



ADVANCED
MANUFACTURING

2016

THE COLUMBIA-WILLAMETTE WORKFORCE COLLABORATIVE

Working together to support and develop regional talent.



ABOUT THE COLUMBIA-WILLAMETTE WORKFORCE COLLABORATIVE

The Columbia-Willamette Workforce Collaborative (Collaborative) is a partnership between the Clackamas Workforce Partnership, Workforce Southwest Washington (formerly Southwest Washington Workforce Development Council) and Worksystems: the three Workforce Development Boards covering the Portland-Vancouver Metropolitan Area. The Collaborative delivers a unified approach to serving industry, supporting economic development, and guiding public workforce training investments to better address the needs of our combined labor shed.

We know that people are willing to travel throughout the region for the best opportunities and that employers need the most qualified workers regardless of where they live. By working together, we can cultivate our regional talent pool and build the foundation for a strong economy.

ABOUT THIS REPORT

The Collaborative is focused on aligning and investing resources to support the workforce needs of four sectors: Advanced Manufacturing, Health Care, Software/IT, and Construction. Sectors are chosen based on factors such as their economic significance to the region, current number of openings and job growth projections, average wages that support self-sufficiency, and career ladder opportunities across the skill continuum. By examining labor market intelligence (such as the data contained in this report) and vetting the information with business partners, we are able to better understand industry trends, identify current and emergent workforce needs, and develop customized solutions for each sector.

ACKNOWLEDGEMENTS

Much of the data in this report was provided by the Oregon Employment Department and the Washington Employment Security Department, key partners in the region's workforce development system. The Collaborative is dedicated to assuring this information is regularly updated and presented in a way that advances the region's capacity to understand and align regional workforce supply with business demand in key industry sectors.

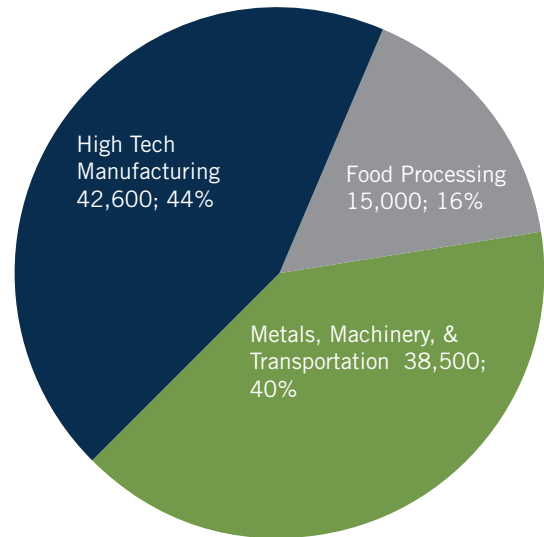
OVERVIEW

With nearly 100,000 jobs and a payroll of \$7.6 billion, Advanced Manufacturing accounts for 10 percent of the greater Portland region's private-sector employment and 15 percent of payroll.

The region's economy is highly dependent on the manufacturing sector. In 2014, the Portland Metro Area ranked third nationally among the nation's largest metro areas in the proportion of its GDP generated by manufacturing: 30 percent compared to 12 percent nationally.

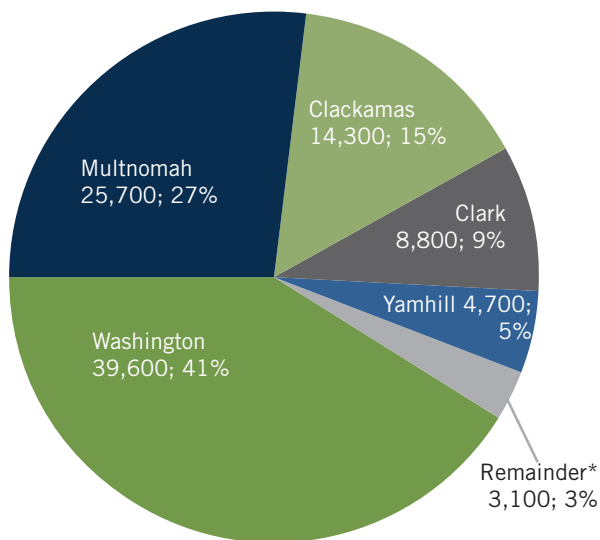
The Advanced Manufacturing sector includes high tech, metals, machinery, transportation equipment, and food processing.

ADVANCED MANUFACTURING EMPLOYMENT BY COMPONENT GREATER PORTLAND REGION: 2015



Source: EMSI

ADVANCED MANUFACTURING JOBS BY COUNTY GREATER PORTLAND REGION: 2015



Source: EMSI

*Columbia, Cowlitz, Skamania, Yamhill, Wahkiakum counties

Nearly half of the region's Advanced Manufacturing jobs are located in Washington County, due largely to Intel.

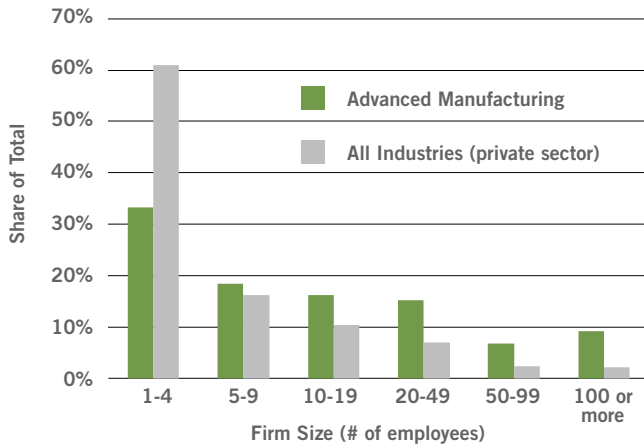
Multnomah County has a small concentration of jobs relative to the overall size of its economy.

