

Using Data and Information to Align Economic and Workforce Development in the Natural Resources Sector



Nevada Governor's Office of
ECONOMIC DEVELOPMENT

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Nevada's Economic Development Sectors

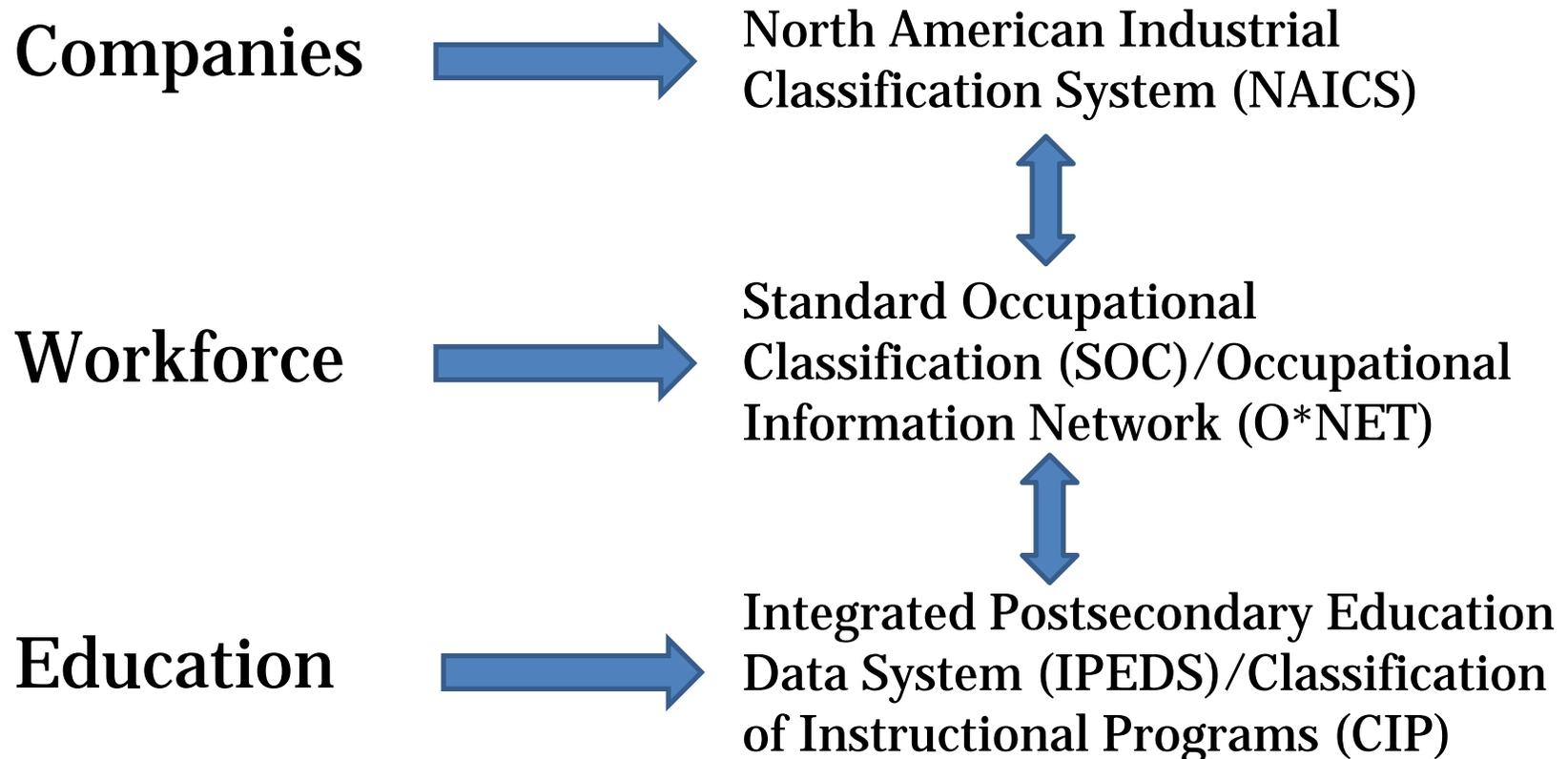
Sector	Number of Jobs	Percent of All Nevada Jobs	Average Annual Wage*	Jobs Multiplier	Location Quotient	Percent above or below National Concentration
Aerospace and Defense	13,110	1.0%	\$96,207	2.04	0.67	-33%
Business Information Technology Ecosystems	59,367	4.5%	\$55,949	2.11	0.67	-33%
Health and Medical Services	106,222	8.1%	\$65,123	1.81	0.66	-34%
Manufacturing and Logistics	116,631	8.9%	\$69,497	2.68	0.59	-41%
Natural Resources	49,052	3.8%	\$76,333	2.69	0.63	-37%
Agriculture	7,777	0.6%	\$46,048	2.06	0.30	-70%
Clean Energy	25,759	2.0%	\$79,136	3.12	0.81	-19%
Water Technologies	33,001	2.5%	\$78,659	2.41	0.84	-16%
Mining	14,028	1.1%	\$107,221	2.29	2.35	135%
Tourism, Gaming, and Entertainment	408,856	31.3%	\$37,047	1.82	2.45	145%

