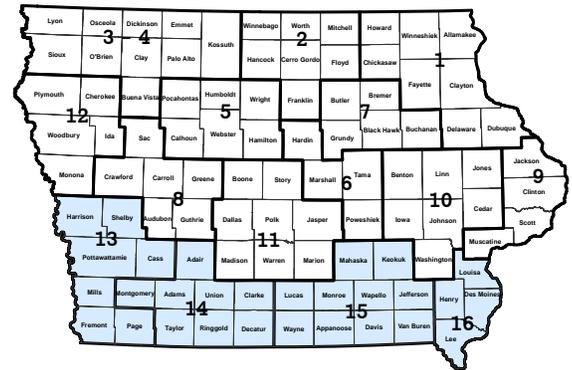


REGIONS 13, 14, 15, & 16

STEM JOBS



STEM OCCUPATIONS BY GROUP

REGION 13

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	81,595	90,170	1.1	17.05	35,467				
Management Occupations	8,305	8,105	-0.2	33.40	69,477				
Farmers, Ranchers, & Other Agricultural Managers	5,100	4,595	-1.0	33.25	69,159	HS	> 5	N	B3 B9 B2 SY1 B7 R4
Business & Financial Operations Occupations	2,250	2,515	1.2	26.71	55,563				
Accountants & Auditors	380	435	1.6	31.38	65,269	BA	N	N	B2 B5 B7 B10 B9
Arts, Design, Entertainment, Sports, & Media Occupations	845	940	1.1	15.85	32,975				
Healthcare Practitioners & Technical Occupations	4,160	4,875	1.7	28.38	59,027				
Pharmacists	230	255	1.3	43.81	91,123	DP	N	N	B2 B7 B1 B3 B9
Registered Nurses	1,395	1,590	1.4	26.42	54,958	AS	N	N	SO6 B2 SO1 B9 B3 B7 SO5
Licensed Practical & Licensed Vocational Nurses	505	595	1.8	18.47	38,410	PS	N	N	B2 B9 B3 B7 SO1 SO5
Construction & Extraction Occupations	3,480	4,280	2.3	20.06	41,729				
Electricians	195	240	2.3	27.47	57,146	HS	N	A	T11 T9 B2 B3 T5 T8
Plumbers, Pipefitters, & Steamfitters	255	320	2.5	24.38	50,707	HS	N	A	SO1 R4 B3 T5 B2 SY1 B6 B9
Installation, Maintenance, & Repair Occupations	3,815	4,260	1.2	18.87	39,242				
Automotive Service Technicians & Mechanics	505	550	0.9	20.70	43,056	HS	N	L	T1 T9 T11 T2 T8
Farm Equipment Mechanics & Service Technicians	260	290	1.2	17.58	36,561	HS	N	L	T9 T1 T11 T8 B3 T4 T5
Heating, AC, & Refrigeration Mechanics & Installers	205	265	2.9	17.55	36,509	PS	N	L	T3 T11 T9 T1 T5
Production Occupations	6,200	6,785	0.9	14.73	30,641				
Welders, Cutters, Solderers, & Brazers	405	445	1.0	15.47	32,185	HS	N	M	B3 B2 B6 SY1 T4 T5

REGION 15

Total, All Occupations	65,575	70,875	0.8	17.63	36,667				
Management Occupations	7,965	7,685	-0.3	35.58	74,013				
Farmers, Ranchers, & Other Agricultural Managers	4,945	4,525	-0.8	N.A.	N.A.	HS	> 5	N	B3 B9 B2 SY1 B7 R4
Business & Financial Operations Occupations	2,365	2,575	0.9	25.55	53,136				
Accountants & Auditors	350	375	0.7	24.08	50,079	BA	N	N	B2 B5 B7 B10 B9
Healthcare Practitioners & Technical Occupations	2,585	3,000	1.6	28.89	60,085				
Registered Nurses	1,145	1,320	1.5	24.51	50,974	AS	N	N	SO6 B2 SO1 B9 B3 B7 SO5
Food Preparation & Serving Related Occupations	4,085	4,415	0.8	9.34	19,417				
First-Line Supervisors of Food Preparation & Serving Workers	290	320	1.0	12.14	25,241	HS	< 5	N	B9 B2 SO1 SO5 R3 B6
Cooks, Institution & Cafeteria	435	480	1.1	10.07	20,940	< HS	N	S	R4 B2 B3 B6 B7 SO5
Construction & Extraction Occupations	2,765	3,315	2.0	18.80	39,097				
Plumbers, Pipefitters, & Steamfitters	260	315	2.1	N.A.	N.A.	HS	N	A	SO1 R4 B3 T5 B2 SY1 B6 B9
Installation, Maintenance, & Repair Occupations	2,955	3,220	0.9	18.75	38,992				
Automotive Service Technicians & Mechanics	280	295	0.5	13.42	27,922	HS	N	L	T1 T9 T11 T2 T8
Production Occupations	7,505	7,950	0.6	15.37	31,962				
Food Batchmakers	335	340	0.3	N.A.	N.A.	HS	N	M	T4 B6 B7 T5 B2 B9
Machinists	410	450	1.0	16.22	33,744	HS	N	L	T5 T8 T4 T11 B3 B6
Welders, Cutters, Solderers, & Brazers	435	460	0.6	16.69	34,715	HS	N	M	B3 B2 B6 SY1 T4 T5

