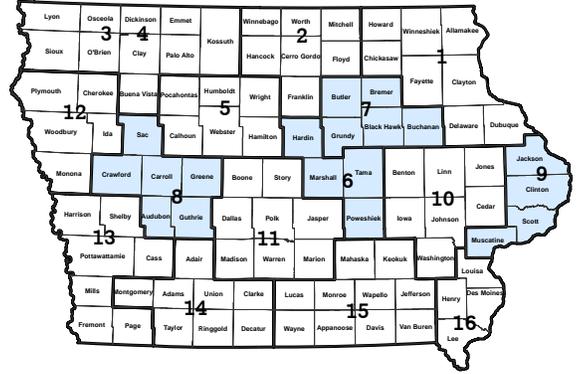


REGIONS 6, 7, 8, 9

STEM JOBS



STEM OCCUPATIONS BY GROUP

REGION 6

Occupational Title	Employment ^[1]			\$ ^[2]		Career Preparation ^[3]			Top Skills ^[4] (L-R in order of significance)
	2012 Est	2022 Proj	Annual Growth Rate (%)	2015 Mean Wage	2015 Mean Salary	Educ	Work Exp	Job Training	
Total, All Occupations	49,535	53,615	0.8	17.89	37,208				
Management Occupations	5,415	5,275	-0.3	38.79	80,687				
Farmers, Ranchers, & Other Agricultural Managers	3,110	2,820	-0.9	N.A.	N.A.	HS	> 5	N	B3 B9 B2 SY1 B7 R4
Healthcare Practitioners & Technical Occupations	2,070	2,405	1.6	31.08	64,636				
Registered Nurses	730	840	1.5	25.64	53,326	AS	N	N	SO6 B2 SO1 B9 B3 B7 SO5
Licensed Practical & Licensed Vocational Nurses	375	440	1.6	18.25	37,961	PS	N	N	B2 B9 B3 B7 SO1 SO5
Food Preparation & Serving Related Occupations	3,665	4,020	1.0	9.86	20,519				
First-Line Supervisors of Food Preparation & Serving Workers	280	310	1.1	12.13	25,230	HS	< 5	N	B9 B2 SO1 SO5 R3 B6
Cooks, Institution & Cafeteria	255	285	1.0	11.58	24,078	< HS	N	S	R4 B2 B3 B6 B7 SO5
Construction & Extraction Occupations	2,250	2,625	1.7	20.03	41,668				
Electricians	230	265	1.5	28.63	59,541	HS	N	A	T11 T9 B2 B3 T5 T8
Production Occupations	6,165	6,585	0.7	14.54	30,248				
Weld/Solder/Braze Machine Setters, Operators, & Tenders	275	290	0.5	N.A.	N.A.	HS	N	M	T5 B2 B3 B6 T4 B9

