

STEM Occupations in 3 Massachusetts Counties

Emsi Burning Glass



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What is Emsi Data?

Emsi data is a hybrid dataset derived from official government sources such as the US Census Bureau, Bureau of Economic Analysis, and Bureau of Labor Statistics. Leveraging the unique strengths of each source, our data modeling team creates an authoritative dataset that captures more than 99% of all workers in the United States. This core offering is then enriched with data from online social profiles, resumés, and job postings to give you a complete view of the workforce.

Emsi data is frequently cited in major publications such as *The Atlantic*, *Forbes*, *Harvard Business Review*, *The New York Times*, *The Wall Street Journal*, and *USA Today*.



Report Parameters

91 Occupations

15-1211	Computer Systems Analysts	15-1241	Computer Network Architects
15-1212	Information Security Analysts	15-1244	Network and Computer Systems Administrators
15-1221	Computer and Information Research Scientists	15-1245	Database Administrators and Architects
15-1231	Computer Network Support Specialists	15-1251	Computer Programmers
15-1232	Computer User Support Specialists	<i>See Appendix A for all 91 Occupations</i>	

3 Counties

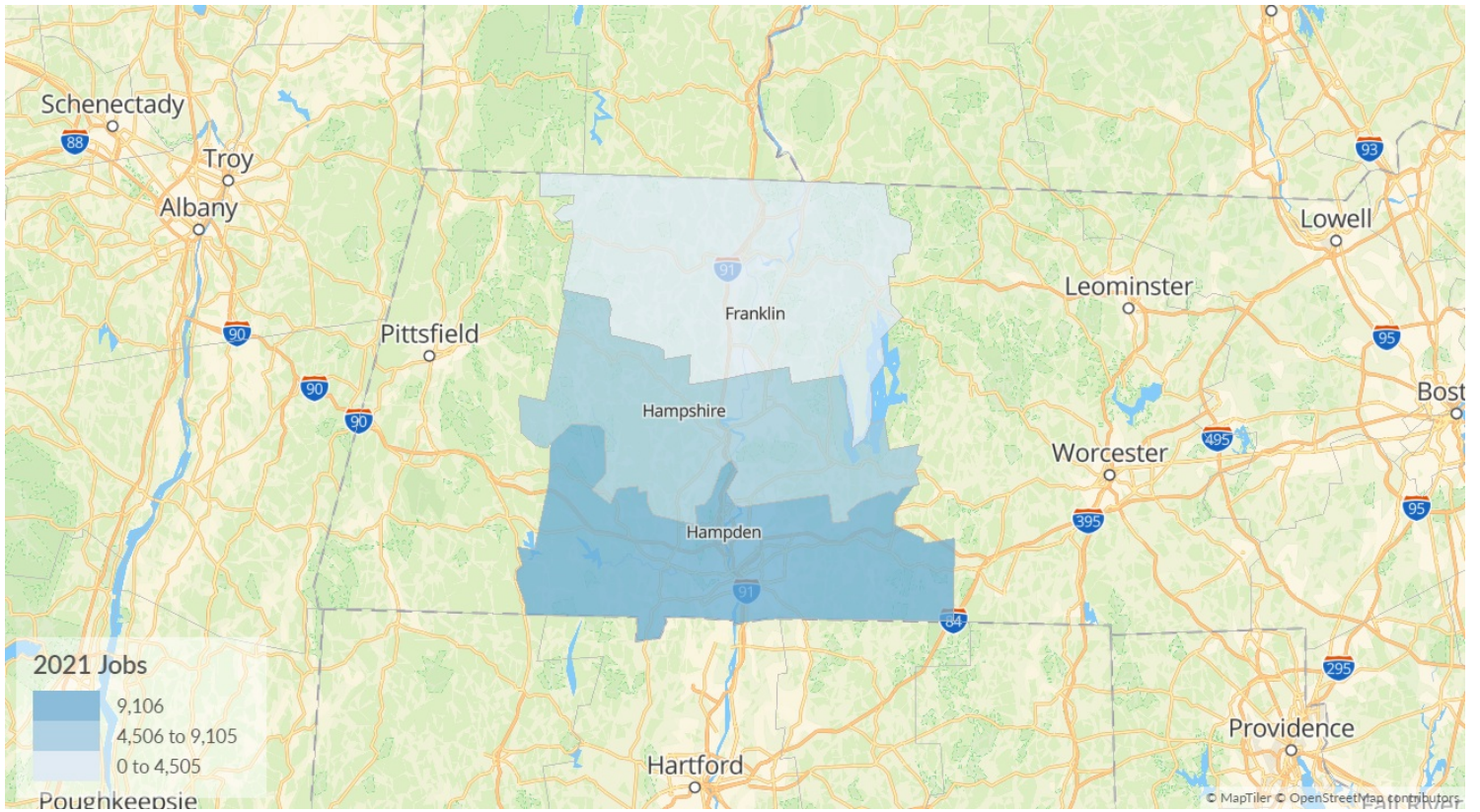
25011	Franklin County, MA	25015	Hampshire County, MA
25013	Hampden County, MA		

Class of Worker

QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors

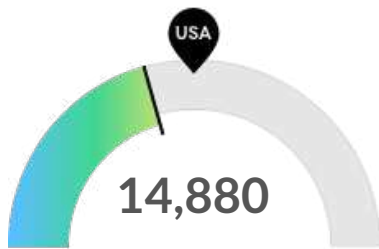
The information in this report pertains to the chosen occupations and geographical areas.

Workforce Map



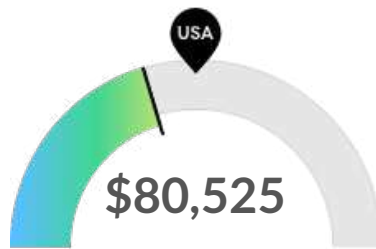
Executive Summary

Light Hiring Competition Over a Thin Supply of Regional Talent



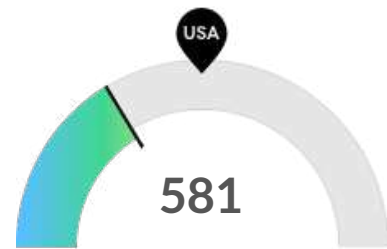
Supply (Jobs)

Your area is not a hotspot for this kind of talent. The national average for an area this size is 19,380* employees, while there are 14,880 here.



Compensation

The cost for talent is about average in your area. The national median salary for your occupations is \$84,621, while you'll pay \$80,525 here.



