

Using Data and Information to Align Economic and Workforce Development in the Aerospace and Defense Sector



Nevada Governor's Office of
ECONOMIC DEVELOPMENT

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Nevada's Economic Development Sectors

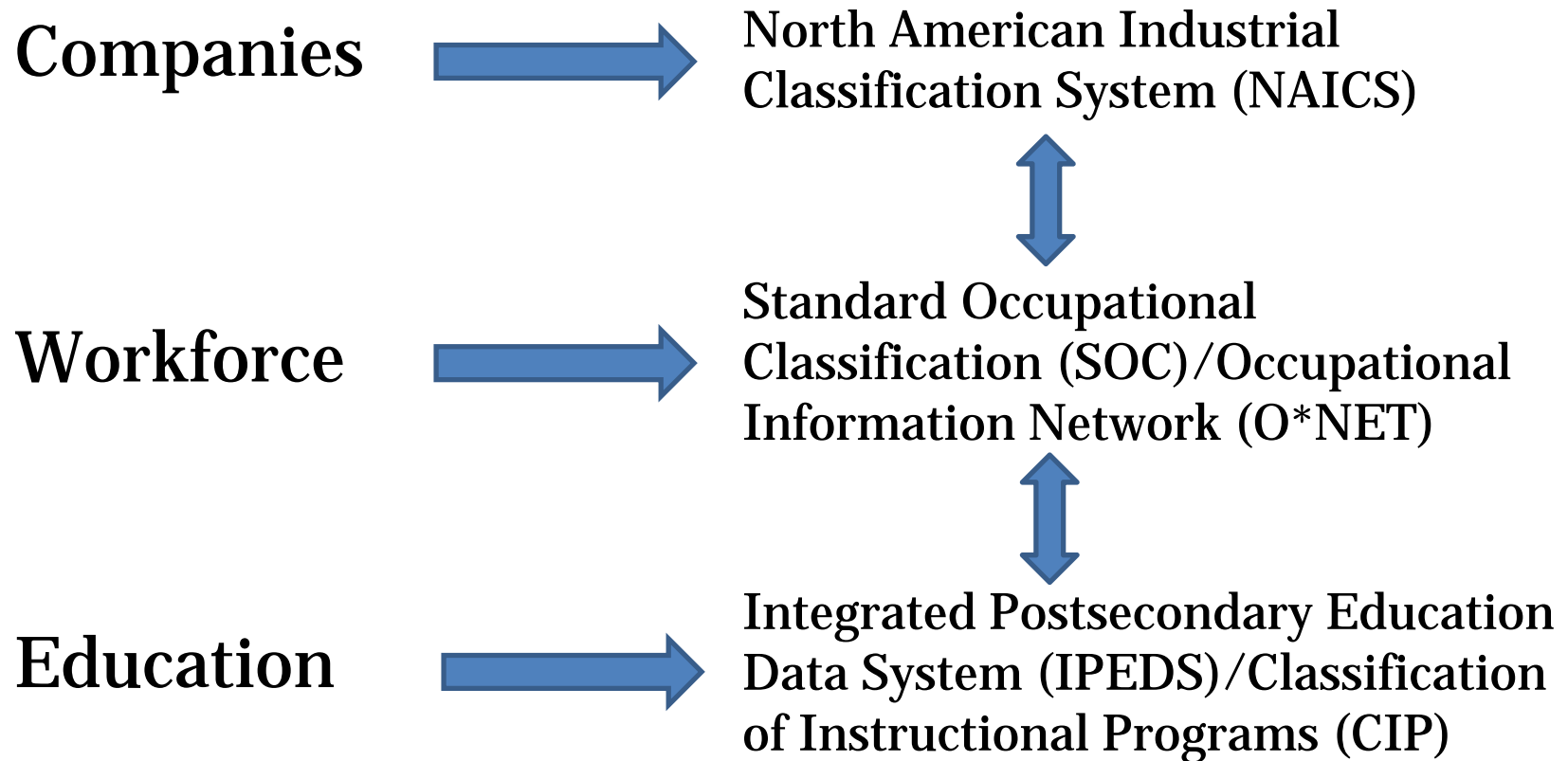
Sector	Number of Jobs	Percent of All Nevada Jobs	Average Annual Wage*	Jobs Multiplier	Location Quotient	Percent above or below National Concentration
Aerospace and Defense	13,110	1.0%	\$96,207	2.04	0.67	-33%
Business Information Technology Ecosystems	59,367	4.5%	\$55,949	2.11	0.67	-33%
Health and Medical 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%
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