*The average earnings per worker in the region. Includes wages, salaries, supplements (additional employee benefits), and proprietor income.

Strategic Location Drivers

- Availability of a Qualified Workforce
- Competitive Cost Environment
 - Labor, Utilities, Real Estate, Transportation, Taxes
- Favorable Logistics/Accessibility
 - Air, Highway, Rail, Port
- Favorable Business Environment
 - Taxes, Incentives, Permitting
- Quality of place
 - Ability to recruit/relocate key workforce

The Economic and Workforce Information and Data Pipeline



Tying Economic and Workforce Development Together

Identifying high demand occupations

- Employment Projections
- Burning Glass Technologies
- Target Sector approach
- Job Openings
- Brookings STEM Score

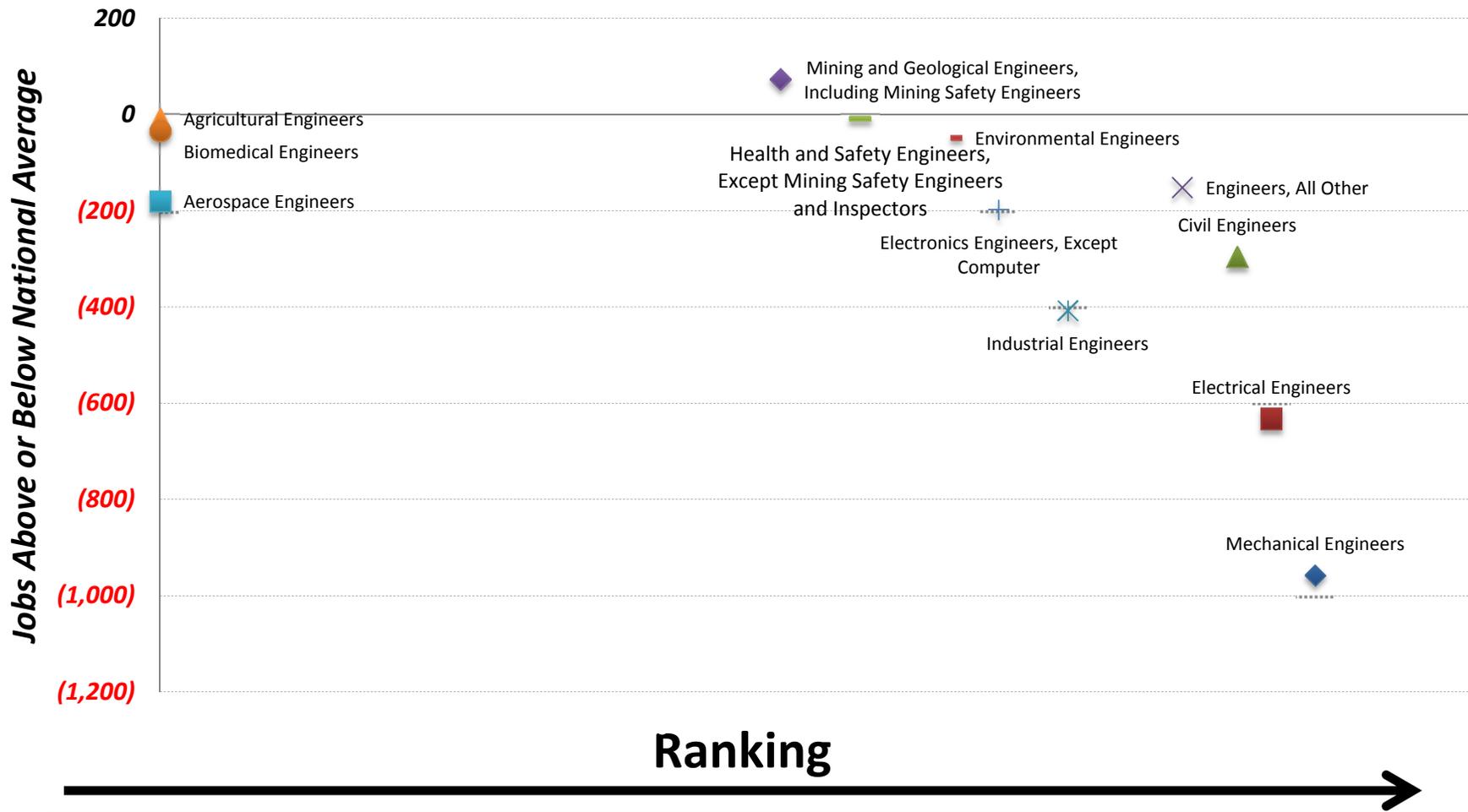
Top 20 High Demand Natural Resource Industry Occupation Groups