Demand (Job Postings)

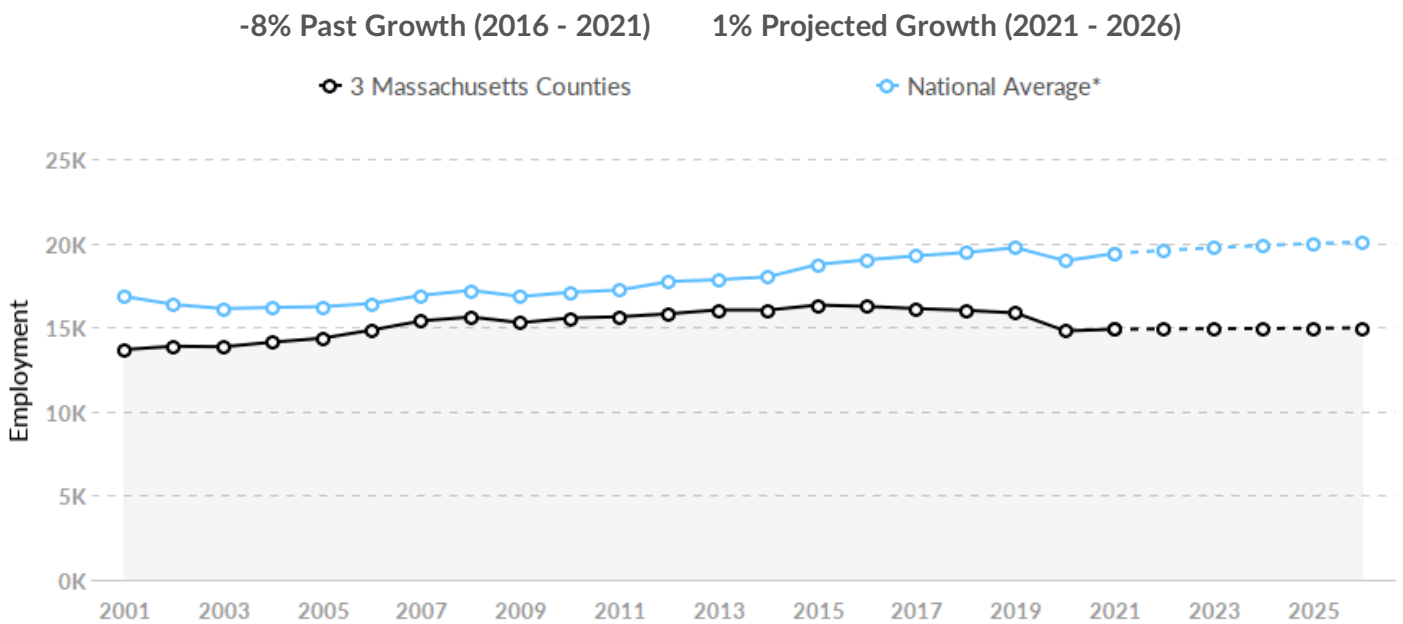
Competition from online job postings is low in your area. The national average for an area this size is 1,018* job posting/mo, while there are 581 here.

*National average values are derived by taking the national value for your occupations and scaling it down to account for the difference in overall workforce size between the nation and your area. In other words, the values represent the national average adjusted for region size.

Supply (Jobs)

Supply Is Lower Than the National Average

The regional vs. national average employment helps you understand if the supply of your occupations is a strength or weakness for your area, and how it is changing relative to the nation. An average area of this size would have 19,380* employees, while there are 14,880 here. This lower than expected supply may make it more difficult to find candidates. The gap between expected and actual employment is expected to increase over the next 5 years.



*National average values are derived by taking the national value for your occupations and scaling it down to account for the difference in overall workforce size between the nation and your area. In other words, the values represent the national average adjusted for region size.

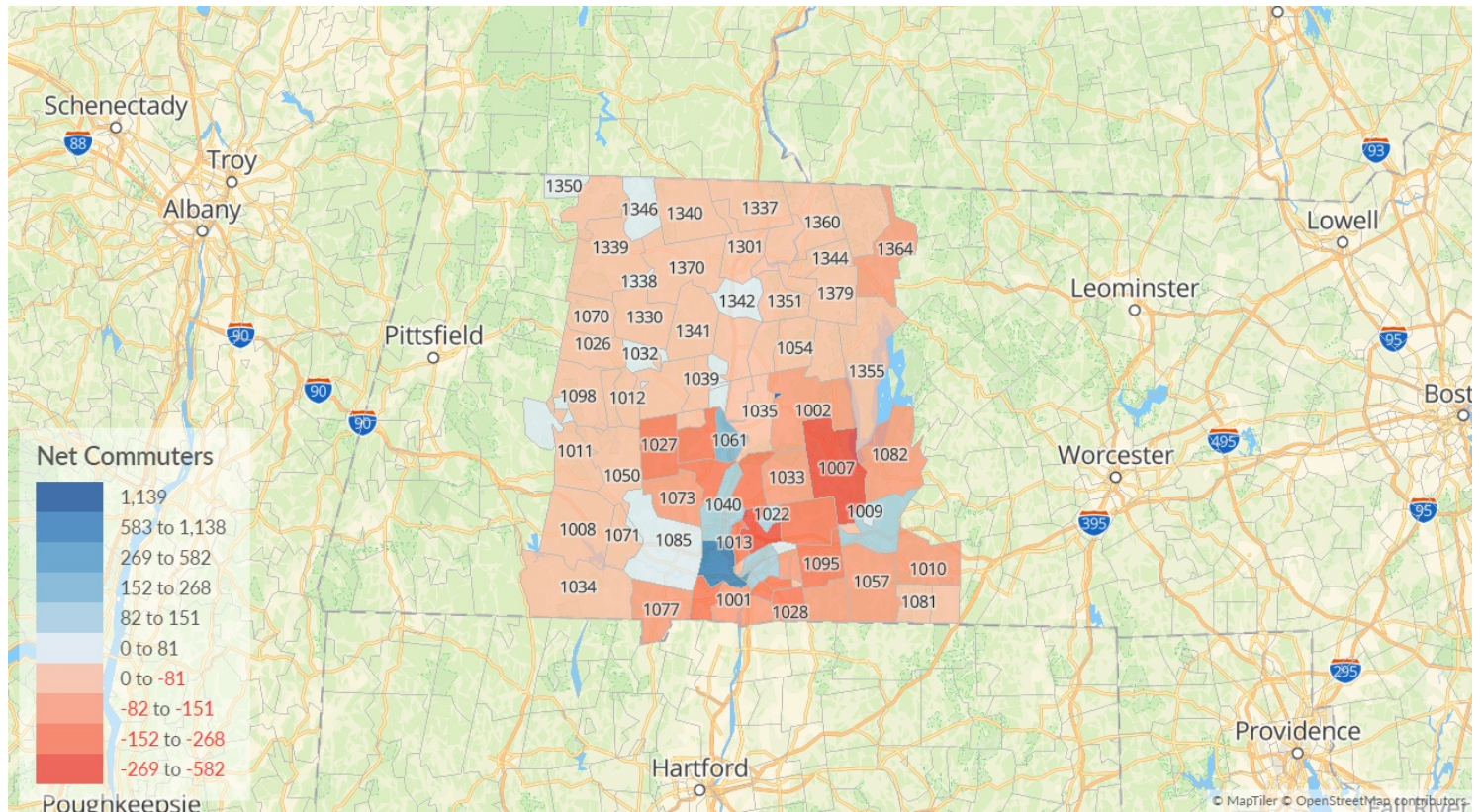
Most Jobs are Found in the Education and Hospitals (State Government) Industry Sector



Industry	% of Occupation in Industry (2021)
Education and Hospitals (State Government)	7.9%
Colleges, Universities, and Professional Schools	7.3%
Computer Systems Design and Related Services	7.3%
Offices of Other Health Practitioners	7.2%
Architectural, Engineering, and Related Services	6.1%
State Government, Excluding Education and Hospitals	4.3%
Other	59.8%

Place of Work vs Place of Residence

Understanding where talent in the region currently works compared to where talent lives can help you optimize site decisions. For example, the #1 ranked ZIP for employment ranks #2 for resident workers. The top ZIP for resident workers is 1085.