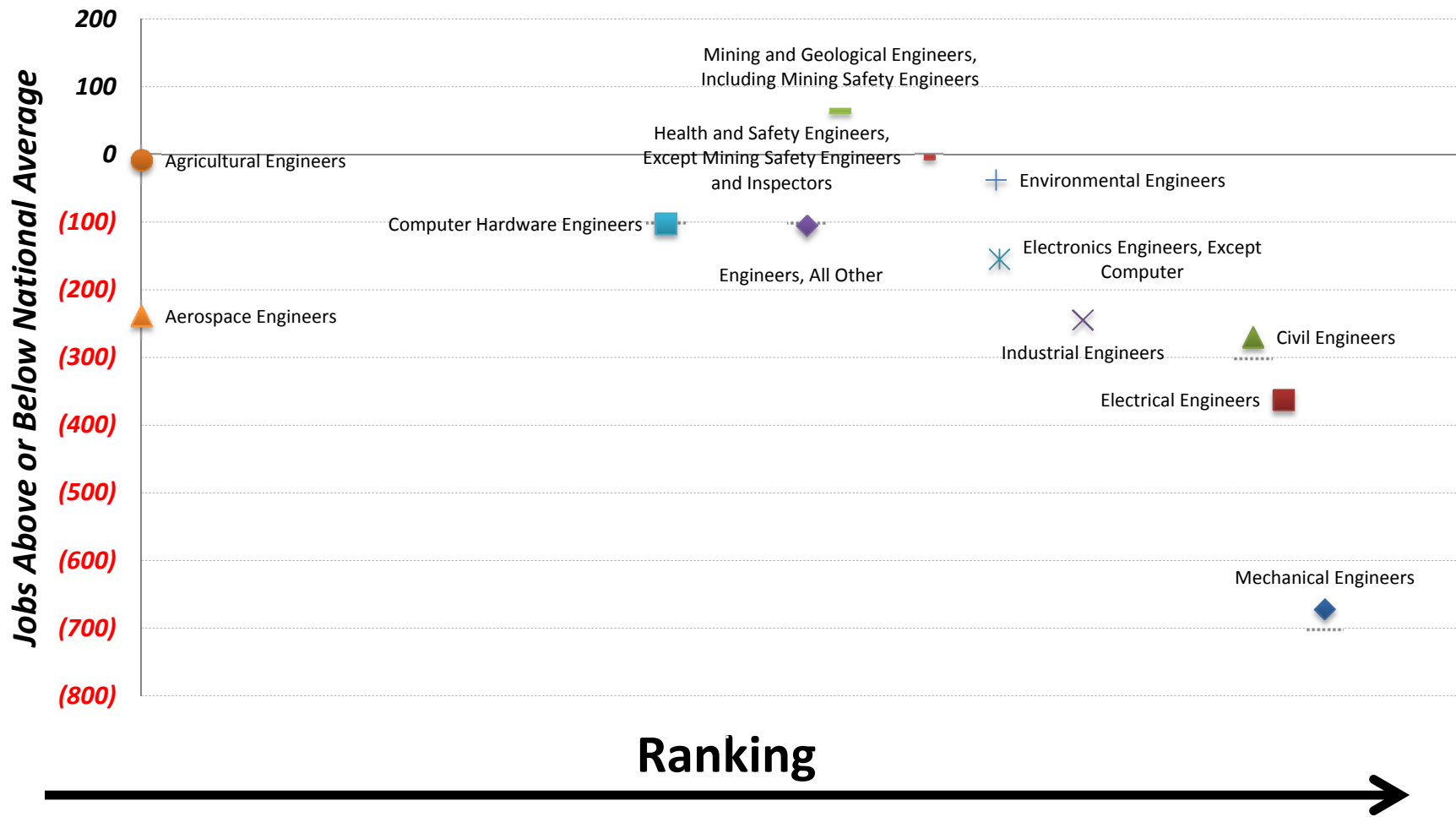
Top 20 High Demand Aerospace and Defense Occupation Groups