Clackamas County, with 14,300 jobs, accounts for 15 percent of the region's employment, and Southwest Washington chips in 2,700 jobs (3%).

Companies tend to be clustered along major road, water, and rail transportation corridors.

FIRM CHARACTERISTICS

**FIRMS BY SIZE IN
GREATER PORTLAND REGION: 2015**



Source: Oregon Employment Department, Washington Employment Security Department

The sector has more large firms and fewer smaller firms compared to the overall economy.

The average firm size is over three times larger than the average company in the region: 43 employees per company versus 15 across all industries.

More than half of the region's Advanced Manufacturing employment is in establishments employing more than 250 people.

MAJOR EMPLOYERS

Intel, the region's largest private-sector employer, had an economic impact totaling \$26.8 billion in 2012 (source: EcoNorthwest). Although not headquartered in the region, Intel's Washington County campuses comprise the company's largest and most advanced operations in the world.

Major 'home grown' or locally headquartered companies include Blount (recently sold but still headquartered here), ESCO, Leatherman, Electro Scientific (ESI), Cascade Steel, Reser's, Tektronix, and Oregon Iron Works.

The region's Advanced Manufacturing firms produce a wide variety of products including semiconductors, streetcars, engine parts, electrical vehicle chargers and oscilloscopes.

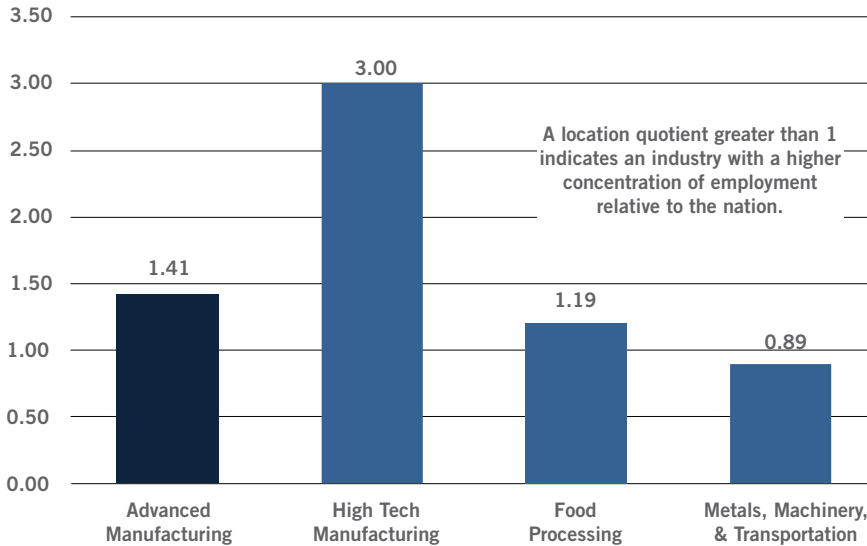
MAJOR EMPLOYERS: ADVANCED MANUFACTURING

| | |
|---|--|
| Blount International Inc. | Oregon Iron Works |
| Bob's Red Mill Natural Foods | PDM Steel Service Centers |
| Boeing | Precision Castparts/PCC Structurals |
| C-Tech Industries | Reser's Fine Foods Inc. |
| Daimler Trucks | Rockwell Collins Aerospace & Electronics, Inc. |
| Electro Scientific Industries Inc. | Sharp Microelectronics |
| Foster Farms | Siltronic Corporation |
| Gunderson | Steelscape, Inc. |
| Intel Corporation | Tektronix |
| KapStone | TriQuint |
| Leatherman Tool Group, Inc. | United States Bakery |
| LifePort, Inc. | Viasystems (Merix) |
| Linear Technology | Vigor Marine |
| Mondelez International (formerly Kraft Foods) | WaferTech |
| Norpac LLC | Waite Specialty Machine Inc. |
| Neil Jones Food Co | Weyerhaeuser |
| | Xerox Corporation |

Source: Equifax (EMSI), The Business Journal, The Oregonian

CONCENTRATION

**LOCATION QUOTIENTS
ADVANCED MANUFACTURING AND COMPONENTS
GREATER PORTLAND REGION: 2014**



Source: Oregon Employment Dept.; Washington Employment Security Dept., U.S. Bureau of Labor Statistics

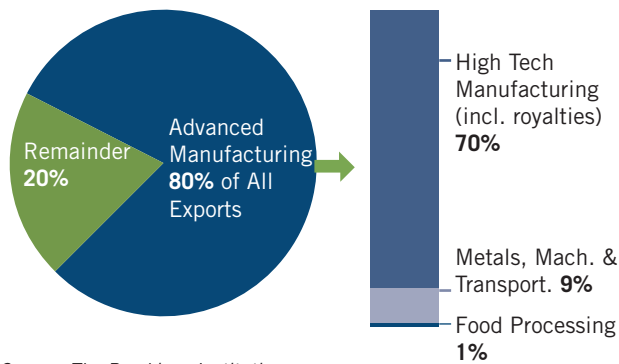
Location quotients are used to measure a sector's employment concentration in an area. A figure greater than one indicates a higher concentration of employment relative to the nation.

Advanced Manufacturing comprises a larger share of employment in the greater Portland region compared to the U.S. due primarily to the high tech component, where employment is three times as concentrated as the nation.

The greater Portland region has a competitive advantage in Advanced Manufacturing and is a net exporter of goods, driven by computer and electronic products, and metals.

