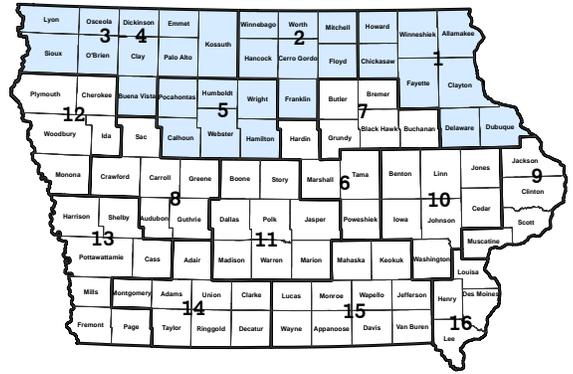


REGIONS 1, 2, 3-4, 5

STEM JOBS



STEM OCCUPATIONS BY GROUP

REGION 1

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)										
Total, All Occupations	125,330	138,060	1.0	22.07	45,907														
Management Occupations	12,905	12,790	-0.1	47.26	98,296														
Financial Managers	390	445	1.4	59.65	124,070	BA	> 5	N	C1	B3	B2	B7	SY1	B9	B10				
Farmers, Ranchers, & Other Agricultural Managers	7,195	6,555	-0.9	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4					
Medical & Health Services Managers	195	235	1.8	39.97	83,132	BA	N	N	B7	B9	B2	B3	SY1						
Business & Financial Operations Occupations	4,395	4,955	1.3	31.50	65,524														
Accountants & Auditors	590	655	1.1	32.71	68,030	BA	N	N	B2	B5	B7	B10	B9						
Personal Financial Advisors	270	345	2.8	38.35	79,764	BA	N	N	B3	B9	B7	SY1	B10						
Computer & Mathematical Occupations	2,635	3,235	2.3	36.26	75,415														
Computer Systems Analysts	655	825	2.6	N.A.	N.A.	BA	N	N	B3	B2	B7	B9	SY2						
Software Developers, Applications	355	450	2.5	39.46	82,067	BA	N	N	C1	T7	SY2	SY1	SY3						
Software Developers, Systems Software	460	585	2.7	N.A.	N.A.	BA	N	N	B3	B2	T7	B7	C1						
Computer User Support Specialists	500	625	2.6	21.34	44,392	SC	N	M	B2	B9	B7	B3	B10						
Healthcare Practitioners & Tech Occupations	5,770	6,745	1.7	35.82	74,498														
Pharmacists	215	250	1.6	43.54	90,566	DP	N	N	B2	B7	B1	B3	B9						
Registered Nurses	2,150	2,480	1.5	27.12	56,414	AS	N	N	SO6	B2	SO1	B9	B3	B7	SO5				
Dental Hygienists	200	240	2.0	34.01	70,747	AS	N	N	B2	B9	B3	B7	SO6						
Emergency Medical Technicians & Paramedics	265	310	1.7	19.13	39,784	PS	N	N	B3	SO5	B2	SO6	B9						
Pharmacy Technicians	320	405	2.5	14.24	29,628	HS	N	M	B2	B7	B9	B3	SO5	SO6					
Licensed Practical & Licensed Vocational Nurses	535	650	2.1	19.54	40,638	PS	N	N	B2	B9	B3	B7	SO1	SO5					
Healthcare Support Occupations	3,405	3,905	1.5	14.28	29,697														
Dental Assistants	225	255	1.3	18.55	38,588	PS	N	N	B9	B2	B7	SO5	B3						
Food Prep & Serving Related Occupations	8,950	9,930	1.1	9.64	20,045														
First-Line Supervisors of Food Prep & Serving Wkrs	460	520	1.3	14.74	30,668	HS	< 5	N	B9	B2	SO1	SO5	R3	B6					
Cooks, Institution & Cafeteria	660	725	1.0	12.01	24,973	< HS	N	S	R4	B2	B3	B6	B7	SO5					
Personal Care & Service Occupations	3,800	4,580	2.1	11.27	23,443														
Office & Admin Support Occupations	15,400	16,510	0.7	17.17	35,718														
Construction & Extraction Occupations	6,120	7,475	2.2	21.62	44,970														
Electricians	590	690	1.7	26.11	54,303	HS	N	A	T11	T9	B2	B3	T5	T8					
Plumbers, Pipefitters, & Steamfitters	290	345	1.7	24.24	50,417	HS	N	A	SO1	R4	B3	T5	B2	SY1	B6	B9			
Installation, Maintenance, & Repair Occupations	5,190	5,820	1.2	21.27	44,239														
Automotive Service Technicians & Mechanics	625	695	1.1	19.65	40,873	HS	N	L	T1	T9	T11	T2	T8						
Farm Equipment Mechanics & Service Technicians	295	325	1.0	19.86	41,310	HS	N	L	T9	T1	T11	T8	B3	T4	T5				
Heating, AC, & Refrigeration Mechanics & Installers	175	215	2.3	24.91	51,818	PS	N	L	T3	T11	T9	T1	T5						
Production Occupations	13,670	14,645	0.7	16.48	34,272														
Computer-Controlled Machine Tool Operators, Metal & Plastic	1,020	1,230	2.1	N.A.	N.A.	HS	N	M	B6	T5	B3	T8	T4						
Welders, Cutters, Solderers, & Brazers	765	830	0.8	17.60	36,612	HS	N	M	B3	B2	B6	SY1	T4	T5					