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	1,977	(2,416)	\$40.73	←
Drafters, Engineering Technicians, and Mapping Technicians	2	1,406	(419)	\$27.29	←
Computer Occupations	3	576	(587)	\$34.54	←
Business Operations Specialists	4	661	(282)	\$27.40	
Material Recording, Scheduling, Dispatching, and Distributing Workers	5	343	26	\$15.10	
Metal Workers and Plastic Workers	6	491	(757)	\$17.30	←
Operations Specialties Managers	7	255	(77)	\$41.66	
Other Management Occupations	8	592	51	\$37.29	
Life, Physical, and Social Science Technicians	9	278	(6)	\$22.74	
Physical Scientists	10	402	(35)	\$40.78	
Information and Record Clerks	11	332	19	\$14.65	
Other Production Occupations	12	269	(255)	\$15.74	
Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	13	528	(6)	\$22.77	
Material Moving Workers	14	318	(27)	\$13.12	
Other Installation, Maintenance, and Repair Occupations	15	220	17	\$22.82	
Sales Representatives, Wholesale and Manufacturing	16	78	(42)	\$28.01	
Top Executives	17	422	(32)	\$42.62	
Assemblers and Fabricators	18	178	(204)	\$12.48	
Life Scientists	19	218	(263)	\$33.19	
Other Transportation Workers	20	320	160	\$13.13	

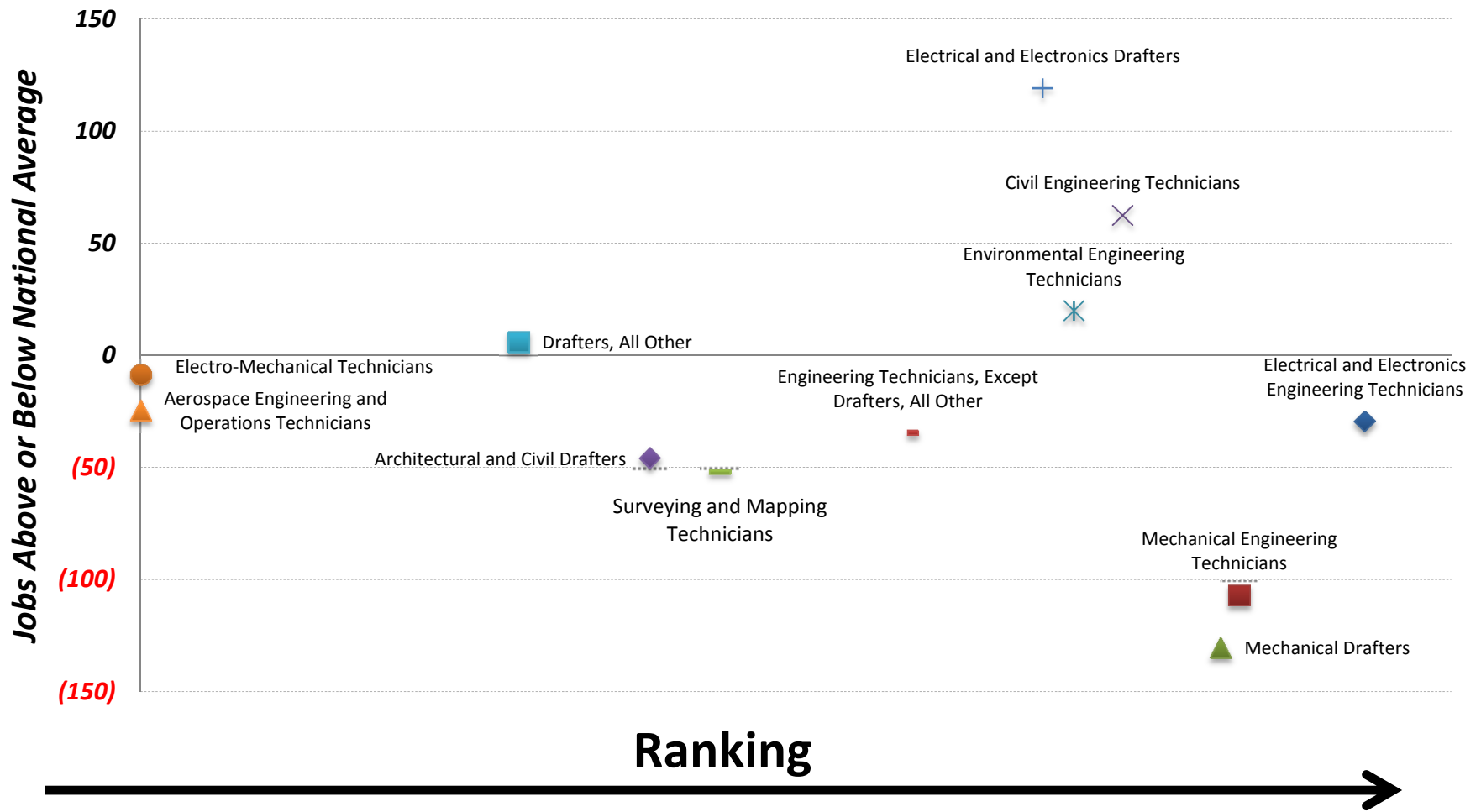
Drilling Down into the Detail: Engineers