EXPORTING

PORTLAND METRO AREA EXPORTS: 2014



Source: The Brookings Institution

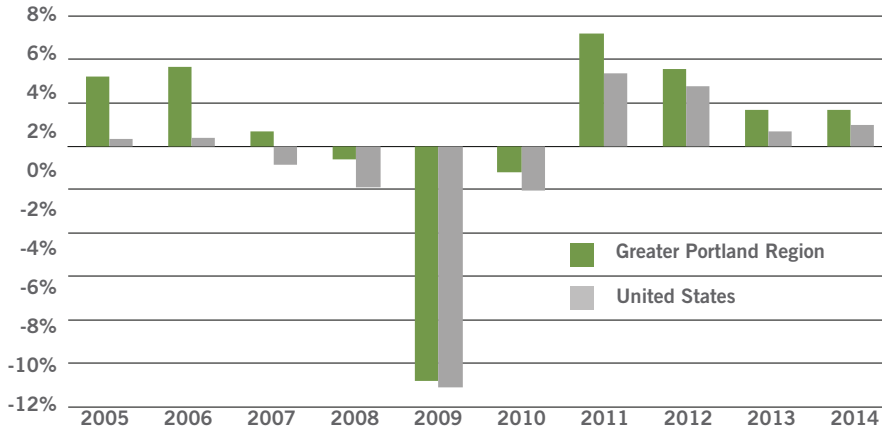
Exports are critical to the region's economy. According to the Brookings Institution, total exports directly supported more than 94,000 jobs in the metro area in 2014.

Advanced Manufacturing accounted for 80 percent of the Portland Metropolitan Area's total exports; the largest share among the nation's 100 largest metro areas. Exports are dominated by computer equipment.

The metro area's Gross Domestic Product grew by 5.8 percent in 2014, driven by a 6.6 percent growth in the manufacturing sector, the 13th fastest in the nation.

EMPLOYMENT TRENDS

**ADVANCED MANUFACTURING ANNUAL GROWTH RATES
GREATER PORTLAND REGION VS. UNITED STATES**



Source: EMSI

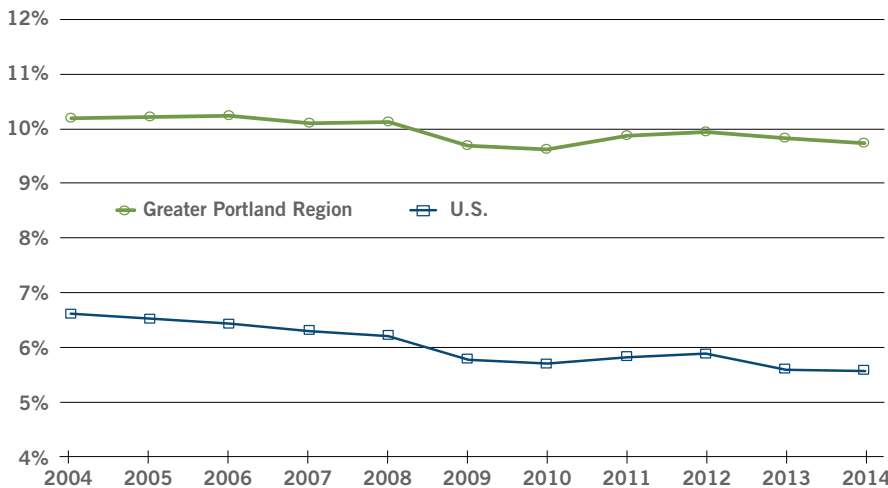
Advanced Manufacturing is a cyclical industry, both locally and nationally.

The Advanced Manufacturing sector in the greater Portland region consistently outperforms the nation.

The sector was hit hard during the Great Recession, losing 12 percent of its employment base (11,600 jobs).

However, the sector propelled the region out of the recession, growing nearly twice as fast as the rest of the economy between 2010 and 2012.

**ADVANCED MANUFACTURING'S SHARE OF EMPLOYMENT
GREATER PORTLAND REGION AND U.S.**

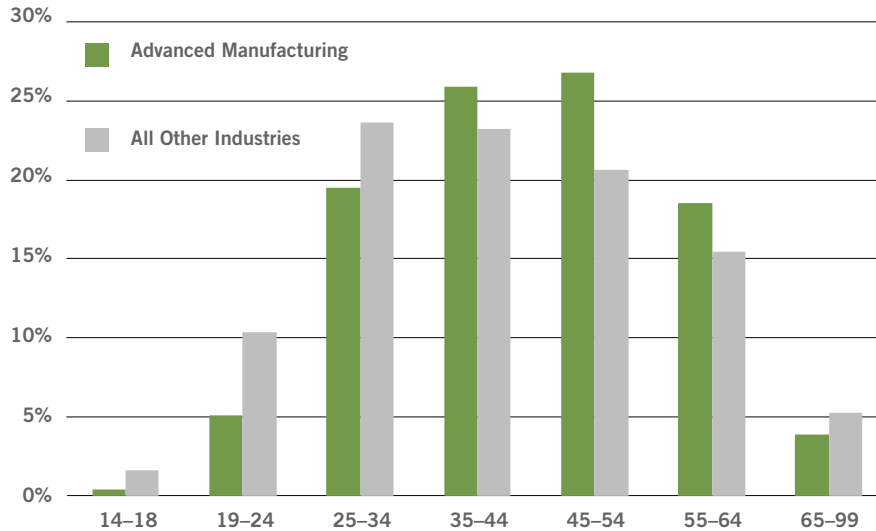


Source: Oregon Employment Dept.; Washington Employment Security Dept., U.S. Bureau of Labor Statistics

Although Advanced Manufacturing is declining as a share of total employment, the Portland region continues to have a much greater share compared to the nation.

