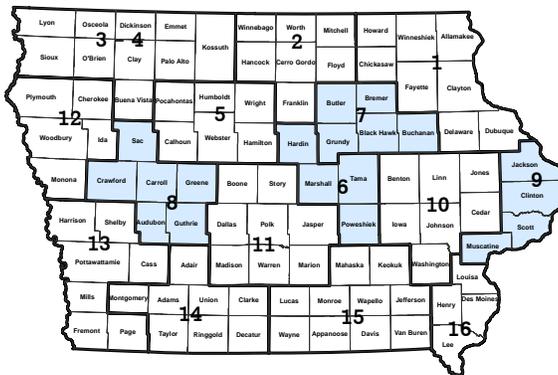


REGIONS 6, 7, 8, 9

STEM JOBS



STEM OCCUPATIONS BY GROUP

REGION 6

Occupational Title	Employment ^[1]			\$ ^[3]		Career Preparation ^[4]			Top Skills ^[5]				
	2012 Est	2022 Proj	Annual Growth Rate (%)	2014 Mean Wage	2014 Mean Salary	Educ	Work Exp	Job Training	(L-R in order of significance)				
Total, All Occupations	49,535	53,615	0.8	17.80	37,016								
Management Occupations	5,415	5,275	-0.3	38.09	79,237								
Farmers, Ranchers, & Other Agricultural Managers	3,110	2,820	-0.9	56.70	117,937	HS	> 5	N	B3	B9	B2	SY1	B7 R4
Healthcare Practitioners & Technical Occupations	2,070	2,405	1.6	28.87	60,052								
Licensed Practical & Licensed Vocational Nurses	375	440	1.6	17.75	36,920	PS	N	N	B2	B9	B3	B7	SO: SO5
Registered Nurses	730	840	1.5	25.40	52,823	AS	N	N	SO6	B2	SO1	B9	B3 B7 SO5
Food Preparation & Serving Related Occupations	3,665	4,020	1.0	9.81	20,399								
First-Line Supervisors of Food Preparation & Serving Workers	280	310	1.1	11.49	23,890	HS	< 5	N	B9	B2	SO1	SO5	R3 B6
Cooks, Institution & Cafeteria	255	285	1.0	11.61	24,141	< HS	N	S	R4	B2	B3	B6	B7 SO5
Construction & Extraction Occupations	2,250	2,625	1.7	19.40	40,356								
Electricians	230	265	1.5	24.43	50,817	HS	N	A	T11	T9	B2	B3	T5 T8
Production Occupations	6,165	6,585	0.7	14.42	30,000								
Weld/Solder/Braze Machine Setters, Operators, & Tenders	275	290	0.5	15.87	33,008	HS	N	M	T5	B2	B3	B6	T4 B9