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	219	\$36.02	(672)	Bachelor's degree	None
Electrical Engineers	2	161	\$41.52	(362)	Bachelor's degree	None
Civil Engineers	4	842	\$40.23	(270)	Bachelor's degree	None
Industrial Engineers	28	111	\$37.60	(244)	Bachelor's degree	None
Electronics Engineers, Except Computer	38	138	\$41.29	(154)	Bachelor's degree	None
Environmental Engineers	39	105	\$40.34	(37)	Bachelor's degree	None
Health and Safety Engineers, Except Mining Safety Engineers and Mining and Geological Engineers, Including Mining Safety Engineers	46	30	\$36.29	(4)	Bachelor's degree	None
Engineers, All Other	65	173	\$48.15	(105)	Bachelor's degree	None
Computer Hardware Engineers	86	32	\$37.90	(102)	Bachelor's degree	None
Aerospace Engineers	104	24	\$38.95	(239)	Bachelor's degree	None
Agricultural Engineers	104	5	\$33.46	(9)	Bachelor's degree	None

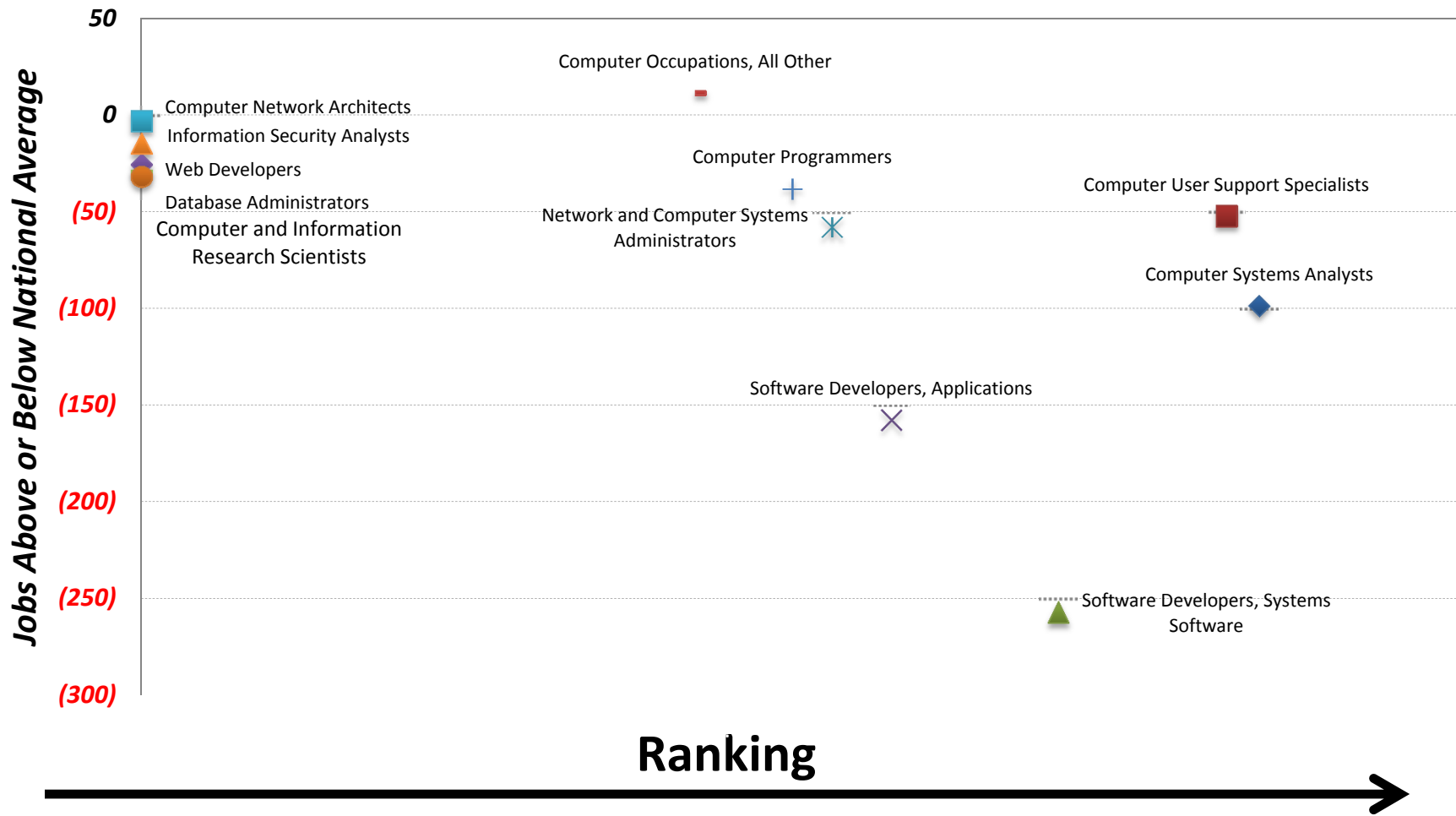
Drilling Down into the Detail: Drafters, Engineering Technicians, and Mapping Technicians



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
Electrical and Electronics Engineering Technicians	24	252	\$32.26	(29)	Associate's degree	None
Mechanical Engineering Technicians	37	67	\$21.74	(107)	Associate's degree	None
Mechanical Drafters	40	49	\$21.88	(130)	Associate's degree	None
Civil Engineering Technicians	47	268	\$26.18	63	Associate's degree	None
Environmental Engineering Technicians	53	68	\$31.65	20	Associate's degree	None
Electrical and Electronics Drafters	58	241	\$27.32	119	Associate's degree	None
Engineering Technicians, Except Drafters, All Other	71	59	\$31.92	(35)	Associate's degree	None
Surveying and Mapping Technicians	95	48	\$28.58	(52)	High school diploma or equivalent	Moderate-term on-the-job training
Architectural and Civil Drafters	98	288	\$21.24	(46)	Associate's degree	None
Drafters, All Other	102	33	\$22.24	6	Associate's degree	None
Aerospace Engineering and Operations Technicians	104	5	\$34.69	(25)	Associate's degree	None
Electro-Mechanical Technicians	104	5	\$23.10	(9)	Associate's degree	None