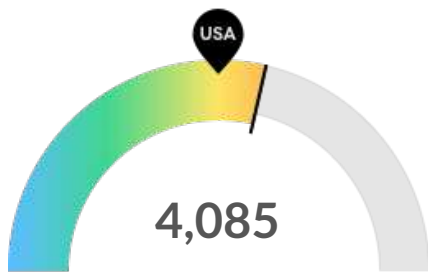
Where Talent Works

ZIP	Name	2021 Employment
1089	West Springfield, MA (in...	1,323
1003	Amherst, MA (in Hamps...	1,232
1085	Westfield, MA (in Hamp...	1,085
1040	Holyoke, MA (in Hampd...	853
1060	Northampton, MA (in H...	816

Where Talent Lives

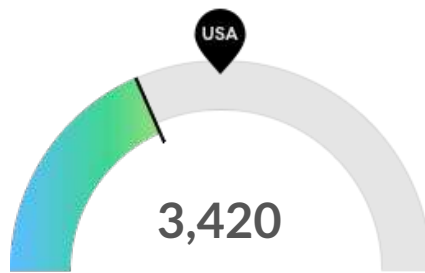
ZIP	Name	2021 Workers
1085	Westfield, MA (in Hamp...	1,074
1089	West Springfield, MA (in...	740
1040	Holyoke, MA (in Hampd...	719
1002	Amherst, MA (in Hamps...	683
1060	Northampton, MA (in H...	655

Retirement Risk Is High, While Overall Diversity Is About Average



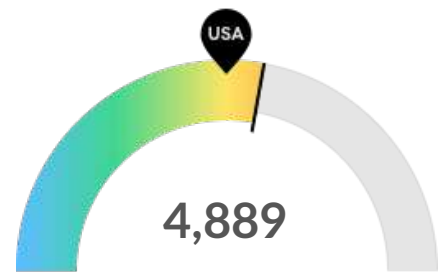
Retiring Soon

Retirement risk is high in your area. The national average for an area this size is 3,332* employees 55 or older, while there are 4,085 here.



Racial Diversity

Racial diversity is low in your area. The national average for an area this size is 5,169* racially diverse employees, while there are 3,420 here.



Gender Diversity

Gender diversity is high in your area. The national average for an area this size is 4,161* female employees, while there are 4,889 here.

*National average values are derived by taking the national value for your occupations and scaling it down to account for the difference in overall workforce size between the nation and your area. In other words, the values represent the national average adjusted for region size.

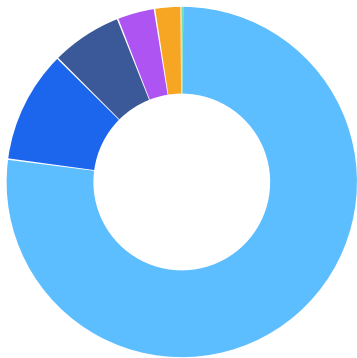
Demographic Details

Occupation Age Breakdown



	% of Jobs	Jobs
14-18	0.2%	34
19-24	7.0%	1,039
25-34	23.8%	3,542
35-44	21.2%	3,153
45-54	20.3%	3,027
55-64	18.9%	2,811
65+	8.6%	1,274

Occupation Race/Ethnicity Breakdown



	% of Jobs	Jobs
White	77.0%	11,460
Asian	10.4%	1,545
Hispanic or Latino	6.6%	977
Black or African American	3.5%	516
Two or More Races	2.4%	363
American Indian or Alaska Native	0.1%	11
Native Hawaiian or Other Pacific Islander	0.0%	7

Occupation Gender Breakdown

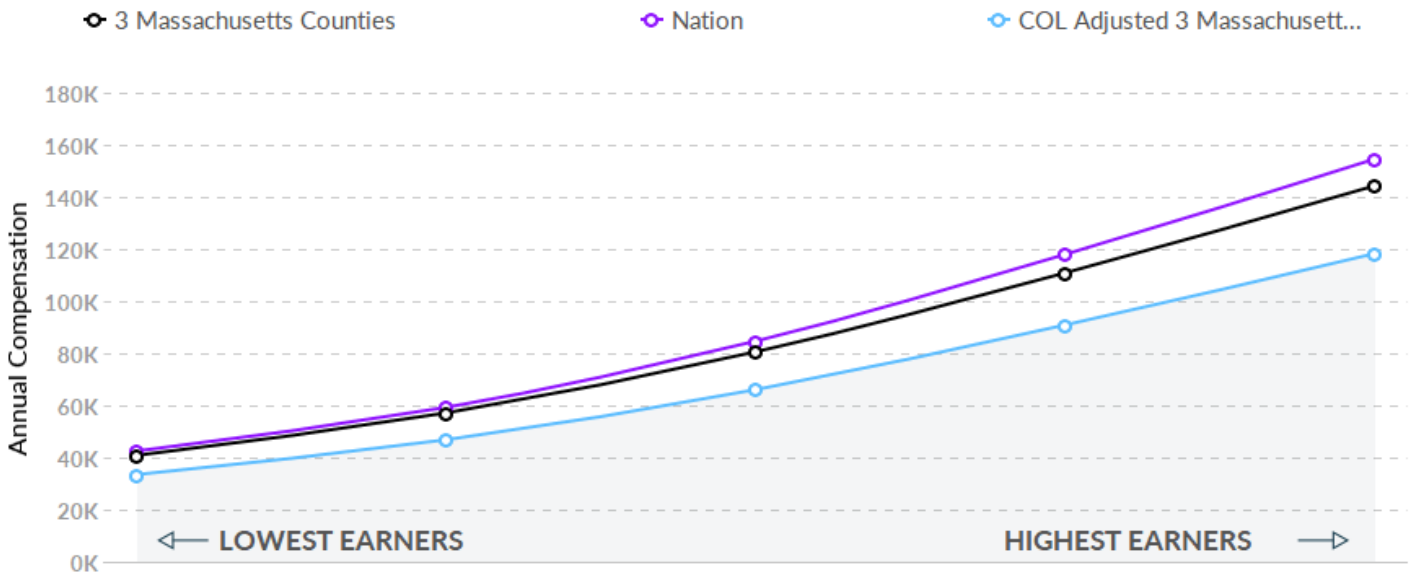


	% of Jobs	Jobs
● Males	67.1%	9,991
● Females	32.9%	4,889

Compensation

Talent Is 5% Cheaper, While the Cost of Living May Make Attraction Difficult

In 2020, the median compensation for your occupations in your area is \$80,525. Based on the national median wage of \$84,621 for this position, this means you will spend about 5% less to employ your occupations here. However, their actual purchasing power will be 22% less than the national median when we adjust for regional cost of living (which is 22% higher than average). This may make it harder to attract talent to the region at this price.