REGION 7

Total, All Occupations	117,145	128,695	1.0	18.41	38,300								
Management Occupations	10,690	10,580	-0.1	39.67	82,511								
Construction Managers	225	265	1.8	37.33	77,637	BA	N	M	R4	B2	B3	R3	B9
Medical & Health Services Managers	340	400	1.8	38.53	80,138	BA	N	N	B7	B9	B2	B3	SY1
Financial Managers	340	370	0.9	44.82	93,223	BA	> 5	N	C1	B3	B2	B7	SY1B9 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
Business & Financial Operations Occupations	4,100	4,580	1.2	26.82	55,790								
Cost Estimators	155	185	1.9	29.43	61,206	BA	N	N	B5	B3	B9	B2	SY1
Accountants & Auditors	605	690	1.4	28.37	59,012	B	N	N	B2	B5	B7	B10	B9
Computer & Mathematical Occupations	1,375	1,580	1.5	30.19	62,788								
Computer Systems Analysts	225	270	2.0	N.A.	N.A.	BA	N	N	B3	B2	B7	B9	SY2
Architecture & Engineering Occupations	1,270	1,370	0.8	28.60	59,479								
Mechanical Engineers	200	215	0.8	31.76	66,059	BA	N	N	C1	B3	B2	SY1	B5 B7
Industrial Engineers	245	250	0.2	33.17	68,988	BA	N	N	B7	B2	C1	B3	B10
Healthcare Practitioners & Technical Occupations	5,795	6,805	1.7	31.29	65,077								
Physical Therapists	145	190	2.8	36.75	76,430	DP	N	N	B2	B9	B7	B3	SO: R4
Medical & Clinical Laboratory Technicians	175	215	2.3	19.68	40,927	AS	N	N	B2	B3	B7	B8	T5 B9
Registered Nurses	2,070	2,420	1.7	26.04	54,163	AS	N	N	SO6	B2	SO1	B9	B3 B7 SO5
Licensed Practical & Licensed Vocational Nurses	550	640	1.6	17.87	37,161	PS	N	N	B2	B9	B3	B7	SO: SO5
Healthcare Support Occupations	3,085	3,630	1.8	13.17	27,402								
Medical Assistants	280	330	2.0	13.91	28,943	PS	N	N	B2	B9	SO6	B6	B7
Food Preparation & Serving Related Occupations	8,900	9,915	1.1	9.63	20,022								
First-Line Supervisors of Food Preparation & Serving Workers	585	665	1.4	12.49	25,980	HS	< 5	N	B9	B2	SO1	SO5	R3 B6
Cooks, Institution & Cafeteria	460	510	1.2	11.29	23,491	< HS	N	S	R4	B2	B3	B6	B7 SO5
Construction & Extraction Occupations	5,210	6,305	2.1	19.17	39,878								
Plumbers, Pipefitters, & Steamfitters	465	560	2.0	19.12	39,775	HS	N	A	SO1	R4	B3	T5	B2 SY1 B6 B9
Electricians	375	425	1.3	21.07	43,831	HS	N	A	T11	T9	B2	B3	T5 T8
Installation, Maintenance, & Repair Occupations	5,175	5,765	1.1	19.40	40,349								
Heating/A/C/Refrigeration Mechanics & Installers	235	285	2.1	20.29	42,201	PS	N	L	T3	T11	T9	T1	T5
Farm Equipment Mechanics & Service Technicians	270	300	1.3	18.75	38,999	HS	N	L	T9	T1	T11	T8	B3 T4 T5
Automotive Service Technicians & Mechanics	535	590	1.0	16.71	34,752	HS	N	L	T1	T9	T11	T2	T8
Production Occupations	14,565	15,225	0.5	17.09	35,541								
Weld/Solder/Braze Machine Setters, Operators, & Tenders	245	315	2.7	17.08	35,529	HS	N	M	T5	B2	B3	B6	T4 B9
Computer-Controlled Machine Tool Operators, Metal & Plastic	315	365	1.6	18.26	37,981	HS	N	M	B6	T5	B3	T8	T4
Welders, Cutters, Solderers, & Brazers	910	955	0.5	17.46	36,321	HS	N	M	B3	B2	B6	SY1	T4 T5

REGION 8

Total, All Occupations	39,870	43,495	0.9	16.75	34,836								
Management Occupations	4,875	4,725	-0.3	39.81	82,802								
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	26.02	54,132								
Registered Nurses	725	865	1.9	23.77	49,443	AS	N	N	SO6	B2	SO1	B9	B3 B7 SO5
Licensed Practical & Licensed Vocational Nurses	225	265	1.8	17.94	37,318	PS	N	N	B2	B9	B3	B7	SO: SO5
Installation, Maintenance, & Repair Occupations	1,820	2,005	1.0	18.33	38,134								
Farm Equipment Mechanics & Service Technicians	190	215	1.3	N.A.	N.A.	HS	N	L	T9	T1	T11	T8	B3 T4 T5
Automotive Service Technicians & Mechanics	295	325	0.8	18.14	37,723	HS	N	L	T1	T9	T11	T2	T8