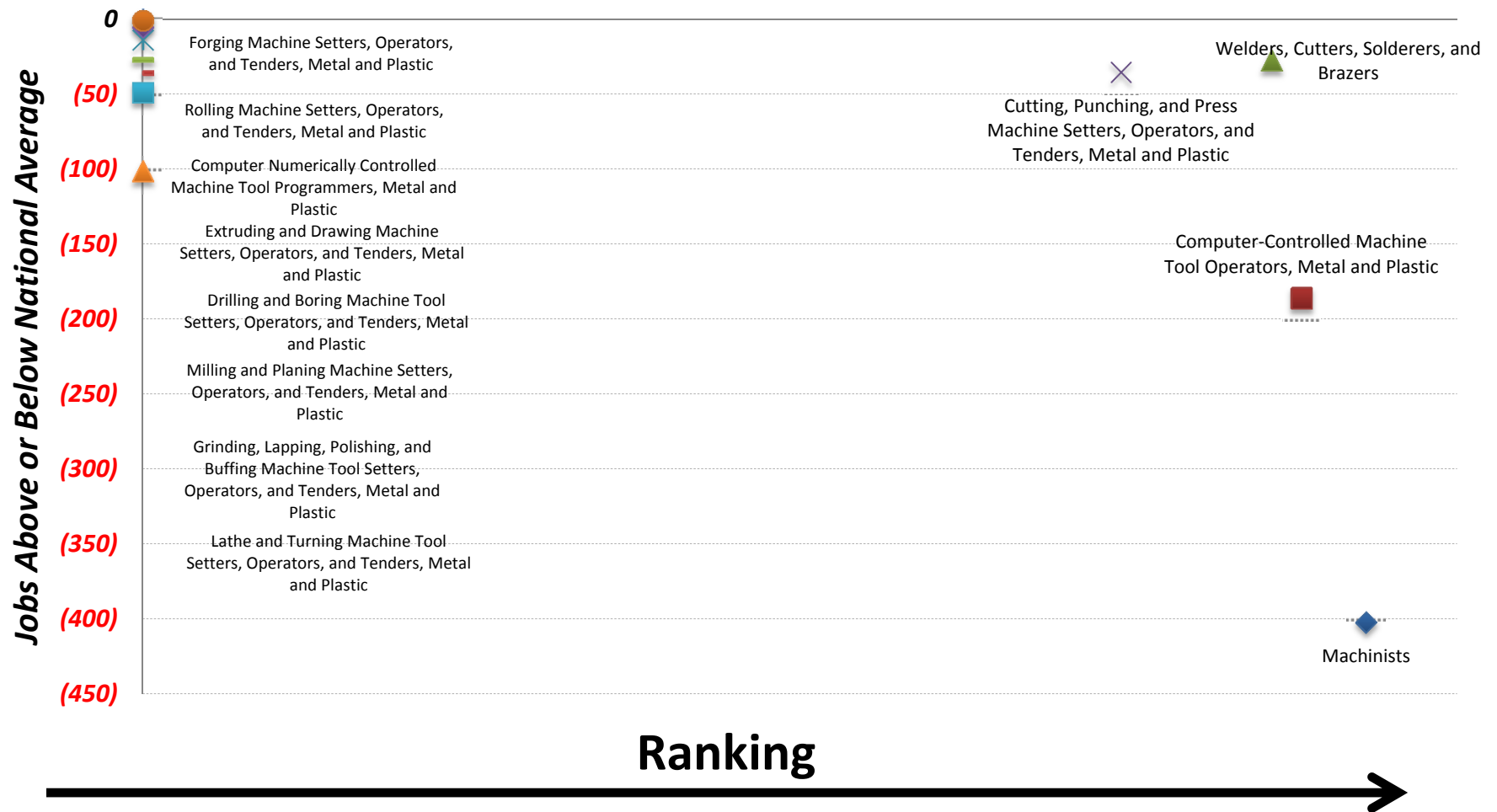
Drilling Down into the Detail: Computer Occupations



