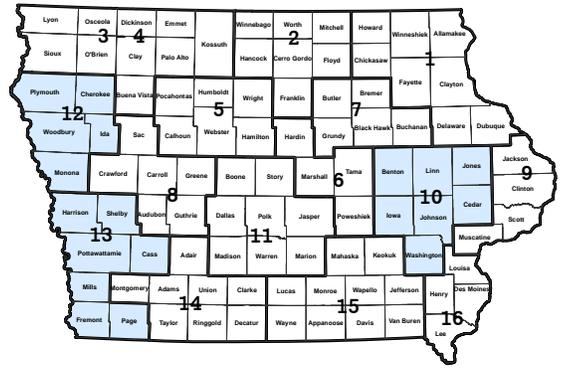


REGIONS 10, 12, 13

STEM JOBS



STEM OCCUPATIONS BY GROUP REGION 10

Occupational Title	Employment ⁽¹⁾			\$ ⁽²⁾		Career Preparation ⁽³⁾			Top Skills ⁽⁴⁾ (L-R in order of significance)												
	2012 Est	2022 Proj	Annual Growth Rate (%)	2014 Mean Wage	2014 Mean Salary	Educ	Work Exp	Job Training													
Total, All Occupations	279,110	312,845	1.2	21.51	44,745																
Management Occupations	25,315	25,535	0.1	44.82	93,233																
Construction Mgrs	395	480	2.2	36.15	75,198	BA	N	M	R4	B2	B3	R3	B9								
Medical & Health Services Mgrs	1,020	1,210	1.9	38.23	79,515	BA	N	N	B7	B9	B2	B3	SY1								
Computer & Information Systems Mgrs	570	665	1.7	56.53	117,577	BA	> 5	N	B7	B2	B3	C1	B6	B10							
Financial Mgrs	1,035	1,190	1.5	56.21	116,916	BA	> 5	N	C1	B3	B2	B7	SY1	B9	B10						
Architectural & Engineering Mgrs	585	585	0.0	N.A.	N.A.	BA	> 5	N	B2	B7	B9	B10	C1	SO1	R3	B6	T6	R4			
Industrial Production Mgrs	600	595	-0.1	42.99	89,410	BA	> 5	N	SO1	B2	B6	R3	R4								
Farmers, Ranchers, & Other Agricultural Mgrs	11,430	10,160	-1.1	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4							
Business & Financial Operations Occupations	13,065	14,910	1.4	29.50	61,356																
Personal Financial Advisors	195	260	3.3	43.99	91,503	BA	N	N	B3	B9	B7	SY1	B10								
Cost Estimators	340	410	2.1	27.54	57,280	BA	N	N	B5	B3	B9	B2	SY1								
Accountants & Auditors	2,055	2,390	1.6	28.72	59,738	BA	N	N	B2	B5	B7	B10	B9								
Financial Analysts	395	425	0.9	35.80	74,474	BA	N	N	B3	B7	B10	B2	C1								
Computer & Mathematical Occupations	8,020	9,115	1.4	34.93	72,657																
Actuaries	110	160	4.5	31.85	66,250	BA	N	L	B5	B3	SY1	C1	B7								
Computer Systems Analysts	625	785	2.6	36.84	76,619	BA	N	N	B3	B2	B7	B9	SY2								
Computer User Support Specialists	735	910	2.4	21.85	45,453	SC	N	M	B2	B9	B7	B3	B10								
Operations Research Analysts	240	280	1.7	33.89	70,493	BA	N	N	B3	B5	C1	B7	SY1	SY2	SY3						
Software Developers, Applications	1,920	2,175	1.3	37.28	77,543	BA	N	N	C1	T7	SY2	SY1	SY3								
Computer Network Architects	310	345	1.1	42.24	87,855	BA	> 5	N	B2	T6	SY2	B1	C1								
Database Administrators	270	295	1.1	33.64	69,978	BA	< 5	N	C1	B3	B6	B1	B2	B7							
Network & Computer Systems Administrators	855	940	1.0	32.54	67,677	BA	N	N	B3	B7	SY2	C1	SY1	B6	SY3						
Computer Programmers	635	695	0.9	32.64	67,898	BA	N	N	T7	B7	C1	B3	B2	T8							
Software Developers, Systems Software	1,300	1,385	0.7	N.A.	N.A.	BA	N	N	B3	B2	T7	B7	C1								
Architecture & Engineering Occupations	6,365	6,460	0.2	33.28	69,225																
Civil Engineers	370	450	2.2	39.98	83,164	BA	N	N	C1	B3	SY1	B5	T6	B7							
Computer Hardware Engineers	325	340	0.3	41.43	86,179	BA	N	N	B9	B2	B7	B3	B1	C1							
Electrical Engineers	885	905	0.2	39.00	81,123	BA	N	N	B3	B7	B2	C1	B10								
Industrial Engineers	640	645	0.1	34.40	71,550	BA	N	N	B7	B2	C1	B3	B10								
Aerospace Engineers	500	500	0.0	N.A.	N.A.	BA	N	N	B2	B3	C1	B9	SY1	B7							
Electrical & Electronics Engineering Technicians	530	525	-0.1	28.65	59,588	AS	N	N	C1	B7	R4	B2	B3	B9							
Mechanical Engineers	735	720	-0.2	37.76	78,539	BA	N	N	C1	B3	B2	SY1	B5	B7							