Demand



1,082 Employers Competing

All employers in the region who posted for this job over the last 12 months.



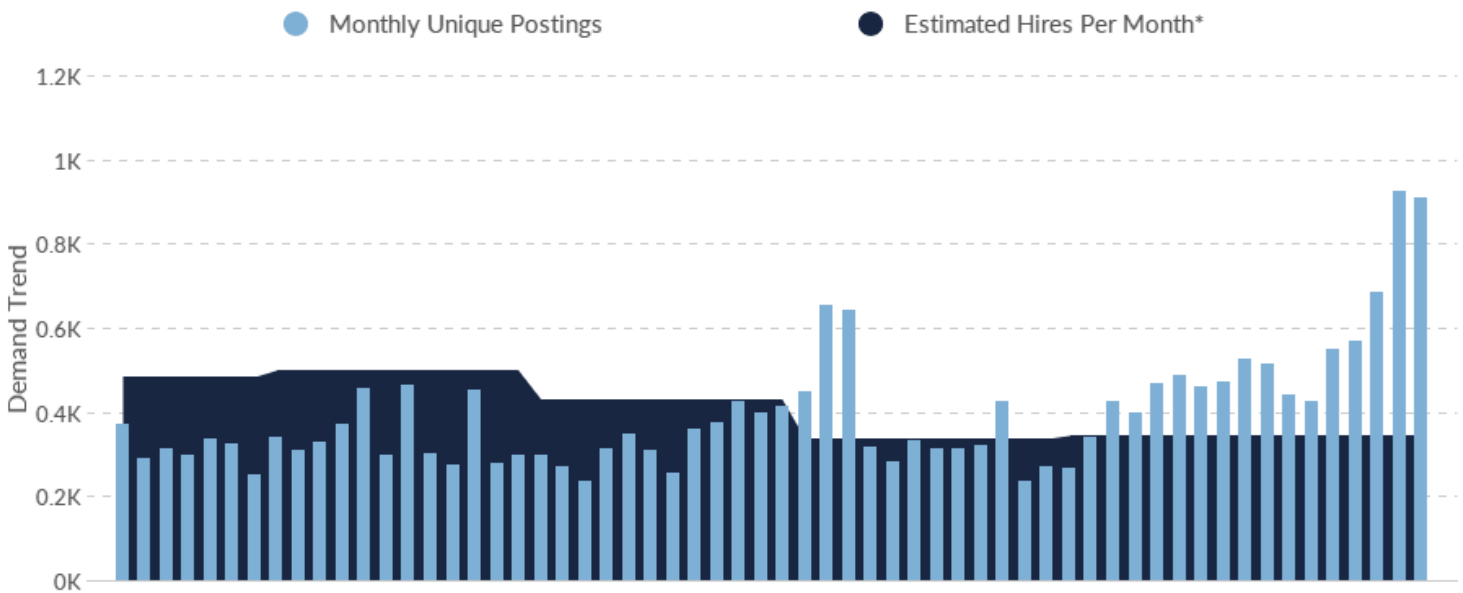
6,966 Unique Job Postings

The number of unique postings for this job over the last 12 months.



3 Out of 5 Positions Filled

The ratio of estimated hires* to unique postings for this job over the last 12 months.



Occupation	Avg Monthly Postings (Jun 2021 - May 2022)	Avg Monthly Hires (Jun 2021 - May 2022)
Software Developers and Software Quality Assurance Analysts and Testers	90	54
Computer Occupations, All Other	57	13
Computer User Support Specialists	44	31
Industrial Engineering Technologists and Technicians	35	6






*A hire is reported by the Quarterly Workforce Indicators when an individual's Social Security Number appears on a company's payroll and was not there the quarter before. Emsi hires are calculated using a combination of Emsi jobs data, information on separation rates from the Bureau of Labor Statistics (BLS), and industry-based hires data from the Census Bureau.






Occupation	Avg Monthly Postings (Jun 2021 - May 2022)	Avg Monthly Hires (Jun 2021 - May 2022)
Database Administrators and Architects	28	6
Data Scientists and Mathematical Science Occupations, All Other	21	2
Computer Systems Analysts	24	17
Web Developers and Digital Interface Designers	26	7
Industrial Engineers	20	16
Clinical, Counseling, and School Psychologists	18	14
Network and Computer Systems Administrators	13	11
Information Security Analysts	13	7
Operations Research Analysts	19	4
Electrical Engineers	16	5
Mechanical Engineers	12	9
Civil Engineers	12	9
Electrical and Electronic Engineering Technologists and Technicians	8	4
Life, Physical, and Social Science Technicians, All Other	7	7
Computer Programmers	7	5
Medical Scientists, Except Epidemiologists	8	14
Computer Network Architects	6	5
Calibration Technologists and Technicians and Engineering Technologists and Technicians, Except Drafters, All Other	5	3
Engineers, All Other	9	3
Chemical Engineers	4	0
Life Scientists, All Other	8	1
Chemists	7	5
Computer Network Support Specialists	4	7
Mechanical Engineering Technologists and Technicians	2	2
Electro-Mechanical and Mechatronics Technologists and Technicians	3	1
Drafters, All Other	3	0

Occupation	Avg Monthly Postings (Jun 2021 - May 2022)	Avg Monthly Hires (Jun 2021 - May 2022)
Environmental Engineers	3	3
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	3	0
Actuaries	2	2
Mechanical Drafters	3	3
Surveying and Mapping Technicians	1	1
Electronics Engineers, Except Computer	3	3
Environmental Science and Protection Technicians, Including Health	2	2
Conservation Scientists	2	1
Environmental Scientists and Specialists, Including Health	2	4
Statisticians	3	3
Biological Scientists, All Other	2	3
Microbiologists	2	2
Agricultural and Food Science Technicians	1	2
Civil Engineering Technologists and Technicians	1	1
Social Scientists and Related Workers, All Other	2	1
Atmospheric and Space Scientists	2	0
Geological and Hydrologic Technicians	1	0
Forest and Conservation Technicians	1	0
Zoologists and Wildlife Biologists	1	0
Survey Researchers	1	1
Biological Technicians	1	10
Urban and Regional Planners	1	2
Electrical and Electronics Drafters	1	0
Social Science Research Assistants	1	5
Architectural and Civil Drafters	1	2