Typical Entry Level Education/On-The-Job Training

Bachelor's degree
Associate's degree/Postsecondary non-degree award
High school diploma/Postsecondary non-degree award with OJT
High school diploma/Less than high school with OJT

Occupation Group Description	Consensus Rank	2016 Jobs	Jobs Above or Below National Average	Median Hourly Earnings
Engineers	1	2,579	(3,152)	\$40.73 ←
Drafters, Engineering Technicians, and Mapping Technicians	2	2,037	(607)	\$27.29 ←
Computer Occupations	3	928	(946)	\$34.54 ←
Other Installation, Maintenance, and Repair Occupations	4	4,356	337	\$22.82
Business Operations Specialists	5	1,752	(747)	\$27.40
Material Moving Workers	6	1,812	(151)	\$13.12
Construction Trades Workers	7	6,957	1,398	\$22.26
Other Production Occupations	8	1,677	(1,593)	\$15.74
Life, Physical, and Social Science Technicians	9	860	(17)	\$22.74
Metal Workers and Plastic Workers	10	804	(1,240)	\$17.30
Operations Specialties Managers	11	693	(209)	\$41.66
Food Processing Workers	12	703	(295)	\$14.11
Other Management Occupations	13	1,583	137	\$37.29
Physical Scientists	14	652	(57)	\$40.78
Agricultural Workers	15	1,845	(6,077)	\$16.56 ←
Material Recording, Scheduling, Dispatching, and Distributing Workers	16	1,141	85	\$15.10
Motor Vehicle Operators	17	1,094	153	\$16.35
Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	18	337	(4)	\$22.77
Financial Clerks	19	900	(55)	\$16.49
Assemblers and Fabricators	20	962	(1,105)	\$12.48