REGION 2

Total, All Occupations	62,755	68,070	0.8	17.36	36,115														
Management Occupations	6,880	6,700	-0.3	35.68	74,219														
Farmers, Ranchers, & Other Agricultural Managers	4,180	3,830	-0.8	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4					
Business & Financial Operations Occupations	1,860	2,045	1.0	26.09	54,272														
Accountants & Auditors	295	330	1.2	27.71	57,635	BA	N	N	B2	B5	B7	B10	B9						
Healthcare Practitioners & Technical Occupations	3,340	3,820	1.5	30.68	63,823														
Registered Nurses	1,350	1,530	1.4	24.98	51,961	AS	N	N	SO6	B2	SO1	B9	B3	B7	SO5				
Dental Hygienists	185	220	1.9	33.15	68,954	AS	N	N	B2	B9	B3	B7	SO6						
Licensed Practical & Licensed Vocational Nurses	305	360	2.0	18.13	37,713	PS	N	N	B2	B9	B3	B7	SO1	SO5					
Food Preparation & Serving Related Occupations	4,725	5,145	0.9	9.05	18,831														
First-Line Supervisors of Food Preparation & Serving Wkrs	310	350	1.3	11.43	23,772	HS	< 5	N	B9	B2	SO1	SO5	R3	B6					
Cooks, Institution & Cafeteria	290	325	1.4	10.90	22,664	< HS	N	S	R4	B2	B3	B6	B7	SO5					
Installation, Maintenance, & Repair Occupations	2,805	3,130	1.1	20.44	42,512														
Automotive Service Technicians & Mechanics	375	410	0.9	17.14	35,649	HS	N	L	T1	T9	T11	T2	T8						
Farm Equipment Mechanics & Service Technicians	230	250	0.9	19.17	39,884	HS	N	L	T9	T1	T11	T8	B3	T4	T5				
Production Occupations	7,125	7,680	0.8	15.87	33,005														
Welders, Cutters, Solderers, & Brazers	780	840	0.8	15.48	32,207	HS	N	M	B3	B2	B6	SY1	T4	T5					