REGION 7

Total, All Occupations	117,145	128,695	1.0	18.72	38,942				
Management Occupations	10,690	10,580	-0.1	40.07	83,340				
Financial Managers	340	370	0.9	48.29	100,444	B	> 5	N	C1 B3 B2 B7 SY1 B9 B10
Farmers, Ranchers, & Other Agricultural Managers	5,585	4,995	-1.1	N.A.	N.A.	HS	> 5	N	B3 B9 B2 SY1 B7 R4
Construction Managers	225	265	1.8	35.05	72,909	B	N	M	R4 B2 B3 R3 B9
Medical & Health Services Managers	340	400	1.8	38.27	79,595	B	N	N	B7 B9 B2 B3 SY1
Business & Financial Operations Occupations	4,100	4,580	1.2	27.26	56,704				
Cost Estimators	155	185	1.9	27.03	56,232	B	N	N	B5 B3 B9 B2 SY1
Accountants & Auditors	605	690	1.4	29.73	61,835	B	N	N	B2 B5 B7 B10 B9
Computer & Mathematical Occupations	1,375	1,580	1.5	29.42	61,186				
Computer Systems Analysts	225	270	2.0	34.96	72,707	B	N	N	B3 B2 B7 B9 SY2
Architecture & Engineering Occupations	1,270	1,370	0.8	32.30	67,177				
Industrial Engineers	245	250	0.2	34.47	71,688	B	N	N	B7 B2 C1 B3 B10
Mechanical Engineers	200	215	0.8	35.13	73,079	B	N	N	C1 B3 B2 SY1 B5 B7
Healthcare Practitioners & Technical Occupations	5,795	6,805	1.7	30.16	62,742				
Physical Therapists	145	190	2.8	38.10	79,252	DP	N	N	B2 B9 B7 B3 SO6 R4
Registered Nurses	2,070	2,420	1.7	25.72	53,487	AS	N	N	SO6 B2 SO1 B9 B3 B7 SO5
Medical & Clinical Laboratory Technicians	175	215	2.3	N.A.	N.A.	AS	N	N	B2 B3 B7 B8 T5 B9
Licensed Practical & Licensed Vocational Nurses	550	640	1.6	17.82	37,059	PS	N	N	B2 B9 B3 B7 SO1 SO5
Healthcare Support Occupations	3,085	3,630	1.8	13.04	27,121				
Medical Assistants	280	330	2.0	14.33	29,809	PS	N	N	B2 B9 SO6 B6 B7
Food Preparation & Serving Related Occupations	8,900	9,915	1.1	9.50	19,757				
First-Line Supervisors of Food Preparation & Serving Workers	585	665	1.4	12.98	26,990	HS	< 5	N	B9 B2 SO1 SO5 R3 B6
Cooks, Institution & Cafeteria	460	510	1.2	11.10	23,092	< HS	N	S	R4 B2 B3 B6 B7 SO5
Construction & Extraction Occupations	5,210	6,305	2.1	19.54	40,643				
Electricians	375	425	1.3	20.57	42,788	HS	N	A	T11 T9 B2 B3 T5 T8
Plumbers, Pipefitters, & Steamfitters	465	560	2.0	18.63	38,752	HS	N	A	SO1 R4 B3 T5 B2 SY1 B6 B9
Installation, Maintenance, & Repair Occupations	5,175	5,765	1.1	19.78	41,144				
Automotive Service Technicians & Mechanics	535	590	1.0	17.34	36,074	HS	N	L	T1 T9 T11 T2 T8
Farm Equipment Mechanics & Service Technicians	270	300	1.3	18.70	38,906	HS	N	L	T9 T1 T11 T8 B3 T4 T5
Heating, AC, & Refrigeration Mechanics & Installers	235	285	2.1	20.64	42,935	PS	N	L	T3 T11 T9 T1 T5
Production Occupations	14,565	15,225	0.5	17.01	35,383				
Computer-Controlled Machine Tool Operators, Metal/Plastic	315	365	1.6	17.71	36,843	HS	N	M	B6 T5 B3 T8 T4
Welders, Cutters, Solderers, & Brazers	910	955	0.5	18.64	38,761	HS	N	M	B3 B2 B6 SY1 T4 T5
Weld/Solder/Braze Machine Setters, Operators, & Tenders	245	315	2.7	N.A.	N.A.	HS	N	M	T5 B2 B3 B6 T4 B9