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	71	\$37.95	(99)	Bachelor's degree	None
Computer User Support Specialists	7	41	\$21.37	(52)	Some college, no degree	None
Software Developers, Systems Software	30	90	\$41.02	(257)	Bachelor's degree	None
Software Developers, Applications	51	123	\$42.81	(158)	Bachelor's degree	None
Network and Computer Systems Administrators	62	65	\$37.45	(58)	Bachelor's degree	None
Computer Programmers	66	44	\$38.50	(38)	Bachelor's degree	None
Computer Occupations, All Other	81	45	\$31.07	11	Bachelor's degree	None
Computer and Information Research Scientists	104	5	\$53.13	(30)	Doctoral or professional degree	None
Information Security Analysts	104	19	\$33.13	(26)	Bachelor's degree	None
Web Developers	104	5	\$27.14	(3)	Associate's degree	None
Database Administrators	104	23	\$38.25	(15)	Bachelor's degree	None
Computer Network Architects	104	20	\$44.61	(32)	Bachelor's degree	None

Drilling Down into the Detail: Metal and Plastic Workers



Drilling Down into the Detail: Metal and Plastic Workers

Occupation Description	Consensus Rank	Jobs	Median Hourly Earnings	Jobs Above or Below National Average	Typical Entry Level Education	Typical On-The-Job Training
Machinists	25	174	\$17.17	(402)	High school diploma or equivalent	Long-term on-the-job training
Computer-Controlled Machine Tool Operators, Metal and Plastic	31	85	\$16.28	(186)	High school diploma or equivalent	Moderate-term on-the-job training
Welders, Cutters, Solderers, and Brazers	36	33	\$19.85	(27)	High school diploma or equivalent	Moderate-term on-the-job training
Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal	49	36	\$15.61	(36)	High school diploma or equivalent	Moderate-term on-the-job training
Computer Numerically Controlled Machine Tool Programmers, Metal and	104	18	\$23.97	(14)	High school diploma or equivalent	Long-term on-the-job training
Extruding and Drawing Machine Setters, Operators, and Tenders, Metal	104	5	\$13.62	(0)	High school diploma or equivalent	Moderate-term on-the-job training
Forging Machine Setters, Operators, and Tenders, Metal and Plastic	104	5	\$14.45	(36)	High school diploma or equivalent	Moderate-term on-the-job training
Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	104	5	\$14.67	(27)	High school diploma or equivalent	Moderate-term on-the-job training
Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal	104	17	\$24.51	(6)	High school diploma or equivalent	Moderate-term on-the-job training
Grinding, Lapping, Polishing, and Buffing Machine Tool Setters,	104	27	\$14.04	(49)	High school diploma or equivalent	Moderate-term on-the-job training
Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal	104	27	\$15.19	(101)	High school diploma or equivalent	Moderate-term on-the-job training
Milling and Planing Machine Setters, Operators, and Tenders, Metal and	104	11	\$20.46	(1)	High school diploma or equivalent	Moderate-term on-the-job training

Top 25 High Demand Occupations in the Aerospace and Defense 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	219	\$36.02	(672)	Bachelor's degree	None
Electrical Engineers	2	161	\$41.52	(362)	Bachelor's degree	None
Computer Systems Analysts	3	71	\$37.95	(99)	Bachelor's degree	None
Civil Engineers	4	842	\$40.23	(270)	Bachelor's degree	None
Architectural and Engineering Managers	5	297	\$56.37	(237)	Bachelor's degree	None
Postsecondary Teachers	6	95	\$28.55	(54)	Doctoral or professional degree	None
Computer User Support Specialists	7	41	\$21.37	(52)	Some college, no degree	None
First-Line Supervisors of Production and Operating Wor	8	68	\$27.55	(69)	High school diploma or equivalent	None
First-Line Supervisors of Mechanics, Installers, and Rej	9	45	\$33.65	(11)	High school diploma or equivalent	None
Market Research Analysts and Marketing Specialists	10	50	\$25.71	(56)	Bachelor's degree	None
Inspectors, Testers, Sorters, Samplers, and Weighers	11	151	\$14.91	(134)	High school diploma or equivalent	Moderate-term on-the-job training
General and Operations Managers	12	378	\$40.00	(12)	Bachelor's degree	None
Industrial Production Managers	13	31	\$38.09	(29)	Bachelor's degree	None
Sales Representatives, Wholesale and Manufacturing,	14	39	\$26.97	(17)	High school diploma or equivalent	Moderate-term on-the-job training
First-Line Supervisors of Office and Administrative Supp	15	79	\$21.94	(15)	High school diploma or equivalent	None
Production, Planning, and Expediting Clerks	16	72	\$19.38	(52)	High school diploma or equivalent	Moderate-term on-the-job training
Automotive Service Technicians and Mechanics	17	40	\$18.73	(1)	Postsecondary nondegree award	Short-term on-the-job training
Accountants and Auditors	18	141	\$27.27	(45)	Bachelor's degree	None
Cost Estimators	19	42	\$26.71	2	Bachelor's degree	None
Construction Managers	20	81	\$36.62	18	Bachelor's degree	Moderate-term on-the-job training
Purchasing Agents, Except Wholesale, Retail, and Far	21	104	\$25.28	(23)	Bachelor's degree	Long-term on-the-job training
Maintenance and Repair Workers, General	22	104	\$21.82	10	High school diploma or equivalent	Long-term on-the-job training
Laborers and Freight, Stock, and Material Movers, Han	23	210	\$12.79	5	No formal educational credential	Short-term on-the-job training
Electrical and Electronics Engineering Technicians	24	252	\$32.26	(29)	Associate's degree	None
Machinists	25	174	\$17.17	(402)	High school diploma or equivalent	Long-term on-the-job training