Aerospace Engineering & Operations Technicians	370	350	-0.4	N.A.	N.A.	AS	N	N	B2	B3	T5	B9	C1	T8	B7						
Life, Physical, & Social Science Occupations	3,765	4,210	1.2	26.09	54,260																
Medical Scientists, Ex Epidemiologists	845	955	1.3	N.A.	N.A.	DP	N	N	B8	B3	B7	C1	B9								
Chemists	265	300	1.3	33.48	69,646	BA	N	N	B8	B7	B2	B3	C1	B9							
Biological Technicians	1,040	1,175	1.3	N.A.	N.A.	BA	N	N	B7	B2	B3	B8	C1								
Education, Training, & Library Occupations	20,200	22,730	1.3	27.98	58,207																
Health Specialties Teachers, Postsecondary	1,850	2,510	3.6	N.A.	N.A.	DP	< 5	N	B7	B9	SO2	B3	B2	C1	B4	B10					
Nursing Instructors & Teachers, Postsecondary	235	315	3.4	N.A.	N.A.	MA	< 5	N	B9	B7	B1	B2	SO2								
Arts, Design, Entertainment, Sports, & Media Occupations	4,010	4,520	1.3	20.43	42,492																
Graphic Designers	475	535	1.3	20.49	42,609	BA	N	N	B2	T6	B9	B10	B3	B7							
Healthcare Practitioners & Technical Occupations	15,500	18,320	1.8	36.10	75,078																
Diagnostic Medical Sonographers	130	195	5.0	29.18	60,685	AS	N	N	B9	B2	B7	SO6	B3	B6	B8	R4					
Physician Assistants	170	225	3.2	44.17	91,871	MA	N	N	B2	B3	B9	B7	SY1	B6	SO6						
Physical Therapists	325	430	3.2	37.41	77,822	DP	N	N	B2	B9	B7	B3	SO6	R4							
Dental Hygienists	365	480	3.2	33.33	69,327	AS	N	N	B2	B9	B3	B7	SO6								
Occupational Therapists	195	255	3.1	36.67	76,267	MA	N	N	B2	B7	B9	B3	SO5	SO6							
Nurse Practitioners	230	295	2.8	42.13	87,630	MA	N	N	B2	B7	B8	B9	B3	B6	SO6						
Licensed Practical & Licensed Vocational Nurses	820	1,025	2.5	18.75	38,995	PS	N	N	B2	B9	B3	B7	SO1	SO5							
Medical & Clinical Laboratory Technicians	265	325	2.3	22.47	46,732	AS	N	N	B2	B3	B7	B8	T5	B9							
Speech-Language Pathologists	245	300	2.2	33.59	69,869	MA	N	N	B2	SO6	B9	B3	B7	B10							
Dentists, General	225	265	2.0	86.13	179,158	DP	N	N	B3	SY1	B2	B6	SO6	B9							
Pharmacy Technicians	750	900	2.0	15.10	31,415	HS	N	M	B2	B7	B9	B3	SO5	SO6							
Registered Nurses	6,070	7,090	1.7	27.56	57,320	AS	N	N	SO6	B2	SO1	B9	B3	B7	SO5						
Emergency Medical Technicians & Paramedics	260	305	1.7	16.94	35,227	PS	N	N	B3	SO5	B2	SO6	B9								
Pharmacists	685	800	1.7	49.51	102,985	DP	N	N	B2	B7	B1	B3	B9								
Respiratory Therapists	240	280	1.7	24.04	49,997	AS	N	N	B2	B3	B6	B9	B1	SO5	SO6						
Radiologic Technologists	370	430	1.6	23.14	48,126	AS	N	N	B9	B2	T4	SO5	SO1	B6	T5	SO6					
Family & General Practitioners	340	395	1.6	97.36	202,499	DP	N	I	B2	B3	B9	B8	SO6								
Medical Records & Health Information Technicians	300	350	1.5	19.00	39,520	PS	N	N	B2	B7	B9	B3	B6	R4							
Surgeons	390	440	1.3	N.A.	N.A.	DP	N	I	B2	B3	B7	B1	C1	SY1	B8	B9					
Medical & Clinical Laboratory Technologists	335	360	0.9	27.27	56,713	BA	N	N	B2	B8	B3	B7	SY1	B6	B9						
Healthcare Support Occupations	6,765	8,280	2.2	14.36	29,865																
Physical Therapist Assistants	165	235	4.2	23.56	49,006	AS	N	N	B9	B2	SO6	B6	SO1	B3	B7	B10					
Medical Assistants	685	860	2.6	15.43	32,088	PS	N	N	B2	B9	SO6	B6	B7								
Dental Assistants	515	625	2.1	18.44	38,361	PS	N	N	B9	B2	B7	SO5	B3								
Food Preparation & Serving Related Occupations	20,325	22,785	1.2	9.69	20,160																
First-Line Supvs of Food Preparation & Serving Wkrs	1,435	1,660	1.6	14.09	29,317	HS	< 5	N	B9	B2	SO1	SO5	R3	B6							