REGION 8

Total, All Occupations	39,870	43,495	0.9	17.36	36,110				
Management Occupations	4,875	4,725	-0.3	39.15	81,424				
General & Operations Managers	375	400	0.7	46.63	96,997	BA	< 5	N	B2 B7 B9 B3 B6
Farmers, Ranchers, & Other Agricultural Managers	3,035	2,805	-0.8	N.A.	N.A.	HS	> 5	N	B3 B9 B2 SY1 B7 R4
Healthcare Practitioners & Technical Occupations	1,760	2,095	1.9	26.11	54,311				
Registered Nurses	725	865	1.9	24.21	50,348	AS	N	N	SO6 B2 SO1 B9 B3 B7 SO5
Licensed Practical & Licensed Vocational Nurses	225	265	1.8	18.04	37,528	PS	N	N	B2 B9 B3 B7 SO1 SO5
Installation, Maintenance, & Repair Occupations	1,820	2,005	1.0	18.65	38,801				
Automotive Service Technicians & Mechanics	295	325	0.8	16.40	34,112	HS	N	L	T1 T9 T11 T2 T8
Farm Equipment Mechanics & Service Technicians	190	215	1.3	16.00	33,278	HS	N	L	T9 T1 T11 T8 B3 T4 T5

STEM OCCUPATIONS BY GROUP REGION 9

Occupational Title	Employment ^[1]			\$ ^[2]		Career Preparation ^[3]			Top Skills ^[4]									
	2012 Est	2022 Proj	Annual Growth Rate (%)	2015 Mean Wage	2015 Mean Salary	Educ	Work Exp	Job Training	(L-R in order of significance)									
Industrial Production Managers	330	355	0.8	37.60	78,217	BA	> 5	N	SO1	B2	B6	R3	R4					
Farmers, Ranchers, & Other Agricultural Managers	6,970	6,160	-1.2	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4				
Medical & Health Services Managers	450	555	2.4	39.29	81,730	BA	N	N	B7	B9	B2	B3	SY1					
Business & Financial Operations Occupations	5,005	5,775	1.5	27.59	57,392													
Cost Estimators	205	250	2.0	30.95	64,366	BA	N	N	B5	B3	B9	B2	SY1					
Accountants & Auditors	895	1,055	1.8	29.03	60,392	BA	N	N	B2	B5	B7	B10	B9					
Computer & Mathematical Occupations	1,710	2,105	2.3	31.06	64,605													
Computer Systems Analysts	165	220	3.3	38.37	79,814	BA	N	N	B3	B2	B7	B9	SY2					
Software Developers, Applications	195	260	3.3	37.69	78,400	BA	N	N	C1	T7	SY2	SY1	SY3					
Network & Computer Systems Administrators	390	445	1.4	31.17	64,833	BA	N	N	B3	B7	SY2	C1	SY1	B6	SY3			
Computer User Support Specialists	445	570	2.8	18.83	39,164	SC	N	M	B2	B9	B7	B3	B10					
Architecture & Engineering Occupations	1,880	2,100	1.1	33.67	70,039													
Civil Engineers	230	285	2.4	36.47	75,851	BA	N	N	C1	B3	SY1	B5	T6	B7				
Industrial Engineers	295	320	0.8	35.32	73,461	BA	N	N	B7	B2	C1	B3	B10					
Mechanical Engineers	360	400	1.1	33.17	68,997	BA	N	N	C1	B3	B2	SY1	B5	B7				
Arts, Design, Entertainment, Sports, & Media Occupations	2,235	2,490	1.1	16.10	33,490													
Graphic Designers	205	235	1.5	16.20	33,696	BA	N	N	B2	T6	B9	B10	B3	B7				
Healthcare Practitioners & Technical Occupations	7,995	9,715	2.2	32.67	67,960													
Pharmacists	230	260	1.3	53.26	110,782	DP	N	N	B2	B7	B1	B3	B9					
Physical Therapists	215	285	3.3	36.21	75,320	DP	N	N	B2	B9	B7	B3	SO6	R4				
Registered Nurses	2,985	3,580	2.0	24.36	50,677	AS	N	N	SO6	B2	SO1	B9	B3	B7	SO5			
Nurse Practitioners	190	240	2.6	43.89	91,288	MA	N	N	B2	B7	B8	B9	B3	B6	SO6			
Medical & Clinical Laboratory Technicians	205	270	3.2	16.08	33,448	AS	N	N	B2	B3	B7	B8	T5	B9				