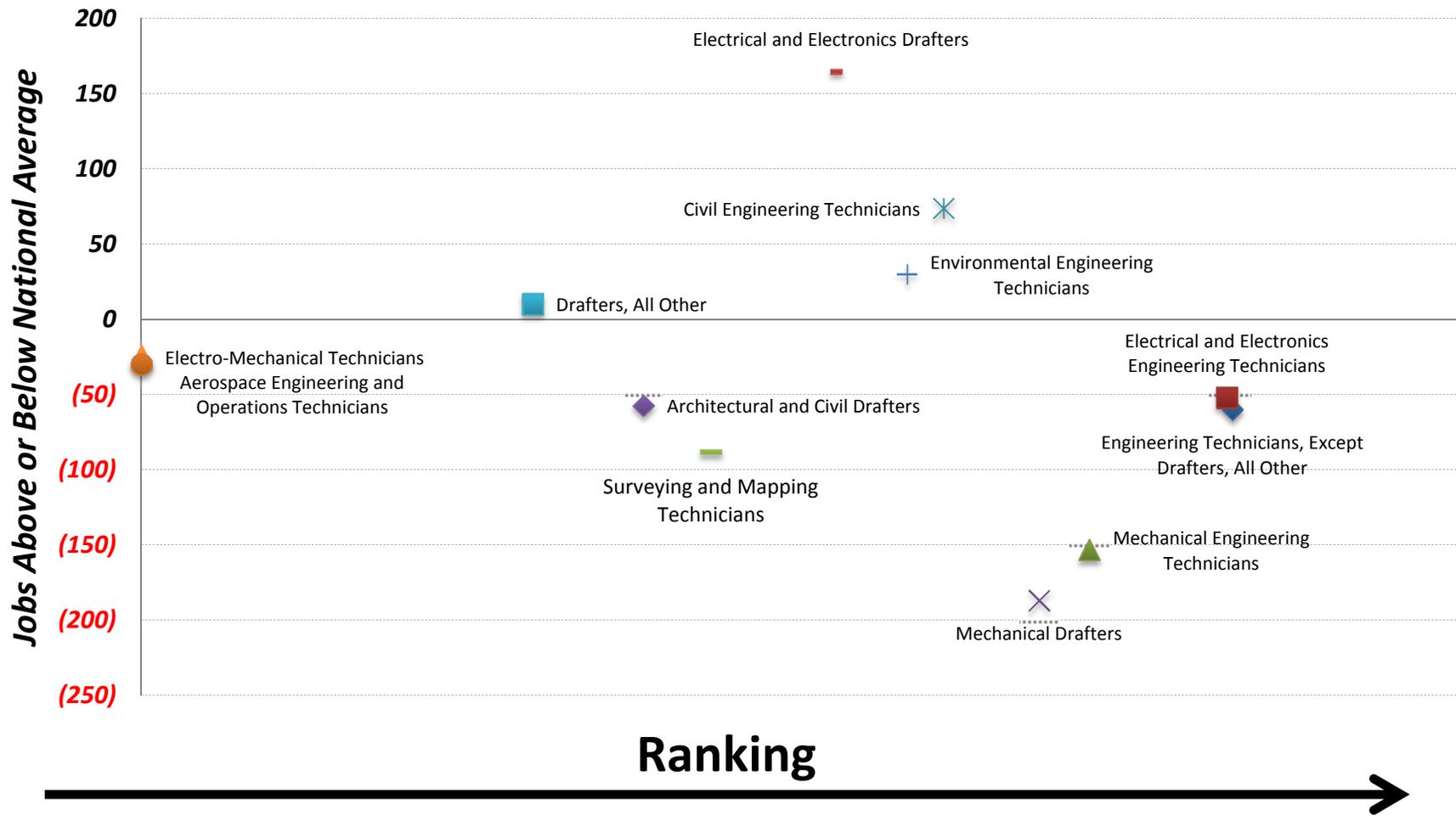
Drilling Down into the Detail: Engineers



Drilling Down into the Detail: Engineers

Occupation Description	Consensus Rank	Jobs	Median Hourly Earnings	Jobs Above or Below National Average	Typical Entry Level Education	Typical On-The-Job Training
Mechanical Engineers	1	313	\$36.02	(958)	Bachelor's degree	None
Electrical Engineers	2	282	\$41.52	(632)	Bachelor's degree	None
Civil Engineers	4	922	\$40.23	(296)	Bachelor's degree	None
Engineers, All Other	9	249	\$48.15	(152)	Bachelor's degree	None
Industrial Engineers	21	185	\$37.60	(408)	Bachelor's degree	None
Electronics Engineers, Except Computer	34	178	\$41.29	(198)	Bachelor's degree	None
Environmental Engineers	45	135	\$40.34	(48)	Bachelor's degree	None
Health and Safety Engineers, Except Mining Safety Engineers and Mining and Geological Engineers, Including Mining Safety Engineers	70	65	\$36.29	(9)	Bachelor's degree	None
	102	86	\$42.68	74	Bachelor's degree	None
Aerospace Engineers	160	18	\$38.95	(180)	Bachelor's degree	None
Agricultural Engineers	160	5	\$33.46	(9)	Bachelor's degree	None
Biomedical Engineers	160	5	\$40.56	(34)	Bachelor's degree	None

