IOWA WORKFORCE DEVELOPMENT

REGIONS 11, 14, 15, 16

STEM JOBS

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STEM OCCUPATIONS BY GROUP

REGION 11

	En	Employment ^[1] \$ [2] Career Preparation ^[3]																
Occupational Title	2012 Est	2022 Proj	Annual Growth Rate	2014 Mean Wage	2014 Mean Salary	Educ	Work Exp	Job Training	Top Skills ^[4] (L-R in order of significanc					ance)				
Total, All Occupations	453,900	518,520	(%) 1.4	21.48	44,684													
Management Occupations	40,670			45.87	95,410													
Construction Managers	860			34.26	71,270		N	M	R4	B2	В3	R3	B9					
Computer and Information Systems Managers	1,185	1,490		55.04			> 5	N	B7	B2	В3	C1	B6	B10				
Medical and Health Services Managers	1,220	1,515		39.72	82,610		N	N	B7	В9	B2	В3	SY1					
Financial Managers	2,635	3,185	2.1	56.48	117,468	BA	> 5	N	C1	В3	B2	B7	SY1	B9	B10			
Architectural and Engineering Managers	260	290	1.2	51.39	106,885	BA	> 5	N	B2	B7	B9	B10	C1	SO1	R3	B6	T6	R4
Industrial Production Managers	565	625	1.1	39.77	82,715	BA	> 5	N	SO1	B2	B6	R3	R4					
Farmers, Ranchers, and Other Agricultural Managers	16,870			29.82	62,035		> 5	N	B3	В9	B2	SY1	B7	R4				
Business and Financial Operations Occupations	29,795			30.36	63,158													
Personal Financial Advisors	735	995		37.46	77,909		N	N	B3	B9	B7	SY1						
Logisticians	315	405		30.20	62,816		N	N	B3	B2	C1	B6	B7					
Cost Estimators	485	600		28.45 34.91	59,173		N N	N N	B5 B3	B3 B1	B9 B2	B2 SY1	SY1 B7	B9				
Credit Analysts	825 1,285	1,020 1,555		37.58	72,613 78,162	BA BA	N N	N N	B3	B7	B2 B10		C1	Б9				
Financial Analysts Accountants and Auditors	3,960	4,685		32.18	66,941	BA	N	N	B2	B5	B7	B10						
Compliance Officers	785	890		30.36	63,144	BA	N	M	B1	B3	B9	C1	B7					
Budget Analysts	160	180		34.48	71,726		N	N	B2	B7	B9	B3	SY1					
Financial Examiners	405	455		34.81	72,405		N	M	B3	B7	B9	B1	B2	SO2	SY1	R4	B10	
Insurance Underwriters	1,375	1,440		30.03	62,457	BA	N	M	B2	SY1		B3	B9	502	011		2.0	
Computer and Mathematical Occupations	13,995			34.78	72,349		• •		1									
Information Security Analysts	235	340		33.72	70,128		< 5	N	В7	ВЗ	C1	В9	B2	B10				
Actuaries	330	465		44.33	92,214	BA	N	L	B5	ВЗ	SY1		B7					
Operations Research Analysts	225	305		35.41	73,661	BA	N	N	ВЗ	B5	C1	В7	SY1	SY2	SY3			
Computer Systems Analysts	3,245	4,395	3.5	37.28	77,543	BA	N	N	ВЗ	B2	B7	B9	SY2					
Software Developers, Applications	2,790	3,605	2.9	37.01	76,985	BA	N	N	C1	T7	SY2	SY1	SY3					
Software Developers, Systems Software	765	985	2.9	47.57	98,955	BA	N	N	В3	B2	T7	B7	C1					
Database Administrators	410	520	2.7	40.06	83,322	BA	< 5	N	C1	В3	B6	B1	B2	B7				
Computer User Support Specialists	1,430	1,805		21.37	44,439	SC	N	M	B2	В9	B7	B3	B10					
Web Developers	440	550		30.50	63,444	AS	N	N	T7	В3	T6	B2	C1	B7				
Network and Computer Systems Administrators	1,410			33.30	69,267	BA	N	N	B3	B7		C1	SY1	B6	SY3			
Computer Network Architects	490	595		49.50	102,959	BA	> 5	N	B2	T6	SY2		C1					
Computer Programmers	800	905		31.79	66,125	BA	N	N	T7	В7	C1	B3	B2	T8				
Computer Network Support Specialists	800	865		25.86	53,796	AS	N	N	ļ									