Dental Hygienists	320	400	2.5	31.38	65,276	AS	N	N	B2	B9	B3	B7	SO6					
Diagnostic Medical Sonographers	160	235	4.7	28.05	58,344	AS	N	N	B9	B2	B7	SO6	B3	B6	B8	R4		
Radiologic Technologists	315	380	2.1	23.13	48,113	AS	N	N	B9	B2	T4	SO5	SO1	B6	T5	SO6		
Emergency Medical Technicians & Paramedics	170	210	2.6	N.A.	N.A.	PS	N	N	B3	SO1	B2	SO6	B9					
Pharmacy Technicians	380	455	2.0	13.11	27,260	HS	N	M	B2	B7	B9	B3	SO5	SO6				
Licensed Practical & Licensed Vocational Nurses	385	475	2.3	18.72	38,933	PS	N	N	B2	B9	B3	B7	SO1	SO5				
Medical Records & Health Information Technicians	170	205	2.1	15.07	31,340	PS	N	N	B2	B7	B9	B3	B6	R4				
Healthcare Support Occupations	3,710	4,455	2.0	13.05	27,136													
Dental Assistants	220	260	1.8	15.00	31,201	PS	N	N	B9	B2	B7	SO5	B3					
Medical Assistants	505	615	2.2	13.00	27,045	PS	N	N	B2	B9	SO6	B6	B7					
Food Preparation & Serving Related Occupations	13,120	14,490	1.0	9.42	19,585													
First-Line Supervisors of Food Preparation & Serving Workers	820	925	1.3	13.08	27,200	HS	< 5	N	B9	B2	SO1	SO5	R3	B6				
Cooks, Institution & Cafeteria	560	625	1.2	11.14	23,181	< HS	N	S	R4	B2	B3	B6	B7	SO5				
Construction & Extraction Occupations	7,205	8,750	2.2	21.45	44,615													
Electricians	775	905	1.7	28.94	60,201	HS	N	A	T11	T9	B2	B3	T5	T8				
Plumbers, Pipefitters, & Steamfitters	750	890	1.9	23.37	48,601	HS	N	A	SO1	R4	B3	T5	B2	SY1	B6	B9		
Installation, Maintenance, & Repair Occupations	7,485	8,425	1.3	20.19	41,998													
Automotive Service Technicians & Mechanics	995	1,100	1.1	17.71	36,827	HS	N	L	T1	T9	T11	T2	T8					
Farm Equipment Mechanics & Service Technicians	205	230	1.0	N.A.	N.A.	HS	N	L	T9	T1	T11	T8	B3	T4	T5			
Production Occupations	19,320	20,995	0.9	16.59	34,497													
Food Batchmakers	545	565	0.4	N.A.	N.A.	HS	N	M	T4	B6	B7	T5	B2	B9				
Computer-Controlled Machine Tool Operators, Metal & Plastic	295	365	2.4	17.67	36,762	HS	N	M	B6	T5	B3	T8	T4					
Welders, Cutters, Solderers, & Brazers	1,085	1,200	1.1	18.03	37,497	HS	N	M	B3	B2	B6	SY1	T4	T5				
Chemical Plant & System Operators	430	465	0.7	N.A.	N.A.	HS	N	L	T5	T4	B6	T8	B3					

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:** 2015 Iowa Wage Survey estimates (based on 2014 3rd quarter occupational wage data updated to 2015 2nd quarter using Employment Cost Index), Labor Market and Workforce Information Division, Iowa Workforce Development. This workforce product was funded by a grant awarded by the U.S. Department of Labor's Employment and Training Administration. The product was created by the recipient and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership. This product is copyrighted by the institution that created it. Internal use by an organization and/or personal use by an individual for non-commercial purposes is permissible. All other uses require the prior authorization of the copyright owner. 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 www.iowalmi.gov to obtain the latest workforce data and trends including this document. Published 11/2015.