STEM OCCUPATIONS BY GROUP

REGION 12 Occupational Title	Employment ^[1]			\$ ^[2]		Career Preparation ^[3]			Top Skills ^[4] (L-R in order of significance)							
	2012 Est	2022 Proj	Annual Growth Rate (%)	2014 Mean Wage	2014 Mean Salary	Educ	Work Exp	Job Training								
Total, All Occupations	86,755	96,010	1.1	17.71	36,839											
Management Occupations	8,275	8,155	-0.2	39.28	81,692											
Financial Managers	255	280	1.0	39.84	82,866	BA	> 5	N	C1	B3	B2	B7	SY1	B9	B10	
Farmers, Ranchers, & Other Agricultural Managers	4,745	4,240	-1.1	36.08	75,056	HS	> 5	N	B3	B9	B2	SY1	B7	R4		
Business & Financial Operations Occupations	2,565	2,835	1.1	25.76	53,574											
Accountants & Auditors	420	475	1.3	26.32	54,746	BA	N	N	B2	B5	B7	B10	B9			
Education, Training, & Library Occupations	4,825	5,285	1.0	20.29	42,212											
Health Specialties Teachers, Postsecondary	165	220	3.3	N.A.	N.A.	DP	< 5	N	B7	B9	SO2	B3	B2	C1	B4	
Healthcare Practitioners & Technical Occupations	4,705	5,630	2.0	30.37	63,170											
Licensed Practical & Licensed Vocational Nurses	255	315	2.4	19.04	39,597	PS	N	N	B2	B9	B3	B7	SO1	SO5		
Registered Nurses	1,890	2,215	1.7	23.24	48,349	AS	N	N	SO6	B2	SO1	B9	B3	B7	SO5	
Healthcare Support Occupations	2,355	2,795	1.9	12.92	26,879											
Medical Assistants	245	305	2.7	13.21	27,478	PS	N	N	B2	B9	SO6	B6	B7			
Food Preparation & Serving Related Occupations	7,120	7,880	1.1	9.43	19,621											
First-Line Supervisors of Food Preparation & Serving Workers	470	535	1.3	13.91	28,923	HS	< 5	N	B9	B2	SO1	SO5	R3	B6		
Cooks, Institution & Cafeteria	520	580	1.2	10.63	22,107	< HS	N	S	R4	B2	B3	B6	B7	SO5		
Construction & Extraction Occupations	4,185	5,150	2.3	18.19	37,831											
Plumbers, Pipefitters, & Steamfitters	475	585	2.3	20.69	43,033	HS	N	A	SO1	R4	B3	T5	B2	SY1	B6	
Electricians	270	315	1.7	22.25	46,272	HS	N	A	T11	T9	B2	B3	T5	T8		
Installation, Maintenance, & Repair Occupations	4,050	4,495	1.1	20.05	41,712											
Heating, Air Conditioning, & Refrigeration Mechanics & Installers	210	260	2.4	21.96	45,672	PS	N	L	T3	T11	T9	T1	T5			
Automotive Service Technicians & Mechanics	500	545	0.9	19.42	40,403	HS	N	L	T1	T9	T11	T2	T8			
Production Occupations	8,900	8,810	0.9	15.61	32,469											
Welders, Cutters, Solderers, & Brazers	375	400	0.8	16.86	35,073	HS	N	M	B3	B2	B6	SY1	T4	T5		