STEM OCCUPATIONS BY GROUP

REGION 9

Occupational Title	Employment ^[1]			\$ ^[2]		Career Preparation ^[3]			Top Skills ^[4]									
	2012 Est	2022 Proj	Annual Growth Rate (%)	2014 Mean Wage	2014 Mean Salary	Educ	Work Exp	Job Training	(L-R in order of significance)									
Total, All Occupations	158,285	176,925	1.2	18.43	38,343													
Management Occupations	13,530	13,565	0.0	41.21	85,714													
Medical & Health Services Managers	450	555	2.4	39.53	82,220	BA	N	N	B7	B9	B2	B3	SY1					
Financial Managers	410	465	1.3	48.37	100,613	BA	> 5	N	C1	B3	B2	B7	SY1	B9	B10			
Industrial Production Managers	330	355	0.8	38.33	79,734	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				
Business & Financial Operations Occupations	5,005	5,775	1.5	27.81	57,850													
Cost Estimators	205	250	2.0	30.77	63,993	BA	N	N	B5	B3	B9	B2	SY1					
Accountants & Auditors	895	1,055	1.8	29.43	61,216	BA	N	N	B2	B5	B7	B10	B9					
Computer & Mathematical Occupations	1,710	2,105	2.3	29.17	60,667													
Computer Systems Analysts	165	220	3.3	37.63	78,275	BA	N	N	B3	B2	B7	B9	SY2					
Software Developers, Applications	195	260	3.3	34.81	72,396	BA	N	N	C1	T7	SY2	SY1	SY3					
Computer User Support Specialists	445	570	2.8	16.64	34,610	SC	N	M	B2	B9	B7	B3	B10					
Network & Computer Systems Administrators	390	445	1.4	29.80	61,981	BA	N	N	B3	B7	SY2	C1	SY1	B6	SY3			
Architecture & Engineering Occupations	1,880	2,100	1.1	32.54	67,688													
Civil Engineers	230	285	2.4	N.A.	N.A.	BA	N	N	C1	B3	SY1	B5	T6	B7				
Mechanical Engineers	360	400	1.1	33.12	68,885	BA	N	N	C1	B3	B2	SY1	B5	B7				
Industrial Engineers	295	320	0.8	33.68	70,049	BA	N	N	B7	B2	C1	B3	B10					
Arts, Design, Entertainment, Sports, & Media Occupations	2,235	2,490	1.1	16.72	34,779													
Graphic Designers	205	235	1.5	16.49	34,305	BA	N	N	B2	T6	B9	B10	B3	B7				
Healthcare Practitioners & Technical Occupations	7,995	9,715	2.2	30.86	64,197													
Diagnostic Medical Sonographers	160	235	4.7	N.A.	N.A.	AS	N	N	B9	B2	B7	SO6	B3	B6	B8	R4		
Physical Therapists	215	285	3.3	39.05	81,226	DP	N	N	B2	B9	B7	B3	SO6	R4				
Medical & Clinical Laboratory Technicians	205	270	3.2	N.A.	N.A.	AS	N	N	B2	B3	B7	B8	T5	B9				
Emergency Medical Technicians & Paramedics	170	210	2.6	13.88	28,871	PS	N	N	B3	SO5	B2	SO6	B9					
Nurse Practitioners	190	240	2.6	N.A.	N.A.	MA	N	N	B2	B7	B8	B9	B3	B6	SO6			
Dental Hygienists	320	400	2.5	30.07	62,539	AS	N	N	B2	B9	B3	B7	SO6					
Licensed Practical & Licensed Vocational Nurses	385	475	2.3	19.14	39,813	PS	N	N	B2	B9	B3	B7	SO1	SO5				
Radiologic Technologists	315	380	2.1	22.45	46,704	AS	N	N	B9	B2	T4	SO5	SO1	B6	T5	SO6		
Medical Records & Health Information Technicians	170	205	2.1	15.05	31,297	PS	N	N	B2	B7	B9	B3	B6	R4				
Registered Nurses	2,985	3,580	2.0	24.89	51,771	AS	N	N	SO6	B2	SO1	B9	B3	B7	SO5			
Pharmacy Technicians	380	455	2.0	13.70	28,496	HS	N	M	B2	B7	B9	B3	SO5	SO6				
Pharmacists	230	260	1.3	52.80	109,833	DP	N	N	B2	B7	B1	B3	B9					
Healthcare Support Occupations	3,710	4,455	2.0	12.27	25,532													
Medical Assistants	505	615	2.2	12.59	26,187	PS	N	N	B2	B9	SO6	B6	B7					
Dental Assistants	220	260	1.8	14.78	30,736	PS	N	N	B9	B2	B7	SO5	B3					
Food Preparation & Serving Related Occupations	13,120	14,490	1.0	9.50	19,751													
First-Line Supervisors of Food Preparation & Serving Workers	820	925	1.3	12.80	26,627	HS	< 5	N	B9	B2	SO1	SO5	R3	B6				
Cooks, Institution & Cafeteria	560	625	1.2	11.05	22,991	< HS	N	S	R4	B2	B3	B6	B7	SO5				
Construction & Extraction Occupations	7,205	8,750	2.2	21.54	44,799													
Plumbers, Pipefitters, & Steamfitters	750	890	1.9	25.99	54,057	HS	N	A	SO1	R4	B3	T5	B2	SY1	B6	B9		
Electricians	775	905	1.7	28.33	58,932	HS	N	A	T11	T9	B2	B3	T5	T8				
Installation, Maintenance, & Repair Occupations	7,485	8,425	1.3	20.09	41,790													
Automotive Service Technicians & Mechanics	995	1,100	1.1	17.96	37,350	HS	N	L	T1	T9	T11	T2	T8					
Farm Equipment Mechanics & Service Technicians	205	230	1.0	18.21	37,886	HS	N	L	T9	T1	T11	T8	B3	T4	T5			
Production Occupations	19,320	20,995	0.9	16.72	34,777													
Computer-Controlled Machine Tool Operators, Metal & Plastic	295	365	2.4	17.54	36,487	HS	N	M	B6	T5	B3	T8	T4					
Welders, Cutters, Solderers, & Brazers	1,085	1,200	1.1	17.39	36,179	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					
Food Batchmakers	545	565	0.4	N.A.	N.A.	HS	N	M	T4	B6	B7	T5	B2	B9				

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/questionary; 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.