Architecture and Engineering Occupations	5,020	5,665		31.82	66,185	ВА	N	N	C1	ВЗ	SY1	B5	T6	В7				
Civil Engineers Architects, Except Landscape and Naval	885	1,070 425		36.38 32.78	75,662 68,183		N	IN I	B2	B3	C1	B9	SY1	B7				
Industrial Engineers	355 550	630		34.71	72,193	BA	N	N	B7	B2	C1	B3	B10	D1				
Mechanical Engineers	465	540		34.06	70,851	BA	N	N	C1	B3	B2	SY1		В7				
Civil Engineering Technicians	420	420		26.16	54,417	AS	N	N	B7	B2	B3	B10		υ,				
Life, Physical, and Social Science Occupations	5,035	5,575		29.06	60,446				ΙΟ,	02	В	D10	В					
Food Scientists and Technologists	185	220		30.74	63,938		N	N	B2	В7	B10	В1	B3	B9				
Clinical, Counseling, and School Psychologists	220	250		34.78	72,337	DP	N	ï	B2	B7	SO6		B10					
Agricultural and Food Science Technicians	530	595		17.16	35,695	AS	N	M	В7	ВЗ	B10		C1	SO1	В9			
Chemical Technicians	230	255		18.77	39,048	AS	N	M	В8	B7	В3	B6	B10					
Environmental Scientists and Specialists, Including Health	255	280	1.0	30.55	63,552	BA	N	N	В8	В3	B7	B9	B2	B10				
Soil and Plant Scientists	1,370	1,495	0.9	35.21	73,229	BA	N	N	B8	B2	В3	B9	SY1	B7				
Biological Technicians	470	460		20.38	42,388	BA	N	N	B7	B2	В3	B8	C1					
Education, Training, and Library Occupations	27,970	31,210	1.2	23.24	48,331													
Nursing Instructors and Teachers, Postsecondary	255	350		N.A.	N.A.	MA	< 5	N	B9	B7	B1	B2	SO2					
Health Specialties Teachers, Postsecondary	545	750		42.23	87,846		< 5	N	B7	В9		B3	B2	C1	B4	B10		
Biological Science Teachers, Postsecondary	275	330		42.94	89,316		N	N	B9	B4	B7	B10		SO2				
Business Teachers, Postsecondary	465	540		45.66	94,966		N	N	B9	В7	B10			В3	B4			
Engineering Teachers, Postsecondary	345	385		N.A.	N.A.	DP	N	N	SO ₂	B2	B7	B3	SY1	B4	B6	B10		
Arts, Design, Entertainment, Sports, and Media Occupations	8,680	9,730		20.95	43,572				1									
Graphic Designers	930	1,050		21.04	43,758		N	N	B2	Т6	B9	B10	В3	B7				
Healthcare Practitioners and Technical Occupations	21,490			34.29	71,328		K 1	A.I	IDΩ	D0	D7	000	. D2	D.C	Do	D4		
Diagnostic Medical Sonographers	270	400		29.69	61,758	AS	N	N	B9	B2	B7	SO6		B6	B8	R4		
Physician Assistants	200			44.71	92,989		N	N	B2	B3	B9	B7	SY1	B6	SO6			
Occupational Therapists Nurse Practitioners	315			36.53	75,980		N	N	B2 B2	B7	B9	B3	SO5		SO6			
Physical Therapists	320 460	430 610		42.98 36.51	89,393 75,941	MA DP	N N	N N	B2 B2	B7 B9	B8 B7	B9 B3	B3 SO6	B6 R4	300			
Speech-Language Pathologists	275	360		32.74	68,104		N N	N N	B2	SO6		B3	B7	B10				
Dental Hygienists	555	715		33.50	69,685		N N	N N	B2	B9	B3	В3 В7	SO6	טוט				
Veterinary Technologists and Technicians	290	365		16.32	33,944		N	N	B3	B6	B2	B9	SO5					
Medical and Clinical Laboratory Technicians	290 370			19.04	39,595		N	N	B2	B3	B7	B8	T5	В9				
Optometrists	165			69.92		DP	N	N	B8	B2	B3	B9	SO1	B7	SO5			
Licensed Practical and Licensed Vocational Nurses	1,375			19.16	39,850		N	N	B2	B9	B3	B7	SO1	SO5	503			
Radiologic Technologists	605	735		24.49	50,938		N	N	B9	B2	T4	SO5			T5	SO6		
Pharmacy Technicians	1,010			14.03	29,173		N	M	B2	B7	B9	B3		SO6	. 5	500		
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STEM OCCUPATIONS BY GROUP