CHARACTERISTICS OF THE WORKFORCE

**ADVANCED MANUFACTURING EMPLOYMENT BY AGE
GREATER PORTLAND REGION: 2014**



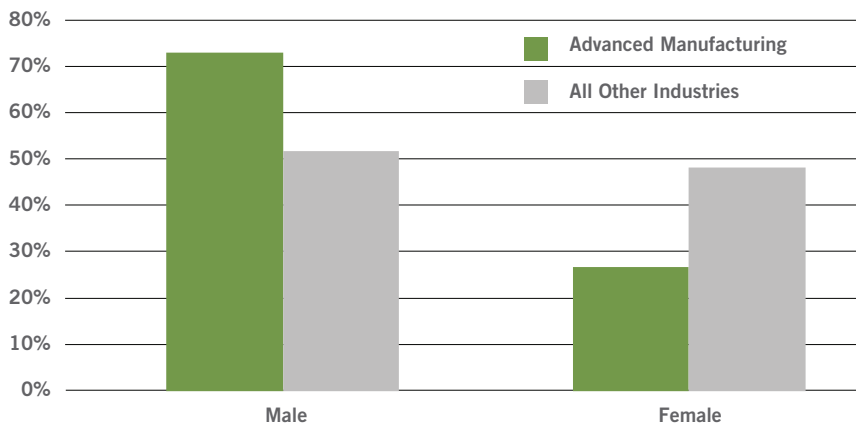
Source: U.S. Census Bureau; Longitudinal Employer-Household Dynamics

Half of the region’s Advanced Manufacturing workforce is 45 years or older.

The workforce is aging. It is projected that over the next decade, employers will need to fill more than 30,000 vacancies due just to retirements.

Youth employment is half that of the overall economy (5.4% vs. 11.9%).

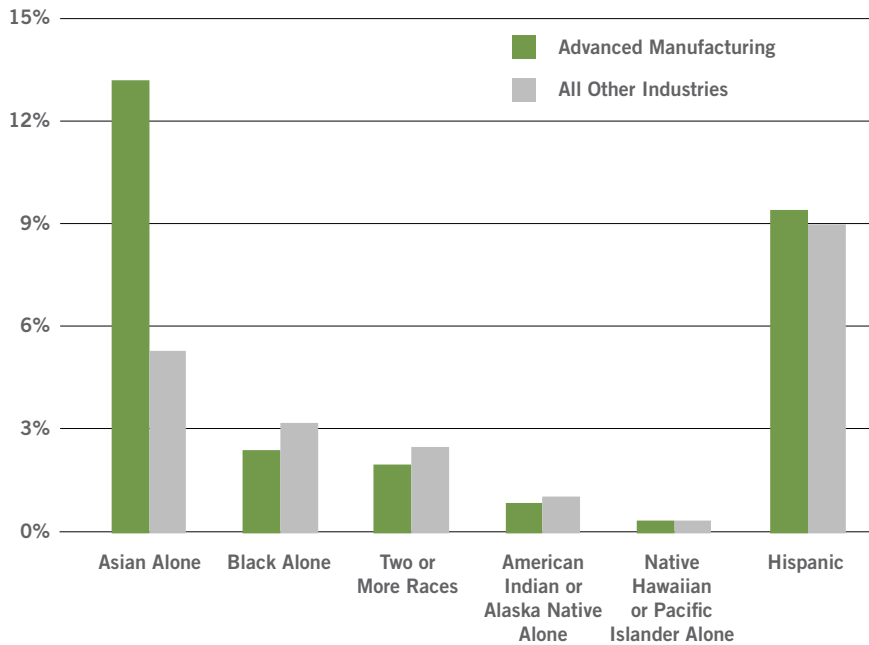
**ADVANCED MANUFACTURING EMPLOYMENT BY GENDER
GREATER PORTLAND REGION: 2014**



Source: U.S. Census Bureau; Longitudinal Employer-Household Dynamics

The Advanced Manufacturing sector is overwhelmingly male; 73 percent of the workforce compared to 52 percent across all other industries.

ADVANCED MANUFACTURING EMPLOYMENT BY RACE AND ETHNICITY GREATER PORTLAND REGION: 2014

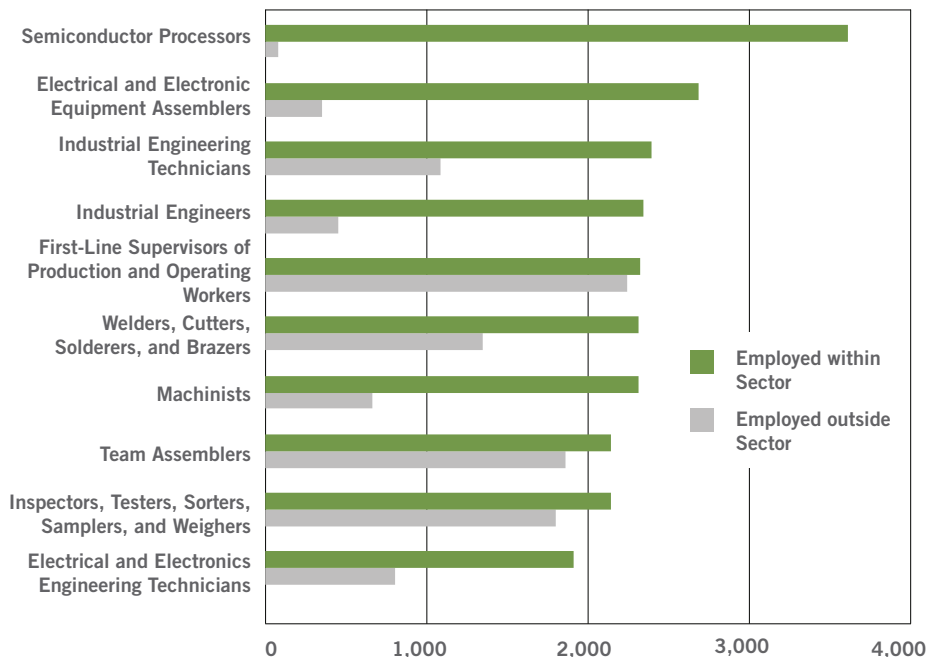


Whites make up the vast majority of the workforce (81%); slightly less than the workforce as a whole (87%).