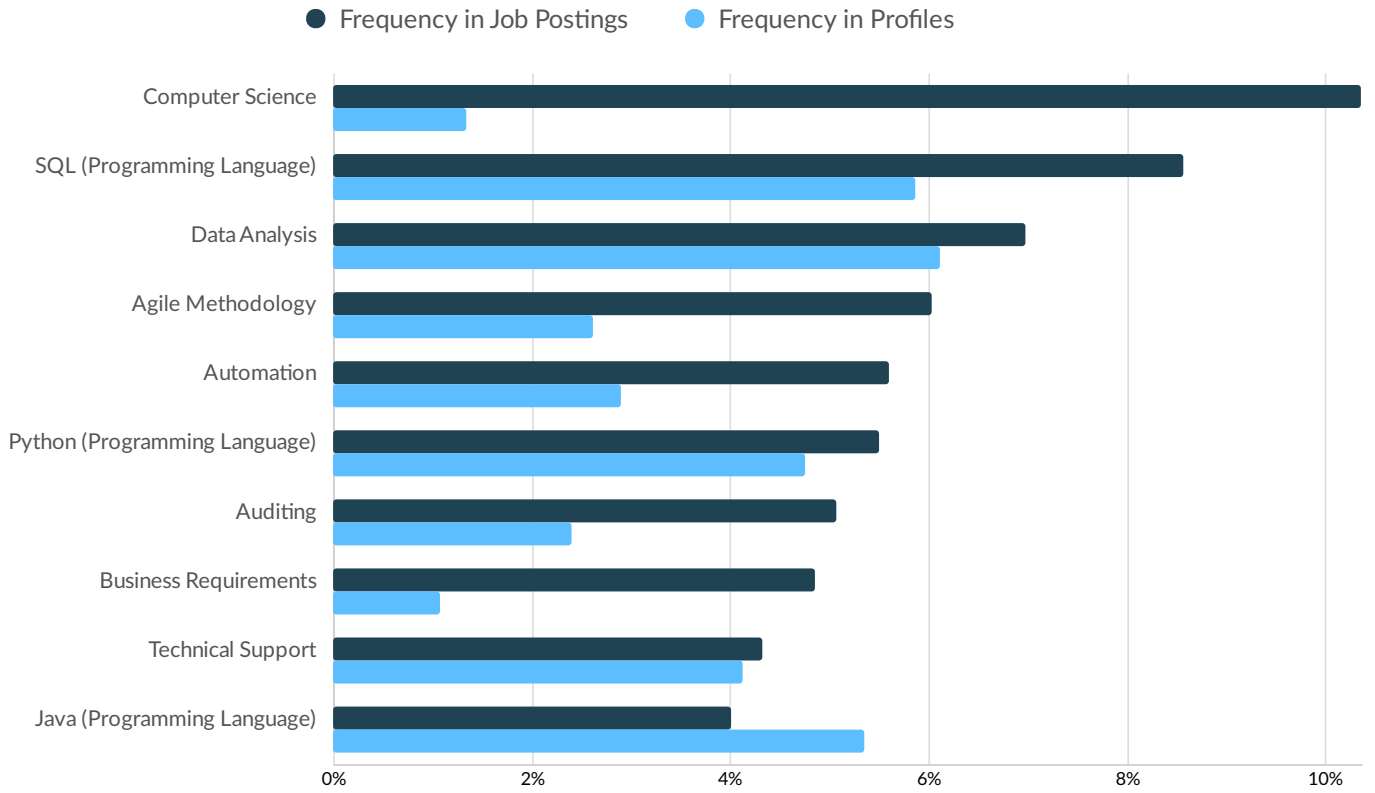
Occupation	Avg Monthly Postings (Jun 2021 - May 2022)	Avg Monthly Hires (Jun 2021 - May 2022)
Materials Scientists	1	0
Epidemiologists	1	0
Computer Hardware Engineers	1	1
Foresters	1	0
Nuclear Engineers	1	0
Political Scientists	0	0
Mathematicians	0	0
Industrial-Organizational Psychologists	1	0
Chemical Technicians	1	3
Physicists	0	0
Computer and Information Research Scientists	1	0
Economists	1	0
Physical Scientists, All Other	0	0
Soil and Plant Scientists	1	0
Materials Engineers	1	0
Psychologists, All Other	0	1
Petroleum Engineers	1	0
Animal Scientists	0	0
Anthropologists and Archeologists	0	0
Geoscientists, Except Hydrologists and Geographers	0	1
Aerospace Engineers	0	0
Sociologists	0	0
Food Scientists and Technologists	0	0
Bioengineers and Biomedical Engineers	0	0
Astronomers	0	0

Occupation	Avg Monthly Postings (Jun 2021 - May 2022)	Avg Monthly Hires (Jun 2021 - May 2022)
Geographers	0	0
Biochemists and Biophysicists	0	2
Mining and Geological Engineers, Including Mining Safety Engineers	0	0
Aerospace Engineering and Operations Technologists and Technicians	0	0
Hydrologists	0	0
Marine Engineers and Naval Architects	0	0
Nuclear Technicians	0	0
Forensic Science Technicians	0	0

Top Companies	Unique Postings
MassMutual	318 
Capital One	313 
University of Massachusetts Am...	300 
CTG	149 
Baystate Health	138 

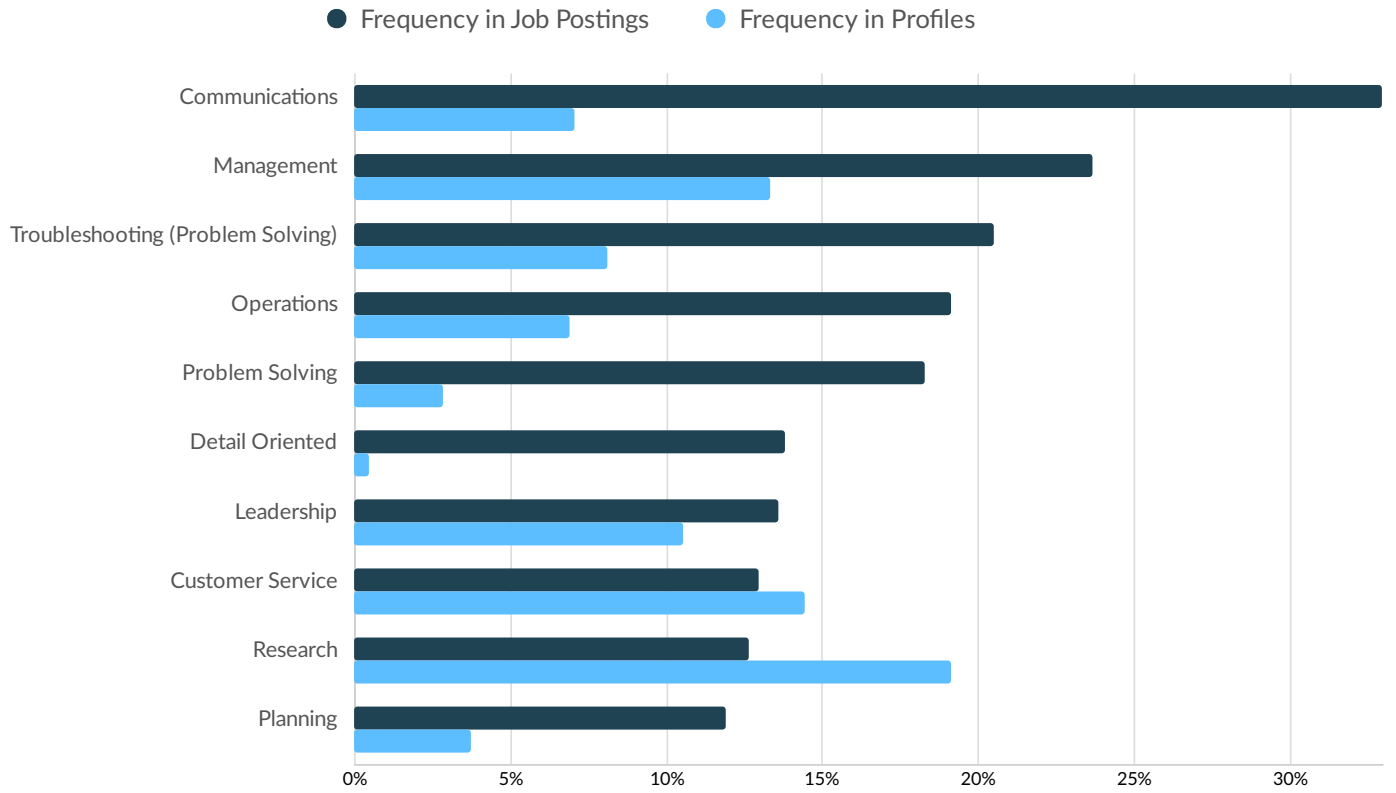
Top Job Titles	Unique Postings
Software Engineers	132 
School Psychologists	101 
Maintenance Technicians	100 
Postdoctoral Research Associates	88 
Electrical Engineers	78 