Top 25 High Demand Aerospace and Defense 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
Mechanical Engineers	1	219	\$36.02	(672)	Bachelor's degree	None
Machinists	25	174	\$17.17	(402)	High school diploma or equivalent	Long-term on-the-job training
Electrical Engineers	2	161	\$41.52	(362)	Bachelor's degree	None
Civil Engineers	4	842	\$40.23	(270)	Bachelor's degree	None
Software Developers, Systems Software	30	90	\$41.02	(257)	Bachelor's degree	None
Industrial Engineers	28	111	\$37.60	(244)	Bachelor's degree	None
Aerospace Engineers	104	24	\$38.95	(239)	Bachelor's degree	None
Architectural and Engineering Managers	5	297	\$56.37	(237)	Bachelor's degree	None
Aircraft Structure, Surfaces, Rigging, and Systems Ass	104	21	\$19.94	(205)	High school diploma or equivalent	Moderate-term on-the-job training
Medical Scientists, Except Epidemiologists	61	61	\$46.15	(191)	Doctoral or professional degree	None
Computer-Controlled Machine Tool Operators, Metal an	31	85	\$16.28	(186)	High school diploma or equivalent	Moderate-term on-the-job training
Software Developers, Applications	51	123	\$42.81	(158)	Bachelor's degree	None
Electronics Engineers, Except Computer	38	138	\$41.29	(154)	Bachelor's degree	None
Inspectors, Testers, Sorters, Samplers, and Weighers	11	151	\$14.91	(134)	High school diploma or equivalent	Moderate-term on-the-job training
Secretaries and Administrative Assistants, Except Legi	74	271	\$17.21	(132)	High school diploma or equivalent	Short-term on-the-job training
Mechanical Drafters	40	49	\$21.88	(130)	Associate's degree	None
Biological Technicians	87	45	\$20.57	(114)	Bachelor's degree	None
Mechanical Engineering Technicians	37	67	\$21.74	(107)	Associate's degree	None
Engineers, All Other	65	173	\$48.15	(105)	Bachelor's degree	None
Executive Secretaries and Executive Administrative As:	80	97	\$25.35	(104)	High school diploma or equivalent	None
Computer Hardware Engineers	86	32	\$37.90	(102)	Bachelor's degree	None
Lathe and Turning Machine Tool Setters, Operators, an	104	27	\$15.19	(101)	High school diploma or equivalent	Moderate-term on-the-job training
Biochemists and Biophysicists	104	26	\$38.20	(99)	Doctoral or professional degree	None
Computer Systems Analysts	3	71	\$37.95	(99)	Bachelor's degree	None
Chemical Engineers	104	23	\$43.15	(86)	Bachelor's degree	None

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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