REGION 14		ployme	Annual	2014	2014			aration ^[3]		Top Skills ^[4]					
Occupational Title	2012 Est	2022 Proj	Growth Rate (%)	Mean Wage	Mean Salary	Educ	Work Exp	Job Training		(L-F	R in o	rder o	of sigi	nifican	nce)
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	В3	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 15

Total, All Occupations	65,575	70,875	0.8	16.98	35,312											
Management Occupations	7,965	7,685	-0.3	36.24	75,387											
Farmers, Ranchers, & Other Agricultural Managers	4,945	4,525	-0.8	N.A.	N.A.	HS	> 5	N	В3	B9 I	B2	SY1	B7	R4		
Business & Financial Operations Occupations	2,365	2,575	0.9	25.12	52,241											
Accountants & Auditors	350	375	0.7	24.28	50,507	BA	N	N	B2	B5 I	B7	B10	B9			
Healthcare Practitioners & Technical Occupations	2,585	3,000	1.6	28.00	58,239				-							
Registered Nurses	1,145	1,320	1.5	23.79	49,485	AS	N	N	SO6	B2 \$	SO1	B9	B3	B7	SO5	
Food Preparation & Serving Related Occupations	4,085	4,415	0.8	9.20	19,133											
Cooks, Institution & Cafeteria	435	480	1.1	10.35	21,534	< HS	N	S	R4	B2 I	B3	B6	B7	SO5		
First-Line Supervisors of Food Preparation & Serving Workers	290	320	1.0	13.55	28,187	HS	< 5	Ν	B9	B2 \$	SO1	SO5	R3	B6		
Construction & Extraction Occupations	2,765	3,315	2.0	18.80	39,098				-							
Plumbers, Pipefitters, & Steamfitters	260	315	2.1	21.98	45,713	HS	N	Α	SO1	R4 I	B3	T5	B2	SY1	B6	B9
Installation, Maintenance, & Repair Occupations	2,955	3,220	0.9	18.56	38,602				-							
Automotive Service Technicians & Mechanics	280	295	0.5	16.24	33,774	HS	N	L	T1	T9 ⁻	T11	T2	T8			
Production Occupations	7,505	7,950	0.6	14.90	30,993											
Welders, Cutters, Solderers, & Brazers	435	460	0.6	16.41	34,135	HS	N	M	В3	B2 I	B6	SY1	T4	T5		
Food Batchmakers	335	340	0.3	N.A.	N.A.	HS	N	М	T4	B6 I	B7	T5	B2	B9		
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REGION 16

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Total, All Occupations	60,415	65,815	0.9	17.60	36,599											
Management Occupations	5485	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	Α	SO1	R4	B3	T5	B2	SY1	B6	B9
Electricians	205	245	1.7	23.94	49,804	HS	N	Α	T11	Т9	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	Т3	T11	T9	T1	T5			
Automotive Service Technicians & Mechanics	525	585	1.1	15.58	32,402	HS	N	L	T1	Т9	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	М	В3	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 **S**cience, **Technology**, **Engineering**, and/or **M**athematics.

[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

degree; PS = Postsecondary non-degree award; SC = Some college, no degree; HS = High school optoma 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; 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' questionaire 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 Financial Resources; R2 = Instruction; SO4 = 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.

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 lowa 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. WORKFORCE