Top Specialized Skills



Skills	Postings	% of Total Postings	Profiles	% of Total Profiles
Computer Science	98	10%	255	1%
SQL (Programming Language)	81	9%	1,121	6%
Data Analysis	66	7%	1,166	6%
Agile Methodology	57	6%	501	3%
Automation	53	6%	552	3%
Python (Programming Language)	52	5%	909	5%
Auditing	48	5%	459	2%
Business Requirements	46	5%	205	1%
Technical Support	41	4%	786	4%
Java (Programming Language)	38	4%	1,021	5%

Top Common Skills

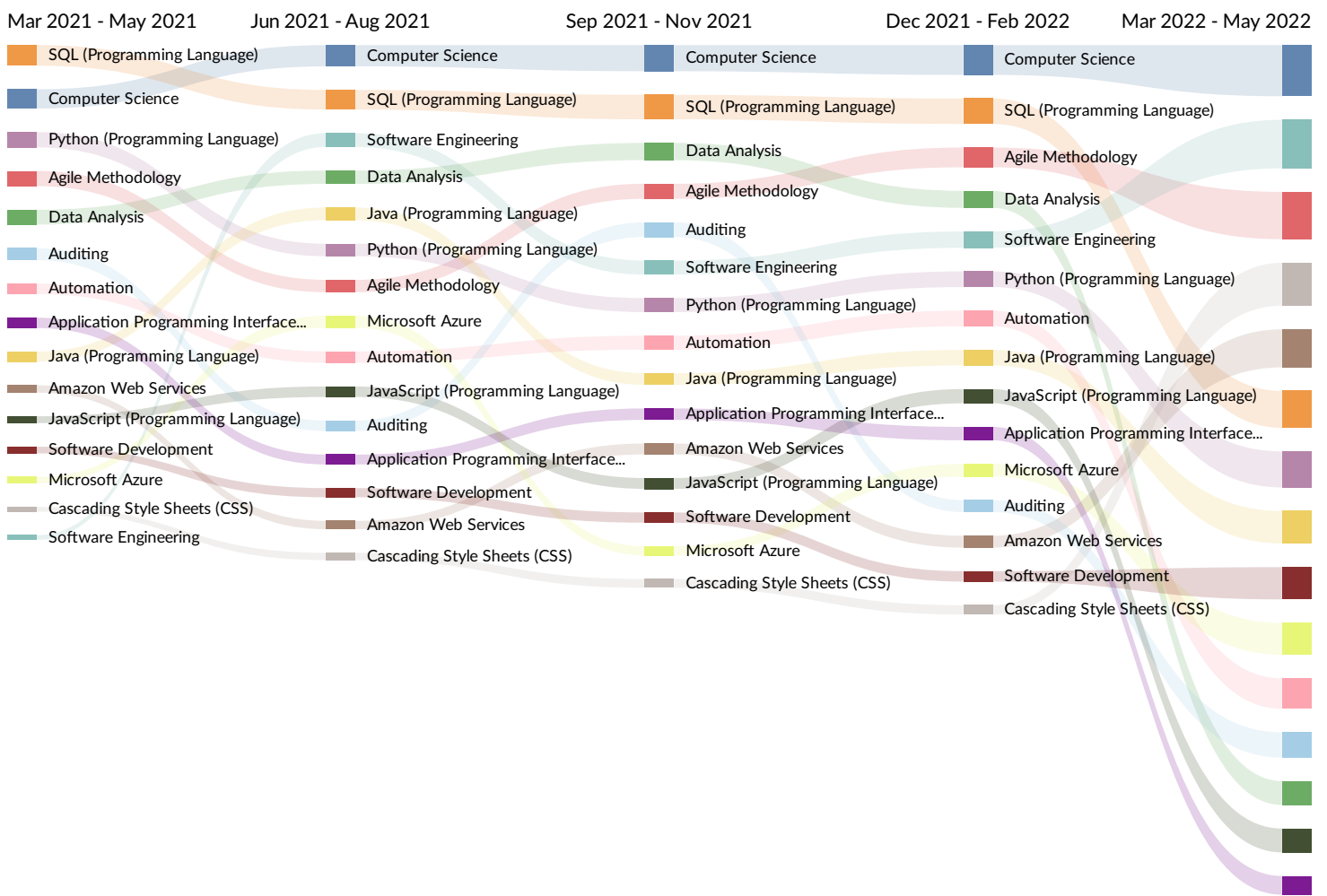


Skills	Postings	% of Total Postings	Profiles	% of Total Profiles
Communications	312	33%	1,352	7%
Management	224	24%	2,544	13%
Troubleshooting (Problem Solving)	194	21%	1,546	8%
Operations	181	19%	1,316	7%
Problem Solving	173	18%	548	3%
Detail Oriented	131	14%	91	0%
Leadership	129	14%	2,012	11%
Customer Service	123	13%	2,763	14%
Research	120	13%	3,654	19%
Planning	113	12%	718	4%

What skills are they posting for?

Top 15 Skills for Your Selected Job Types by Quarter

Skills help us understand the direction an occupation is headed.