Asians are more than twice as likely to work in Advanced Manufacturing than in other industries.

OCCUPATIONS

ADVANCED MANUFACTURING OCCUPATIONS EMPLOYMENT WITHIN SECTOR VS. OUTSIDE OF SECTOR GREATER PORTLAND REGION: 2015



Source: EMSI

Approximately 425 occupations are found within the Advanced Manufacturing sector.

The 10 largest occupations account for one-quarter of total employment.

The two largest occupations within Advanced Manufacturing are unique to the sector and are not generally found elsewhere in the economy.

2014-2024 PROJECTED GROWTH: GREATER PORTLAND REGION

| Occupation | 2014 | 2024 | Projected Annual Growth Openings |
|---|-------|-------|----------------------------------|
| Machinists | 2,299 | 3,023 | 72 |
| Team Assemblers | 2,137 | 2,702 | 57 |
| Electrical and Electronic Equipment Assemblers | 2,675 | 3,211 | 54 |
| Computer-Controlled Machine Tool Ops. Metal & Plastic | 1,612 | 2,138 | 53 |
| Inspectors, Testers, Sorters, Samplers, and Weighers | 2,131 | 2,620 | 49 |
| Supervisors of Production and Operating Workers | 2,316 | 2,780 | 46 |
| Welders, Cutters, Solderers, and Brazers | 2,301 | 2,697 | 40 |
| Industrial Engineers | 2,379 | 2,768 | 39 |
| Industrial Machinery Mechanics | 1,230 | 1,613 | 38 |
| Packaging and Filling Machine Operators and Tenders | 1,066 | 1,351 | 29 |
| General and Operations Managers | 1,783 | 2,066 | 28 |
| Sales Reps, Wholesale & Mfg., Excl. Technical & Sci. Products | 1,357 | 1,640 | 28 |
| Laborers and Freight, Stock, and Material Movers, Hand | 1,450 | 1,732 | 28 |
| Electrical and Electronics Engineering Technicians | 1,903 | 2,162 | 26 |
| Mechanical Engineers | 1,486 | 1,732 | 25 |

Source: EMSI

LARGEST OCCUPATIONS IN ADVANCED MANUFACTURING: GREATER PORTLAND REGION

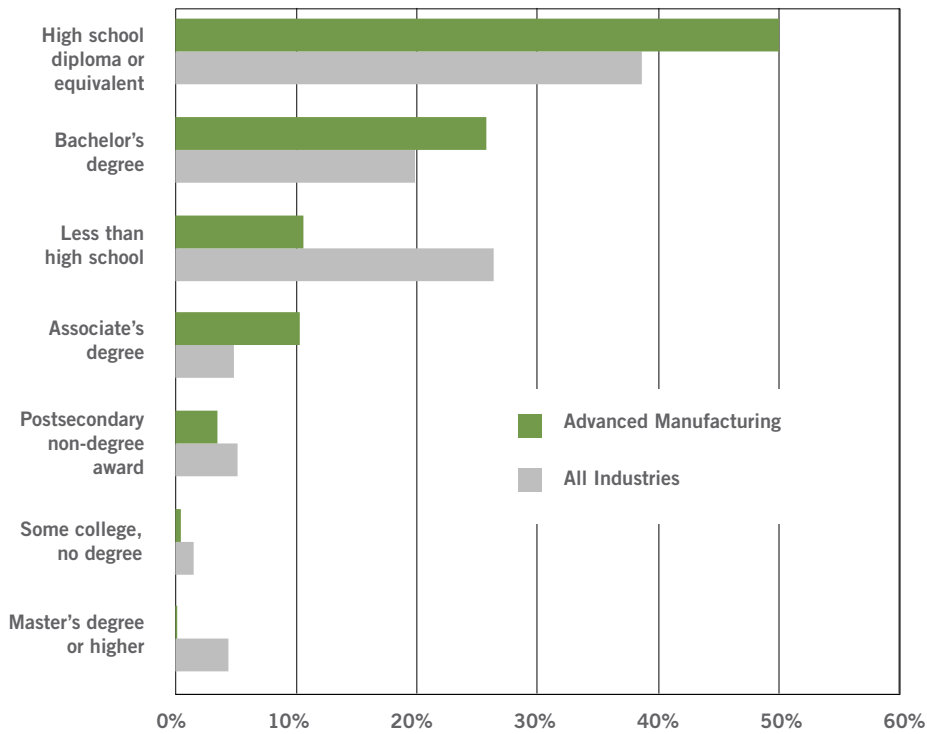
| Occupation | 2014 Sector Employment | % of Sector Employment | 2014 Median Wage* | % of Median Wage, All Occupations* | Location Quotient* | Education Level |
|---|------------------------|------------------------|-------------------|------------------------------------|--------------------|-----------------------------------|
| Semiconductor Processors | 3,597 | 3.9% | \$16.36 | 87% | 20.05 | Associate's degree |
| Electrical & Electronic Equipment Assemblers | 2,675 | 2.9% | \$15.06 | 80% | 1.71 | High school diploma or equivalent |
| Industrial Engineers | 2,379 | 2.6% | \$48.08 | 255% | 1.78 | Bachelor's degree |
| Industrial Engineering Technicians | 2,333 | 2.5% | \$27.07 | 143% | 4.10 | Associate's degree |
| Welders, Cutters, Solderers, and Brazers | 2,301 | 2.5% | \$20.19 | 107% | 1.17 | High school diploma or equivalent |
| Machinists | 2,299 | 2.5% | \$22.65 | 120% | 0.91 | High school diploma or equivalent |
| Team Assemblers | 2,137 | 2.3% | \$13.19 | 70% | 0.37 | High school diploma or equivalent |
| Inspectors, Testers, Sorters, Samplers, and Weighers | 2,131 | 2.3% | \$17.75 | 94% | 0.89 | High school diploma or equivalent |
| Electrical and Electronics Engineering Technicians | 1,903 | 2.1% | \$28.15 | 149% | 2.56 | Associate's degree |
| Computer-Controlled Machine Tool Operators, Metal & Plastic | 1,612 | 1.7% | \$18.16 | 96% | 1.46 | High school diploma or equivalent |
| Total All Occupations | 92,135 | | \$18.88 | | | |

*7-county metro area, all industries

Source: EMSI; Bureau of Labor Statistics

EDUCATIONAL REQUIREMENTS

**ADVANCED MANUFACTURING EMPLOYMENT BY EDUCATIONAL LEVEL
GREATER PORTLAND REGION: 2015**



Source: EMSI

While certain Advanced Manufacturing occupations require higher levels of education (engineers and managers), nearly two-thirds of the sector's jobs require less than an Associate degree.