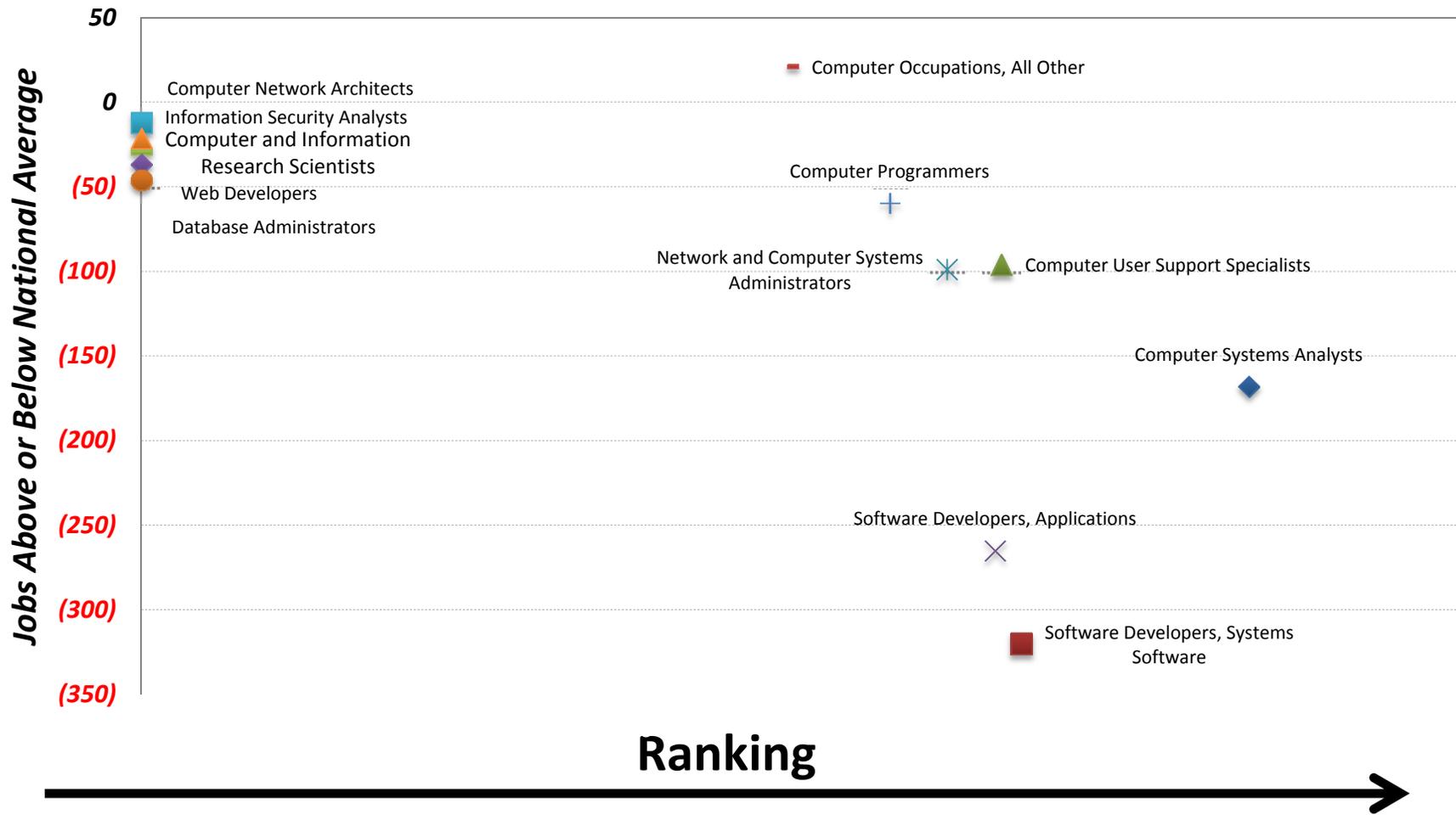
Drilling Down into the Detail: Drafters, Engineering Technicians, and Mapping Technicians



Drilling Down into the Detail: Drafters, Engineering Technicians, and Mapping Technicians

Occupation Description	Consensus Rank	Jobs	Median Hourly Earnings	Jobs Above or Below National Average	Typical Entry Level Education	Typical On-The-Job Training
Engineering Technicians, Except Drafters, All Other	16	102	\$31.92	(60)	Associate's degree	None
Electrical and Electronics Engineering Technicians	17	446	\$32.26	(52)	Associate's degree	None
Mechanical Engineering Technicians	37	96	\$21.74	(153)	Associate's degree	None
Mechanical Drafters	46	71	\$21.88	(187)	Associate's degree	None
Civil Engineering Technicians	73	316	\$26.18	74	Associate's degree	None
Environmental Engineering Technicians	85	102	\$31.65	30	Associate's degree	None
Electrical and Electronics Drafters	106	332	\$27.32	164	Associate's degree	None
Surveying and Mapping Technicians	130	82	\$28.58	(88)	High school diploma or equivalent	Moderate-term on-the-job training
Architectural and Civil Drafters	138	361	\$21.24	(57)	Associate's degree	None
Drafters, All Other	154	55	\$22.24	10	Associate's degree	None
Aerospace Engineering and Operations Technicians	160	5	\$34.69	(25)	Associate's degree	None
Electro-Mechanical Technicians	160	17	\$23.10	(30)	Associate's degree	None

