Coraopolis, PA 15108 (in Allegheny County)	2,544
Pittsburgh, PA 15220 (in Allegheny County)	2,240
Pittsburgh, PA 15238 (in Allegheny County)	2,142

Job Postings Summary

| **5,706**	**3 : 1**
Unique Postings (Jan 2016)	**Posting Intensity (Jan 2016)**
	Regional Average: 4 : 1
19,159 Total Postings	
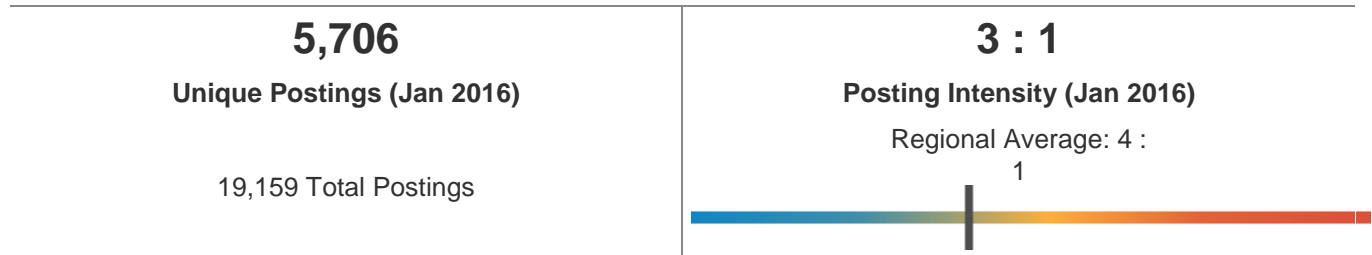
There were **19,159** total job postings for 8 Occupations in January 2016, of which **5,706** were unique. These numbers give us a Posting Intensity of **3-to-1**, meaning that for every 3 postings there is 1 unique job posting.This is lower than the Posting Intensity for all other occupations and companies in the region (4-to-1), indicating that companies may not be trying as hard to hire this position.

Occupation Gender Breakdown
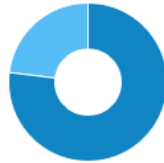
Gender	2015 Jobs	2015 Percent	
● Males	34,334	76.9%	
● Females	10,286	23.1%	

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Occupation Age Breakdown

	Age	2015 Jobs	2015 Percent	
●	14-18	83	0.2%	
●	19-24	2,449	5.5%	
●	25-34	11,589	26.0%	
●	35-44	11,030	24.7%	
●	45-54	10,634	23.8%	
●	55-64	7,500	16.8%	
●	65+	1,334	3.0%	

Occupation Race/Ethnicity Breakdown
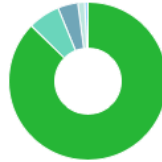
	Race/Ethnicity	2015 Jobs	2015 Percent	
●	White	38,956	87.3%	
●	Asian	2,907	6.5%	
●	Black or African American	1,830	4.1%	
●	Hispanic or Latino	629	1.4%	
●	Two or More Races	244	0.5%	
●	American Indian or Alaska Native	35	0.1%	
●	Native Hawaiian or Other Pacific Islander	19	0.0%	

Occupational Programs

179	10,615	2,047
Programs (2014)	**Completions (2014)**	**Openings (2014)**

CIP Code	Program	Completions (2014)
42.0101	Psychology, General	746
11.0103	Information Technology	733
14.1001	Electrical and Electronics Engineering	523
26.0101	Biology/Biological Sciences, General	478
14.1901	Mechanical Engineering	457

Industries Employing STEM Occupations

Industry	Occupation Group Jobs in Industry (2015)	% of Occupation Group in Industry (2015)	% of Total Jobs in Industry (2015)
Engineering Services	6,311	14.1%	60.3%
Corporate, Subsidiary, and Regional Managing Offices	3,999	9.0%	15.0%
Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)	3,554	8.0%	56.9%
Computer Systems Design Services	3,174	7.1%	61.0%
Custom Computer Programming Services	2,822	6.3%	61.0%

Appendix A - Data Sources and Calculations

Location Quotient

Location quotient (LQ) is a way of quantifying how concentrated a particular industry, cluster, occupation, or demographic group is in a region as compared to the nation. It can reveal what makes a particular region unique in comparison to the national average.

Occupation Data

EMSI occupation employment data are based on final EMSI industry data and final EMSI staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level EMSI earnings by industry.

Completers Data

The completers data in this report is taken directly from the national IPEDS database published by the U.S. Department of Education's National Center for Education Statistics.

Institution Data

The institution data in this report is taken directly from the national IPEDS database published by the U.S. Department of Education's National Center for Education Statistics.

Industry Data

EMSI industry data have various sources depending on the class of worker. (1) For QCEW Employees, EMSI primarily uses the QCEW (Quarterly Census of Employment and Wages), with supplemental estimates from County Business Patterns and Current Employment Statistics. (2) Non-QCEW employees data are based on a number of sources including QCEW, Current Employment Statistics, County Business Patterns, BEA State and Local Personal Income reports, the National Industry-Occupation Employment Matrix (NIOEM), the American Community Survey, and Railroad Retirement Board statistics. (3) Self-Employed and Extended Proprietor classes of worker data are primarily based on the American Community Survey, Nonemployer Statistics, and BEA State and Local Personal Income Reports. Projections for QCEW and Non-QCEW Employees are informed by NIOEM and long-term industry projections published by individual states.

Staffing Patterns Data

The staffing pattern data in this report are compiled from several sources using a specialized process. For QCEW and Non-QCEW Employees classes of worker, sources include Occupational Employment Statistics, the National Industry-Occupation Employment Matrix, and the American Community Survey. For the Self-Employed and Extended Proprietors classes of worker, the primary source is the American Community Survey, with a small amount of information from Occupational Employment Statistics.

State Data Sources

This report uses state data from the following agencies: Pennsylvania Department of Labor and Industry, Center

for Workforce Information and Analysis

Data source: EMSI, 2016