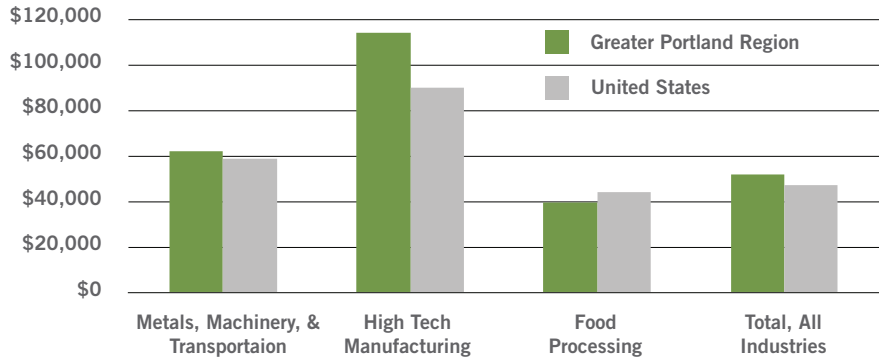
**TRAINING AND DEGREE GRADUATE COMPLETER DATA, ADVANCED MANUFACTURING-RELATED PROGRAMS:
GREATER PORTLAND REGION**

| Training | 2013 Completers | Award less than 2 years | Award at least 2 and less than 4 | Assoc. | Bachelor's | Postbac. Certificate | Master's | Doctorate |
|---|-----------------|-------------------------|----------------------------------|--------|------------|----------------------|----------|-----------|
| Airframe Mechanics and Aircraft Maintenance Technology/Technician | 24 | 1 | 5 | 18 | | | | |
| Autobody/Collision and Repair Technology/Technician | 57 | 32 | 15 | 10 | | | | |
| Bioengineering and Biomedical Engineering | 20 | | | 16 | | | 2 | 2 |
| Drafting and Design Technology/Technician, General | 20 | 19 | | 1 | | | | |
| Electrical and Electronics Engineering | 169 | | | 8 | 71 | 1 | 84 | 5 |
| Electrical, Electronic and Communications Engineering Technology/Technician | 146 | 56 | | 90 | | | | |
| Electromechanical Technology/Electromechanical Engineering Technology | 7 | | | 7 | | | | |
| Energy Management and Systems Technology/Technician | 205 | 205 | | | | | | |
| Engineering Technology, General | 6 | | | | | 6 | | |
| Engineering, General | 31 | | | | 30 | | 1 | |
| Engineering, Other | 5 | | | | | 5 | | |
| Engineering/Industrial Management | 61 | | | | 4 | 14 | 34 | 9 |
| Heavy Equipment Maintenance Technology/Technician | 1 | | | 1 | | | | |
| Industrial and Product Design | 17 | | | | 17 | | | |
| Industrial Engineering | 14 | 11 | | 3 | | | | |
| Industrial Mechanics and Maintenance Technology | 2 | | | 2 | | | | |
| Industrial Production Technologies/Technicians, Other | 5 | | 5 | | | | | |
| Industrial Technology/Technician | 6 | | | 6 | | | | |
| Logistics, Materials, and Supply Chain Management | 95 | | | | 95 | | | |
| Machine Shop Technology/Assistant | 49 | 46 | | 3 | | | | |
| Machine Tool Technology/Machinist | 60 | 14 | 2 | 44 | | | | |
| Manufacturing Engineering Technology/Technician | 98 | 22 | | 59 | 17 | | | |
| Materials Engineering | 1 | | | | | | 1 | |
| Mechanical Drafting and Mechanical Drafting CAD/CADD | 4 | 1 | | 3 | | | | |
| Mechanical Engineering | 137 | | | 16 | 105 | | 16 | |
| Mechanical Engineering/Mechanical Technology/Technician | 25 | | 1 | 24 | | | | |
| Welding Technology/Welder | 122 | 85 | 3 | 34 | | | | |

Source: EMSI

WAGES

ANNUAL AVERAGE WAGES FOR COMPONENTS OF ADVANCED MANUFACTURING, GREATER PORTLAND REGION AND U.S.: 2014

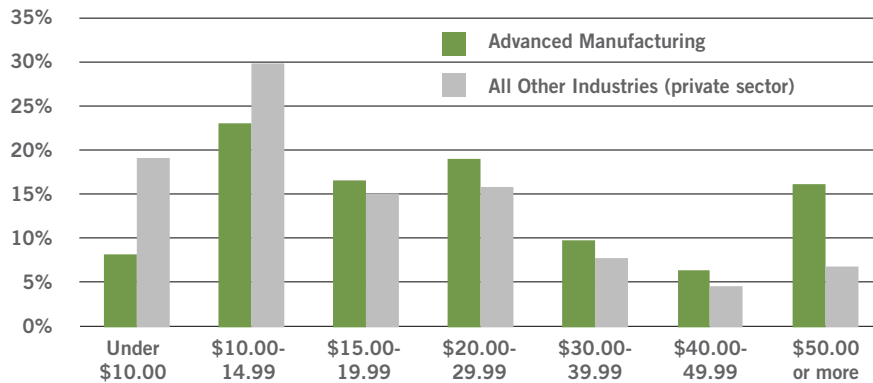


Source: Oregon Employment Department, Washington Employment Security Department

Advanced Manufacturing in the greater Portland region is comprised of several high-paying industries. They also pay better than their national counterparts. Overall, they pay 124 percent of the national average for the industry.