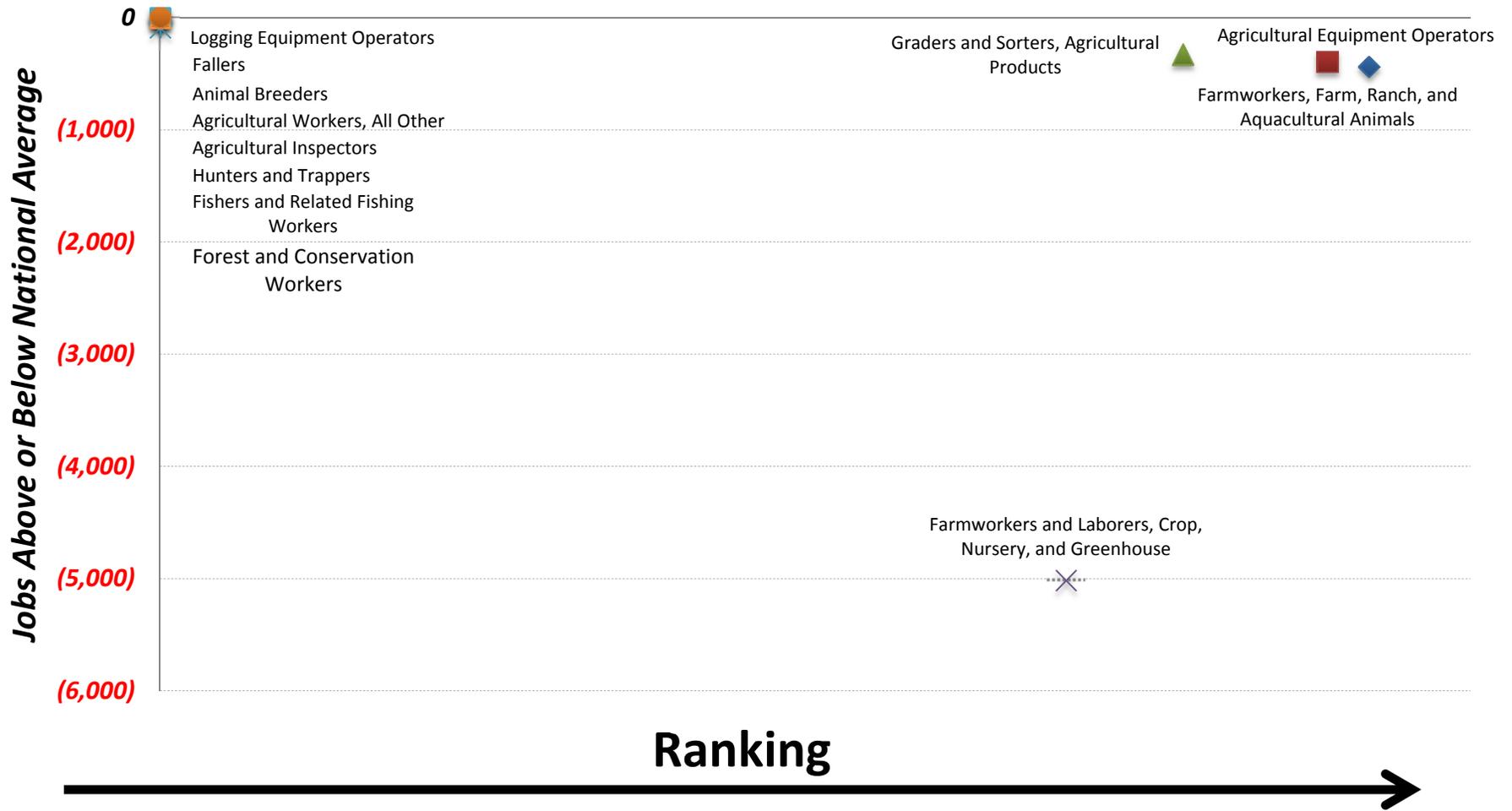
Drilling Down into the Detail: Computer Occupations



Drilling Down into the Detail: Computer Occupations

Occupation Description	Consensus Rank	Jobs	Median Hourly Earnings	Jobs Above or Below National Average	Typical Entry Level Education	Typical On-The-Job Training
Computer Systems Analysts	3	121	\$37.95	(168)	Bachelor's degree	None
Software Developers, Systems Software	27	112	\$41.02	(320)	Bachelor's degree	None
Computer User Support Specialists	29	74	\$21.37	(96)	Some college, no degree	None
Software Developers, Applications	32	207	\$42.81	(265)	Bachelor's degree	None
Network and Computer Systems Administrators	42	111	\$37.45	(99)	Bachelor's degree	None
Computer Programmers	56	68	\$38.50	(60)	Bachelor's degree	None
Computer Occupations, All Other	94	84	\$31.07	21	Bachelor's degree	None
Computer and Information Research Scientists	160	5	\$53.13	(30)	Doctoral or professional degree	None
Information Security Analysts	160	27	\$33.13	(37)	Bachelor's degree	None
Web Developers	160	19	\$27.14	(12)	Associate's degree	None
Database Administrators	160	33	\$38.25	(21)	Bachelor's degree	None
Computer Network Architects	160	29	\$44.61	(46)	Bachelor's degree	None