REGION 13

Total, All Occupations	81,595	90,170	1.1	16.82	34,992											
Management Occupations	8,305	8,105	-0.2	33.78	70,255											
Farmers, Ranchers, & Other Agricultural Managers	5,100	4,595	-1.0	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4		
Business & Financial Operations Occupations	2,250	2,515	1.2	27.94	58,111											
Healthcare Practitioners & Technical Occupations	4,160	4,875	1.7	29.47	61,292											
Licensed Practical & Licensed Vocational Nurses	505	595	1.8	18.79	39,087	PS	N	N	B2	B9	B3	B7	SO1	SO5		
Registered Nurses	1,395	1,590	1.4	26.25	54,607	AS	N	N	SO6	B2	SO1	B9	B3	B7	SO5	
Pharmacists	230	255	1.3	45.37	94,370	DP	N	N	B2	B7	B1	B3	B9			
Construction & Extraction Occupations	3,480	4,280	2.3	18.00	37,439											
Plumbers, Pipefitters, & Steamfitters	255	320	2.5	17.53	36,454	HS	N	A	SO1	R4	B3	T5	B2	SY1	B6	
Electricians	195	240	2.3	20.62	42,884	HS	N	A	T11	T9	B2	B3	T5	T8		
Installation, Maintenance, & Repair Occupations	3,815	4,260	1.2	18.50	38,489											
Heating, Air Conditioning, & Refrigeration Mechanics & Installers	205	265	2.9	16.46	34,233	PS	N	L	T3	T11	T9	T1	T5			
Farm Equipment Mechanics & Service Technicians	260	290	1.2	16.74	34,818	HS	N	L	T9	T1	T11	T8	B3	T4	T5	
Automotive Service Technicians & Mechanics	505	550	0.9	18.92	39,356	HS	N	L	T1	T9	T11	T2	T8			
Production Occupations	6,200	6,785	0.9	15.02	31,233											
Welders, Cutters, Solderers, & Brazers	405	445	1.0	15.60	32,438	HS	N	M	B3	B2	B6	SY1	T4	T5		

Legend/Methodology/Selection Criteria:

The acronym **STEM**, as used in this publication, is a combined *occupational group* made up of occupations (residual or undefined occupations were not included) from existing and/or established occupational groups adopted from the Office of Management and Budget's (OMB) Standard Occupational Classification (SOC) Manual. The Occupational Information Network (O*NET) and Iowa Workforce Development determined those occupations having a preponderance of tools and skills from **Science, Technology, Engineering, and/or Mathematics**.