Sector wages are pulled up by the high tech component, which pays more than \$114,000 annually on average. Nationally, this component averages \$90,000 annually.

ADVANCED MANUFACTURING SHARE OF EMPLOYMENT BY HOURLY WAGE OREGON: 2014

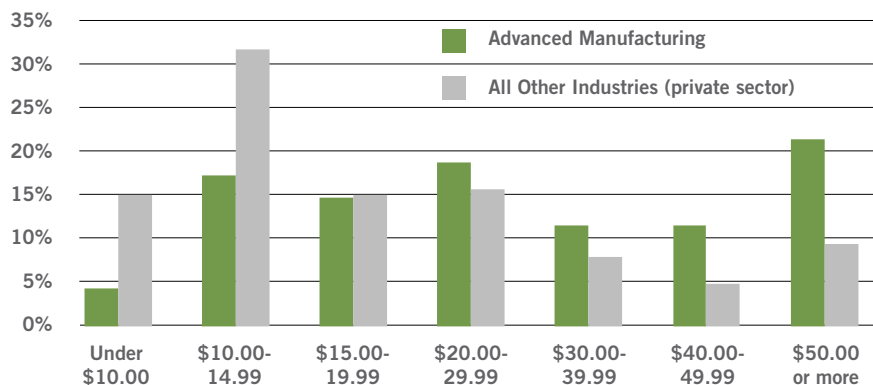


Source: Oregon Employment Department Unemployment Insurance Wage Records

Across Oregon, Advanced Manufacturing's median wage is \$20.68 (2014); 33 percent more than for all industries (\$15.40).

Nearly one-quarter of the workforce earns \$40 hourly or more compared to 12 percent of workers across all other industries.

ADVANCED MANUFACTURING SHARE OF EMPLOYMENT BY HOURLY WAGE WASHINGTON: 2014



Source: Washington Employment Security Department

Across Washington, one-third of Advanced Manufacturing's workforce earns \$40 hourly or more compared to 14 percent of workers across all other industries.

TURNOVER

TURNOVER RATE IN ADVANCED MANUFACTURING GREATER PORTLAND REGION: 2014

| | |
|---|-------------|
| Total, Advanced Manufacturing | 4.9% |
| Metals, Machinery, & Transportation | 5.3% |
| High Tech Manufacturing | 3.5% |
| Food Processing | 8.4% |
| Total, All Industries (private sector) | 9.5% |

Source: Oregon Employment Dept. analysis of U.S. Census Bureau (LEHD) data

Excludes Skamania County

Turnover refers to the change in the workforce due to employee separations and hiring.

There is less turnover in Advanced Manufacturing than in the overall economy.

Workers in the high tech component are very likely to stay at their current jobs.

VACANCIES

LARGEST NUMBER OF VACANCIES IN MANUFACTURING-RELATED OCCUPATIONS PORTLAND TRI-COUNTY: 2015

| Occupation | 2015 Vacancies, All Industries |
|--|--------------------------------|
| Heavy and Tractor-Trailer Truck Drivers | 1,241 |
| Motor Vehicle Operators, All Other | 597 |
| Production Workers, All Other | 499 |
| Machinists | 444 |
| Helpers – Production Workers | 371 |
| Driver/Sales Workers | 311 |
| Laborers and Freight, Stock, and Material Movers, Hand | 244 |
| Automotive and Watercraft Service Attendants | 228 |
| Light Truck or Delivery Services Drivers | 216 |
| Team Assemblers | 163 |

Tri-County: Clackamas, Multnomah, Washington counties NOTE: Information not available for SW Washington
Source: Oregon Employment Department, 2015 Job Vacancy Survey

From a national survey of manufacturers by the Manufacturing Institute and Deloitte:

- An overwhelming majority (82%) of executives agree there is a skills shortage in manufacturing.
- Six out of 10 positions remain unfilled due to the talent shortage.
- Over the next decade, nearly 3.5 million manufacturing jobs will need to be filled, and the skills gap is expected to result in two million of those jobs going unfilled.

CURRENT SUPPLY

REGISTERED JOBSEEKERS

ADVANCED MANUFACTURING: PORTLAND METRO AREA (OREGON PORTION)

| Occupation | Jobseekers ¹ |
|---|-------------------------|
| Semiconductor Processors | 299 |
| Electrical and Electronic Equipment Assemblers | 692 |
| Industrial Engineers | 234 |
| Machinists | 452 |
| Industrial Engineering Technicians | 198 |
| Welders, Cutters, Solderers, and Brazers | 737 |
| Team Assemblers | 1,478 |
| Inspectors, Testers, Sorters, Samplers, and Weighers | 994 |
| Electrical and Electronic Engineering Technicians | 429 |
| Computer-Controlled Machine Tool Operators, Metal and Plastic | 409 |
| Computer Hardware Engineers | 268 |
| Mechanical Engineers | 212 |

¹ Data represents jobseekers registered with The Oregon Employment Department, iMatchSkills (active status, August 2015). Data is self-reported. Job seekers can include more than one occupation in their iMS profile, therefore job seekers might be counted more than once in the data.