STEM OCCUPATIONS BY GROUP

REGION 14

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	33,595	36,250	0.8	16.44	34,194													
Management Occupations	4,760	4,665	-0.2	33.00	68,638													
Farmers, Ranchers, & Other Agricultural Managers	2,885	2,690	-0.7	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4				
Healthcare Practitioners & Technical Occupations	1,295	1,520	1.7	25.89	53,860													
Licensed Practical & Licensed Vocational Nurses	270	335	2.4	18.86	39,223	PS	N	N	B2	B9	B3	B7	SO1	SO5				
Registered Nurses	455	520	1.3	24.05	50,022	AS	N	N	SO6	B2	SO1	B9	B3	B7	SO5			

REGION 16

Total, All Occupations	60,415	65,815	0.9	17.60	36,599													
Management Occupations	5,485	5,320	-0.3	36.27	75,442													
Farmers, Ranchers, & Other Agricultural Managers	3,200	2,855	-1.1	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4				
Business & Financial Operations Occupations	1,900	2,060	0.8	25.35	52,732													
Accountants & Auditors	290	320	1.0	28.00	58,239	BA	N	N	B2	B5	B7	B10	B9					
Healthcare Practitioners & Technical Occupations	3,000	3,470	1.6	30.80	64,055													
Licensed Practical & Licensed Vocational Nurses	395	480	2.0	17.36	36,105	PS	N	N	B2	B9	B3	B7	SO1	SO5				
Registered Nurses	1,085	1,245	1.5	26.21	54,519	AS	N	N	SO6	B2	SO1	B9	B3	B7	SO5			
Healthcare Support Occupations	1,940	2,325	2.0	12.52	26,040													
Medical Assistants	230	275	2.0	13.99	29,091	PS	N	N	B2	B9	SO6	B6	B7					
Food Preparation & Serving Related Occupations	3,730	4,130	1.1	8.87	18,458													
First-Line Supervisors of Food Preparation & Serving Workers	255	290	1.2	12.58	26,173	HS	< 5	N	B9	B2	SO1	SO5	R3	B6				
Cooks, Institution & Cafeteria	280	310	1.1	10.79	22,438	< HS	N	S	R4	B2	B3	B6	B7	SO5				
Construction & Extraction Occupations	2,805	3,455	2.3	20.26	42,139													
Plumbers, Pipefitters, & Steamfitters	275	340	2.4	N.A.	N.A.	HS	N	A	SO1	R4	B3	T5	B2	SY1	B6	B9		
Electricians	205	245	1.7	23.94	49,804	HS	N	A	T11	T9	B2	B3	T5	T8				
Installation, Maintenance, & Repair Occupations	3,080	3,400	1.0	19.19	39,910													
Heating, Air Conditioning, & Refrigeration Mechanics & Installers	145	180	2.4	N.A.	N.A.	PS	N	L	T3	T11	T9	T1	T5					
Automotive Service Technicians & Mechanics	525	585	1.1	15.58	32,402	HS	N	L	T1	T9	T11	T2	T8					
Production Occupations	9,340	9,840	0.5	15.64	32,535													
Weld/Solder/Braze Machine Setters, Operators, & Tenders	190	240	2.6	19.71	40,988	HS	N	M	T5	B2	B3	B6	T4	B9				
Welders, Cutters, Solderers, & Brazers	415	455	1.0	17.54	36,483	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 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 2nd 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.