[1] Employment includes: **Estimated** = Estimation of labor force by occupation (rounded); **Projected** = Projection of future labor force by occupation (rounded); and **Annual Growth Rate (%)** = Ten year growth rate (not shown) divided by ten.

[2] Mean (Average) Wage & Salary (\$) = dividing the estimated total pay for an occupation by its weighted employment. Pay provided in wage (hourly) and salary (annual) formats; Missing pay data may be derived from calculation or proration of reported wage/salary data if available (i.e., legislator pay based on 4-months service, education and coaching pay based on 12-months service); Occupations with limited or no compensation data (which inhibits either wage or salary calculated derivations) are subsequently omitted from any methodological calculations.

[3] Career Preparation determined by the U.S. Department of Labor's Bureau of Labor Statistics (BLS). Alternative employment pathways may exist as well as differing educational, training, or licensing requirements per state. Iowa requirements are used in this publication when available. Career Preparation areas/levels include:

Education (typical education level needed to enter an occupation): DP = Doctoral or Professional degree; MA = Master's degree; BA = Bachelor's degree; AS = Associate's degree; PS = Postsecondary non-degree award; SC = Some college, no degree; HS = High school diploma or equivalent; < HS = Less than high school; **Work Experience** (typical work experience level commonly considered necessary for entry into an occupation, or substitutable for formal types of training): > 5 = 5 years or more; < 5 = Less than 5 years; N = None; and **Job Training** (typical on-the-job training level needed to attain occupational competency): I = Internship/residency; A = Apprenticeship; L = Long-term on-the-job training; M = Moderate-term on-the-job training; S = Short-term on-the-job training; None = N.

[4] Top Skills refers to the top five (or more if tied) most important skills for a particular occupation as identified by sampled workers' questionnaire responses conducted by occupational analysts of the U.S. Department of Labor's Occupational Information Network (O*NET). These include: **Basic Skills**: B1 = Active Learning; B2 = Active Listening; B3 = Critical Thinking; B4 = Learning Strategies; B5 = Mathematics; B6 = Monitoring; B7 = Reading Comprehension; B8 = Science; B9 = Speaking; B10 = Writing; **Complex Problem Solving Skills**: C1 = Complex Problem Solving; **Resource Management Skills**: R1 = Management of Financial Resources; R2 = Management of Material Resources; R3 = Management of Personnel Resources; R4 = Time Management; **Social Skills**: SO1 = Coordination; SO2 = Instructing; SO3 = Negotiation; SO4 = Persuasion; SO5 = Service Orientation; SO6 = Social Perceptiveness; **Systems Skills**: SY1 = Judgment and Decision Making; SY2 = Systems Analysis; SY3 = Systems Evaluation; and **Technical Skills**: T1 = Equipment Maintenance; T2 = Equipment Selection; T3 = Installation; T4 = Operation and Control; T5 = Operation Monitoring; T6 = Operations Analysis; T7 = Programming; T8 = Quality Control Analysis; T9 = Repairing; T10 = Technology Design; T11 = Troubleshooting. N.A. = Not Available.

Sources:

Education/Work Experience/Job Training: Bureau of Labor Statistics, U.S. Department of Labor; **Employment**: 2012-2022 Occupational Projections estimates based on 2012 annual industry employment data and 2013 2nd quarter occupational staffing pattern data, Labor Market and Workforce Information Division, Iowa Workforce Development; **Skills**: Occupational Information Network (O*NET), Employment and Training Administration, U.S. Department of Labor; **Wages**: 2014 Iowa Wage Survey estimates (based on 2013 2nd quarter occupational wage data updated from 2014 2nd quarter using Employment Cost Index), Labor Market and Workforce Information Division, Iowa Workforce Development.

This publication was produced by the Labor Market and Workforce Information Division of Iowa Workforce Development. Revisions and/or corrections made when necessary. Inquiries may be directed to Brent Paulson at 515.281.3439 or Brent.Paulson@iwd.iowa.gov. Visit <http://iwin.iowaworkforce.org/> to obtain the latest workforce data and trends including this document under the **Publications** tab. Published 10/2014.