Drilling Down into the Detail: Agricultural Workers



Drilling Down into the Detail: Agricultural Workers

Occupation Description	Consensus Rank	Jobs	Median Hourly Earnings	Jobs Above or Below National Average	Typical Entry Level Education	Typical On-The-Job Training
Agricultural Equipment Operators	52	141	\$17.03	(439)	No formal educational credential	Short-term on-the-job training
Farmworkers, Farm, Ranch, and Aquacultural Animals	59	165	\$15.83	(393)	No formal educational credential	Short-term on-the-job training
Graders and Sorters, Agricultural Products	96	62	\$11.07	(329)	No formal educational credential	Short-term on-the-job training
Farmworkers and Laborers, Crop, Nursery, and Greenhouse	116	1,426	\$16.36	(5,016)	No formal educational credential	Short-term on-the-job training
Logging Equipment Operators	160	5	\$26.60	(91)	High school diploma or equivalent	Moderate-term on-the-job training
Agricultural Workers, All Other	160	26	\$16.03	(34)	No formal educational credential	Short-term on-the-job training
Fishers and Related Fishing Workers	160	23	\$23.10	(15)	No formal educational credential	Moderate-term on-the-job training
Forest and Conservation Workers	160	5	\$13.87	(11)	High school diploma or equivalent	Moderate-term on-the-job training
Animal Breeders	160	18	\$27.78	(9)	High school diploma or equivalent	Short-term on-the-job training
Agricultural Inspectors	160	5	\$27.01	(7)	Bachelor's degree	Moderate-term on-the-job training
Hunters and Trappers	160	5	\$24.35	(3)	No formal educational credential	Short-term on-the-job training
Fallers	160	0	\$31.07	0	High school diploma or equivalent	Moderate-term on-the-job training

Top 25 High Demand Occupations in the Natural Resources Sector by Consensus Rank

Description	Consensus Rank	2016 Jobs	Median Hourly Earnings	Jobs Above or Below National Average	Typical Entry Level Education	Typical On-The-Job Training
Mechanical Engineers	1	313	\$36.02	(958)	Bachelor's degree	None
Electrical Engineers	2	282	\$41.52	(632)	Bachelor's degree	None
Computer Systems Analysts	3	121	\$37.95	(168)	Bachelor's degree	None
Civil Engineers	4	922	\$40.23	(296)	Bachelor's degree	None
Architectural and Engineering Managers	5	402	\$56.37	(321)	Bachelor's degree	None
Market Research Analysts and Marketing Specialists	6	114	\$25.71	(127)	Bachelor's degree	None
First-Line Supervisors of Production and Operating Wor	7	425	\$27.55	(432)	High school diploma or equivalent	None
Inspectors, Testers, Sorters, Samplers, and Weighers	8	510	\$14.91	(452)	High school diploma or equivalent	Moderate-term on-the-job training
Engineers, All Other	9	249	\$48.15	(152)	Bachelor's degree	None
Production Workers, All Other	10	101	\$19.37	(107)	High school diploma or equivalent	Moderate-term on-the-job training
Industrial Production Managers	11	158	\$38.09	(149)	Bachelor's degree	None
First-Line Supervisors of Mechanics, Installers, and Rej	12	378	\$33.65	(93)	High school diploma or equivalent	None
Electricians	13	227	\$27.04	23	High school diploma or equivalent	Apprenticeship
Production, Planning, and Expediting Clerks	14	170	\$19.38	(121)	High school diploma or equivalent	Moderate-term on-the-job training
Heating, Air Conditioning, and Refrigeration Mechanics	15	2,308	\$27.21	271	Postsecondary nondegree award	Long-term on-the-job training
Engineering Technicians, Except Drafters, All Other	16	102	\$31.92	(60)	Associate's degree	None
Electrical and Electronics Engineering Technicians	17	446	\$32.26	(52)	Associate's degree	None
Industrial Truck and Tractor Operators	18	228	\$16.77	(139)	No formal educational credential	Short-term on-the-job training
Laborers and Freight, Stock, and Material Movers, Han	19	813	\$12.79	21	No formal educational credential	Short-term on-the-job training
Technical Writers	20	52	\$31.19	(43)	Bachelor's degree	Short-term on-the-job training
Industrial Engineers	21	185	\$37.60	(408)	Bachelor's degree	None
Machinists	22	129	\$17.17	(297)	High school diploma or equivalent	Long-term on-the-job training
Life, Physical, and Social Science Technicians, All Oth	23	149	\$20.63	14	Associate's degree	None
Industrial Machinery Mechanics	24	230	\$27.44	(206)	High school diploma or equivalent	Long-term on-the-job training
Food Preparation Workers	25	60	\$12.85	13	No formal educational credential	Short-term on-the-job training