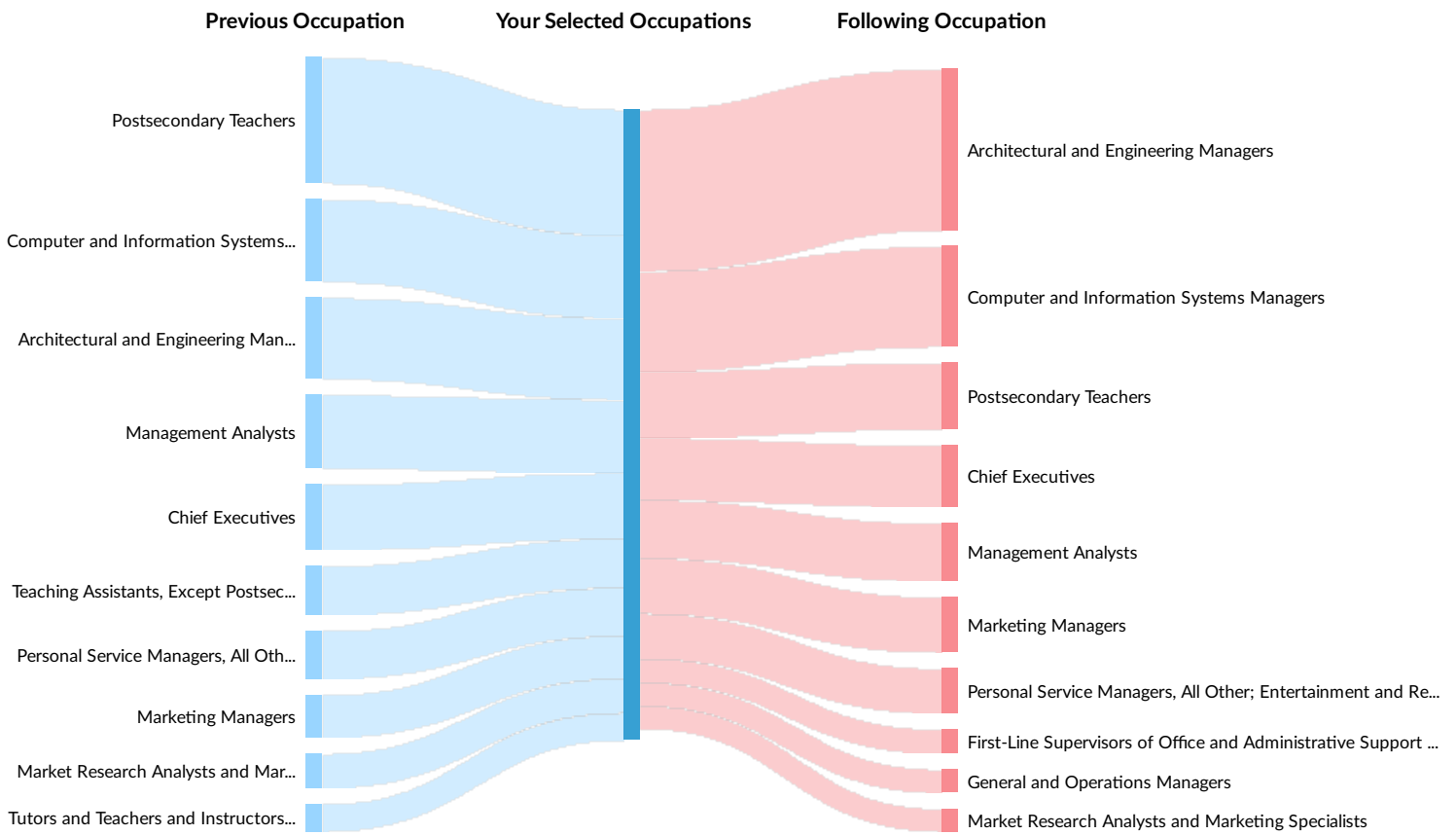
Occupation Gain and Drain

Occupation Gain and Drain

The table below analyzes the profiles of current and past people in your selected occupations. The left column shows job transitions from other occupations to your selected occupations. The right column shows job transitions from your selected occupations to other occupations.

Please note, results are only available at the national level and the 2 and 5 digit SOC level. Other SOC levels will be aggregated up to the 2-digit SOC. Also your selection has been limited to 100 occupations.

The following represents the job transitions of employees in your selected occupations in the United States:



Previous Occupations	Transitions
Postsecondary Teachers	40,976
Computer and Information Systems Managers	26,857
Architectural and Engineering Managers	26,405

Previous Occupations	Transitions
Management Analysts	23,885
Chief Executives	21,279
Teaching Assistants, Except Postsecondary	15,900
Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	15,628
Marketing Managers	13,880
Market Research Analysts and Marketing Specialists	11,158
Tutors and Teachers and Instructors, All Other	8,915
First-Line Supervisors of Office and Administrative Support Workers	8,807
General and Operations Managers	8,686
Project Management Specialists and Business Operations Specialists, All Other	7,687
Sales Engineers	6,658
Graphic Designers	5,573
Customer Service Representatives	5,211
Retail Salespersons	5,211
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	5,062
Sales Managers	4,934
Producers and Directors	3,893
Social and Human Service Assistants	3,778
Financial Managers	3,538
First-Line Supervisors of Production and Operating Workers	3,501
Training and Development Specialists	3,304
Financial and Investment Analysts, Financial Risk Specialists, and Financial Specialists, All Other	2,779
Human Resources Specialists	2,441

Previous Occupations	Transitions
Secondary School Teachers, Except Special and Career/Technical Education	2,420
Public Relations Specialists	2,396
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	2,259
Public Relations and Fundraising Managers	2,176
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	2,119
Accountants and Auditors	1,930
Inspectors, Testers, Sorters, Samplers, and Weighers	1,860
Educational, Guidance, and Career Counselors and Advisors	1,840
First-Line Supervisors of Mechanics, Installers, and Repairers	1,820
Natural Sciences Managers	1,686
Coaches and Scouts	1,644
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1,631
Industrial Production Managers	1,593
Waiters and Waitresses	1,541
Stockers and Order Fillers	1,517
Maintenance and Repair Workers, General	1,413
Executive Secretaries and Executive Administrative Assistants	1,396
Social and Community Service Managers	1,333
Fast Food and Counter Workers	1,300
Cashiers	1,262
Demonstrators and Product Promoters	1,225
Recreation Workers	1,180
Medical and Health Services Managers	1,128
First-Line Supervisors of Retail Sales Workers	1,115

Previous Occupations	Transitions
Editors	1,113
Human Resources Managers	1,059
Construction Managers	1,004
Bookkeeping, Accounting, and Auditing Clerks	932
Security Guards	905
Logisticians	863
First-Line Supervisors of Construction Trades and Extraction Workers	837
Registered Nurses	816
Clinical Laboratory Technologists and Technicians	801
Compliance Officers	787
Buyers and Purchasing Agents	648
Occupational Health and Safety Specialists	256
Following Occupations	Transitions
Architectural and Engineering Managers	52,533
Computer and Information Systems Managers	32,594
Postsecondary Teachers	21,611
Chief Executives	20,132
Management Analysts	18,876
Marketing Managers	17,954
Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	14,642
First-Line Supervisors of Office and Administrative Support Workers	7,789
General and Operations Managers	7,582
Market Research Analysts and Marketing Specialists	7,377
Sales Engineers	6,427