STEM OCCUPATIONS BY GROUP

REGION 3-4

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	95,065	102,445	0.8	17.35	36,087															
Management Occupations	11,155	10,870	-0.3	36.84	76,622															
Financial Managers	325	355	0.9	39.06	81,242	BA	> 5	N	C1	B3	B2	B7	SY1	B9	B10					
Farmers, Ranchers, & Other Agricultural Managers	6,485	5,945	-0.8	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4						
Business & Financial Operations Occupations	3,285	3,580	0.9	25.59	53,234															
Accountants & Auditors	535	610	1.3	24.50	50,958	BA	N	N	B2	B5	B7	B10	B9							
Architecture & Engineering Occupations	1,020	1,110	0.9	27.77	57,768															
Industrial Engineers	265	300	1.3	32.95	68,531	BA	N	N	B7	B2	C1	B3	B10							
Healthcare Practitioners & Technical Occupations	3,560	4,035	1.3	28.94	60,199															
Registered Nurses	1,390	1,560	1.2	24.09	50,106	AS	N	N	SO6	B2	SO1	B9	B3	B7	SO5					
Licensed Practical & Licensed Vocational Nurses	310	345	1.1	17.30	35,983	PS	N	N	B2	B9	B3	B7	SO1	SO5						
Food Preparation & Serving Related Occupations	6,285	6,870	0.9	9.31	19,365															
First-Line Supervisors of Food Preparation & Serving Workers	475	535	1.3	13.20	27,451	HS	< 5	N	B9	B2	SO1	SO5	R3	B6						
Cooks, Institution & Cafeteria	715	795	1.1	10.78	22,420	< HS	N	S	R4	B2	B3	B6	B7	SO5						
Construction & Extraction Occupations	4,390	5,245	1.9	17.55	36,506															
Electricians	285	320	1.4	20.97	43,617	HS	N	A	T11	T9	B2	B3	T5	T8						
Painters, Construction & Maintenance	205	265	2.9	15.51	32,271	< HS	N	M	B2	B3	SO6	B7	R4							
Installation, Maintenance, & Repair Occupations	4,340	4,825	1.1	19.89	41,379															
Automotive Service Technicians & Mechanics	415	450	0.8	19.38	40,305	HS	N	L	T1	T9	T11	T2	T8							
Farm Equipment Mechanics & Service Technicians	480	520	0.7	19.56	40,683	HS	N	L	T9	T1	T11	T8	B3	T4	T5					
Production Occupations	10,890	11,225	0.3	15.51	32,262															
Computer-Controlled Machine Tool Operators, Metal & Plastic	210	230	1.0	15.66	32,566	HS	N	M	B6	T5	B3	T8	T4							
Welders, Cutters, Solderers, & Brazers	530	560	0.6	16.41	34,135	HS	N	M	B3	B2	B6	SY1	T4	T5						
Water & Wastewater Treatment Plant & System Operators	205	225	1.0	20.70	43,055	HS	N	L	T4	T5	B6	T8	B2	T1	B7	T11				

REGION 5

Total, All Occupations	49,235	53,645	0.9	18.97	39,451															
Management Occupations	6,035	5,910	-0.2	35.13	73,079															
Farmers, Ranchers, & Other Agricultural Managers	3,535	3,250	-0.8	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4						
Healthcare Practitioners & Technical Occupations	2,465	2,890	1.7	30.50	63,430															
Registered Nurses	990	1,160	1.7	23.81	49,531	AS	N	N	SO6	B2	SO1	B9	B3	B7	SO5					
Licensed Practical & Licensed Vocational Nurses	265	325	2.3	17.92	37,283	PS	N	N	B2	B9	B3	B7	SO1	SO5						
Food Preparation & Serving Related Occupations	3,110	3,435	1.0	9.74	20,250															
First-Line Supervisors of Food Preparation & Serving Workers	200	230	1.3	15.36	31,951	HS	< 5	N	B9	B2	SO1	SO5	R3	B6						
Cooks, Institution & Cafeteria	395	440	1.3	10.88	22,626	< HS	N	S	R4	B2	B3	B6	B7	SO5						
Construction & Extraction Occupations	2,425	2,930	2.1	19.37	40,293															
Electricians	385	460	1.9	18.70	38,904	HS	N	A	T11	T9	B2	B3	T5	T8						
Installation, Maintenance, & Repair Occupations	2,615	2,925	1.2	20.24	42,101															
Automotive Service Technicians & Mechanics	415	435	0.5	19.52	40,593	HS	N	L	T1	T9	T11	T2	T8							
Farm Equipment Mechanics & Service Technicians	225	245	0.7	N.A.	N.A.	HS	N	L	T9	T1	T11	T8	B3	T4	T5					
Production Occupations	3,790	4,070	0.7	15.63	32,507															
Welders, Cutters, Solderers, & Brazers	230	245	0.7	16.16	33,623	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**: 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.