Top 25 High Demand Natural Resource Occupations Sorted by Jobs Below National Average

Description	Consensus Rank	2016 Jobs	Median Hourly Earnings	Jobs Above or Below National Average	Typical Entry Level Education	Typical On-The-Job Training
Farmworkers and Laborers, Crop, Nursery, and Greenh	116	1,426	\$16.36	(5,016)	No formal educational credential	Short-term on-the-job training
Mechanical Engineers	1	313	\$36.02	(958)	Bachelor's degree	None
Electrical Engineers	2	282	\$41.52	(632)	Bachelor's degree	None
Team Assemblers	49	545	\$11.84	(621)	High school diploma or equivalent	Moderate-term on-the-job training
Packaging and Filling Machine Operators and Tenders	50	367	\$13.24	(606)	High school diploma or equivalent	Moderate-term on-the-job training
Plumbers, Pipefitters, and Steamfitters	128	2,425	\$23.43	(529)	High school diploma or equivalent	Apprenticeship
Electrical Power-Line Installers and Repairers	31	344	\$37.47	(485)	High school diploma or equivalent	Long-term on-the-job training
Slaughterers and Meat Packers	160	29	\$12.75	(469)	No formal educational credential	Short-term on-the-job training
Farmers, Ranchers, and Other Agricultural Managers	123	220	\$44.42	(457)	High school diploma or equivalent	None
Inspectors, Testers, Sorters, Samplers, and Weighers	8	510	\$14.91	(452)	High school diploma or equivalent	Moderate-term on-the-job training
Agricultural Equipment Operators	52	141	\$17.03	(439)	No formal educational credential	Short-term on-the-job training
Secretaries and Administrative Assistants, Except Leg	80	891	\$17.21	(433)	High school diploma or equivalent	Short-term on-the-job training
First-Line Supervisors of Production and Operating Wor	7	425	\$27.55	(432)	High school diploma or equivalent	None
Industrial Engineers	21	185	\$37.60	(408)	Bachelor's degree	None
Farmworkers, Farm, Ranch, and Aquacultural Animals	59	165	\$15.83	(393)	No formal educational credential	Short-term on-the-job training
Electrical and Electronic Equipment Assemblers	64	280	\$15.50	(373)	High school diploma or equivalent	Moderate-term on-the-job training
Graders and Sorters, Agricultural Products	96	62	\$11.07	(329)	No formal educational credential	Short-term on-the-job training
Architectural and Engineering Managers	5	402	\$56.37	(321)	Bachelor's degree	None
Software Developers, Systems Software	27	112	\$41.02	(320)	Bachelor's degree	None
Machinists	22	129	\$17.17	(297)	High school diploma or equivalent	Long-term on-the-job training
Civil Engineers	4	922	\$40.23	(296)	Bachelor's degree	None
Software Developers, Applications	32	207	\$42.81	(265)	Bachelor's degree	None
Welders, Cutters, Solderers, and Brazers	39	295	\$19.85	(246)	High school diploma or equivalent	Moderate-term on-the-job training
Heavy and Tractor-Trailer Truck Drivers	82	589	\$22.41	(239)	Postsecondary nondegree award	Short-term on-the-job training
Sales Representatives, Wholesale and Manufacturing,	75	551	\$26.97	(237)	High school diploma or equivalent	Moderate-term on-the-job training

Questions for Sector Council Members

In your experience:

1. Which of the discussed occupations do you find most difficult to fill?
2. Which of these occupations do you believe will increase in demand because of new and emerging industry trends?
 - Please share your rationale.
3. Do you believe the typical entry education and experience levels identified by the Bureau of Labor Statistics are correct?
 - If not, please share the specific education (i.e., certification program, degree, etc.) and experience you typically look for when sourcing talent within your sector.

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