Following Occupations	Transitions
Teaching Assistants, Except Postsecondary	5,926
Project Management Specialists and Business Operations Specialists, All Other	5,688
Producers and Directors	4,613
Sales Managers	4,585
Graphic Designers	3,971
Tutors and Teachers and Instructors, All Other	3,634
Financial Managers	2,976
Architects, Except Landscape and Naval	2,864
Customer Service Representatives	2,858
Training and Development Specialists	2,611
Retail Salespersons	2,458
First-Line Supervisors of Production and Operating Workers	2,396
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	2,361
Human Resources Specialists	2,286
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	2,264
Social and Human Service Assistants	2,049
Public Relations and Fundraising Managers	1,995
Financial and Investment Analysts, Financial Risk Specialists, and Financial Specialists, All Other	1,759
Commercial and Industrial Designers	1,662
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	1,642
Industrial Production Managers	1,523
Secondary School Teachers, Except Special and Career/Technical Education	1,522
Public Relations Specialists	1,451

Following Occupations	Transitions
First-Line Supervisors of Mechanics, Installers, and Repairers	1,429
Natural Sciences Managers	1,326
Education Administrators, Kindergarten through Secondary	1,296
Medical and Health Services Managers	1,241
Executive Secretaries and Executive Administrative Assistants	1,222
Accountants and Auditors	1,163
Social and Community Service Managers	1,144
Technical Writers	1,114
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1,057
Coaches and Scouts	983
Human Resources Managers	937
Inspectors, Testers, Sorters, Samplers, and Weighers	903
Educational, Guidance, and Career Counselors and Advisors	878
Construction Managers	805
Real Estate Sales Agents	792
Editors	789
Maintenance and Repair Workers, General	683
Compliance Officers	588
First-Line Supervisors of Construction Trades and Extraction Workers	578
Registered Nurses	572
Physicians, All Other; and Ophthalmologists, Except Pediatric	533
Logisticians	512
Bookkeeping, Accounting, and Auditing Clerks	485
Buyers and Purchasing Agents	424
Clinical Laboratory Technologists and Technicians	339

Following Occupations	Transitions
Medical Assistants	312
Occupational Health and Safety Specialists	186

Graduate Pipeline



264 Programs

765 programs can train for this job, while only 264 programs have produced completers in this region.



12,918 Completions (2020)

The completions from all regional institutions for all degree types.



1,284 Openings (2020)

The average number of openings for an occupation in the region is 67.

Top Programs	Completions (2020)
Business Administration and Ma...	945
Psychology, General	792
Liberal Arts and Sciences/Libera...	737
Computer Science	700
Biology/Biological Sciences, Ge...	577

Top Schools	Completions (2020)
University of Massachusetts-Am...	6,733
Westfield State University	1,006
Western New England University	743
Smith College	737
Bay Path University	568

Appendix A (Occupations)

Code	Description	Code	Description
15-1211	Computer Systems Analysts	15-2011	Actuaries
15-1212	Information Security Analysts	15-2021	Mathematicians
15-1221	Computer and Information Research Scientists	15-2031	Operations Research Analysts
15-1231	Computer Network Support Specialists	15-2041	Statisticians
15-1232	Computer User Support Specialists	15-2098	Data Scientists and Mathematical Science Occupations, All Other
15-1241	Computer Network Architects	17-2011	Aerospace Engineers
15-1244	Network and Computer Systems Administrators	17-2021	Agricultural Engineers
15-1245	Database Administrators and Architects	17-2031	Bioengineers and Biomedical Engineers
15-1251	Computer Programmers	17-2041	Chemical Engineers
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	17-2051	Civil Engineers
15-1257	Web Developers and Digital Interface Designers	17-2061	Computer Hardware Engineers
15-1299	Computer Occupations, All Other	17-2071	Electrical Engineers

Code	Description	Code	Description
17-2072	Electronics Engineers, Except Computer	17-3012	Electrical and Electronics Drafters
17-2081	Environmental Engineers	17-3013	Mechanical Drafters
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	17-3019	Drafters, All Other
17-2112	Industrial Engineers	17-3021	Aerospace Engineering and Operations Technologists and Technicians
17-2121	Marine Engineers and Naval Architects	17-3022	Civil Engineering Technologists and Technicians
17-2131	Materials Engineers	17-3023	Electrical and Electronic Engineering Technologists and Technicians
17-2141	Mechanical Engineers	17-3024	Electro-Mechanical and Mechatronics Technologists and Technicians
17-2151	Mining and Geological Engineers, Including Mining Safety Engineers	17-3025	Environmental Engineering Technologists and Technicians
17-2161	Nuclear Engineers	17-3026	Industrial Engineering Technologists and Technicians
17-2171	Petroleum Engineers	17-3027	Mechanical Engineering Technologists and Technicians
17-2199	Engineers, All Other	17-3031	Surveying and Mapping Technicians
17-3011	Architectural and Civil Drafters	17-3098	Calibration Technologists and Technicians and Engineering Technologists and Technicians, Except Drafters, All Other

Code	Description
19-1011	Animal Scientists
19-1012	Food Scientists and Technologists
19-1013	Soil and Plant Scientists
19-1021	Biochemists and Biophysicists
19-1022	Microbiologists
19-1023	Zoologists and Wildlife Biologists
19-1029	Biological Scientists, All Other
19-1031	Conservation Scientists
19-1032	Foresters
19-1041	Epidemiologists
19-1042	Medical Scientists, Except Epidemiologists
19-1099	Life Scientists, All Other

Code	Description
19-2011	Astronomers
19-2012	Physicists
19-2021	Atmospheric and Space Scientists
19-2031	Chemists
19-2032	Materials Scientists
19-2041	Environmental Scientists and Specialists, Including Health
19-2042	Geoscientists, Except Hydrologists and Geographers
19-2043	Hydrologists
19-2099	Physical Scientists, All Other
19-3011	Economists
19-3022	Survey Researchers
19-3031	Clinical, Counseling, and School Psychologists

Code	Description
19-3032	Industrial-Organizational Psychologists
19-3039	Psychologists, All Other
19-3041	Sociologists
19-3051	Urban and Regional Planners
19-3091	Anthropologists and Archeologists
19-3092	Geographers
19-3093	Historians
19-3094	Political Scientists
19-3099	Social Scientists and Related Workers, All Other
19-4011	Agricultural and Food Science Technicians

Code	Description
19-4021	Biological Technicians
19-4031	Chemical Technicians
19-4042	Environmental Science and Protection Technicians, Including Health
19-4045	Geological and Hydrologic Technicians
19-4051	Nuclear Technicians
19-4061	Social Science Research Assistants
19-4071	Forest and Conservation Technicians
19-4092	Forensic Science Technicians
19-4099	Life, Physical, and Social Science Technicians, All Other