Portland Metro Area (Oregon portion): Clackamas, Columbia, Multnomah, Washington, Yamhill counties

NOTE: Information not available for SW Washington

Source: Oregon Employment Department

There are several ways to depict the current supply of workers. Unemployment Insurance (UI) claimants are a subset of jobseekers and does not include those unemployed workers who don't qualify for, or have exhausted, benefits. This data is only available in Washington State. Persons registered with the Oregon Employment Department are both employed and unemployed jobseekers including but not limited to those receiving unemployment benefits. This is a much larger pool of workers than UI claimants.

UNEMPLOYMENT INSURANCE CLAIMANTS

SOUTHWEST WASHINGTON: 2015

| Occupation | Claimants ¹ |
|---|------------------------|
| Welders, Cutters, Solderers, and Brazers | 57 |
| Inspectors, Testers, Sorters, Samplers, and Weighers | 16 |
| Computer-Controlled Machine Tool Operators, Metal and Plastic | 13 |
| Electrical and Electronic Engineering Technicians | 8 |
| Mechanical Engineers | 5 |
| Machinists | 3 |
| Team Assemblers | 3 |
| Semiconductor Processors | 2 |
| Electrical and Electronic Equipment Assemblers | 2 |
| Industrial Engineering Technicians | 2 |

¹ Data represents claimants registered with The Washington Employment Security Department (active status, August 2015).

Southwest Washington: Clark, Cowlitz, Wahkiakum, Skamania counties

Source: Washington Employment Security Department

In Southwest Washington, there were just 113 unemployed workers claiming unemployment insurance in Advanced Manufacturing's 12 largest occupations (August 2015).

CURRENT DEMAND

ADVANCED MANUFACTURING OCCUPATIONS HELP-WANTED ONLINE (HWOL) LISTINGS GREATER PORTLAND REGION: SUMMER 2015

| Occupation | HWOL Ads |
|--|--------------|
| Industrial Engineers | 449 |
| Industrial Engineers | 444 |
| Human Factors Engineers and Ergonomists | 5 |
| Software Developers, Applications | 1,425 |
| Supervisors of Production & Operating Workers | 527 |
| Marketing Managers | 852 |
| Computer Occupations, All Other | 1,496 |
| Computer Systems Engineers/Architects | 244 |
| Information Technology Project Managers | 694 |
| Software Quality Assurance Engineers & Testers | 511 |
| Search Marketing Strategists | 22 |
| Software Developers, Systems Software | 201 |
| Accountants and Auditors | 819 |
| Accountants | 679 |
| Auditors | 140 |
| Computer Hardware Engineers | 87 |
| Network and Computer Systems Administrators | 777 |
| Electrical Engineers | 210 |

Source: The Conference Board, Help-Wanted OnLine (HWOL) data series

3-month average: June, July, August 2015

Note: Only about half of HWOL ads have an identified industry, so the Sector totals are a lower-bound figure.

Data includes ads across all industries and from all available sources (the firm itself, staffing agency ads, Oregon Employment Department job listings, etc., and is adjusted for duplications).

LONG-TERM DEMAND

Between 2014 and 2024, Advanced Manufacturing is projected to add 15,000 jobs for a growth rate of 16 percent; slightly slower than the overall economy (19%).

The largest number of new jobs will be in Washington County while SW Washington will grow the fastest.

The Advanced Manufacturing sector will account for one-in-12 new jobs across the region between 2014 and 2024.

**OCCUPATIONS ADDING THE LARGEST NUMBER OF JOBS, ADVANCED MANUFACTURING:
GREATER PORTLAND REGION**

| Occupation | 2014 | 2024 | Change | Percent Growth | Share of Sector Growth | Projected Annual Growth Openings |
|---|---------------|----------------|---------------|----------------|------------------------|----------------------------------|
| Machinists | 2,299 | 3,023 | 724 | 31% | 5% | 72 |
| Team Assemblers | 2,137 | 2,702 | 565 | 26% | 4% | 57 |
| Electrical and Electronic Equipment Assemblers | 2,675 | 3,211 | 536 | 20% | 4% | 54 |
| Computer-Controlled Machine Tool Ops. Metal & Plastic | 1,612 | 2,138 | 526 | 33% | 3% | 53 |
| Inspectors, Testers, Sorters, Samplers, and Weighers | 2,131 | 2,620 | 489 | 23% | 3% | 49 |
| Supervisors of Production and Operating Workers | 2,316 | 2,780 | 464 | 20% | 3% | 46 |
| Welders, Cutters, Solderers, and Brazers | 2,301 | 2,697 | 396 | 17% | 3% | 40 |
| Industrial Engineers | 2,379 | 2,768 | 389 | 16% | 3% | 39 |
| Industrial Machinery Mechanics | 1,230 | 1,613 | 383 | 31% | 3% | 38 |
| Packaging and Filling Machine Operators and Tenders | 1,066 | 1,351 | 285 | 27% | 2% | 29 |
| General and Operations Managers | 1,783 | 2,066 | 283 | 16% | 2% | 28 |
| Sales Reps, Wholesale & Mfg., Excl. Technical & Sci. Products | 1,357 | 1,640 | 282 | 21% | 2% | 28 |
| Laborers and Freight, Stock, and Material Movers, Hand | 1,450 | 1,732 | 282 | 19% | 2% | 28 |
| Electrical and Electronics Engineering Technicians | 1,903 | 2,162 | 259 | 14% | 2% | 26 |
| Mechanical Engineers | 1,486 | 1,732 | 246 | 17% | 2% | 25 |
| Total Sector | 92,135 | 107,199 | 15,064 | 16% | | 1,506 |

Source: EMSI

IMPORTING TALENT

H-1B VISAS FOR MANUFACTURING-RELATED OCCUPATIONS GREATER PORTLAND REGION: 2014

| Occupation | # of Certified H-1B Visas |
|--|---------------------------|
| Industrial Engineers | 412 |
| Electronics Engineers, Except Computer | 322 |
| Software Developers, Systems Software | 239 |
| Software Developers, Applications | 39 |
| Computer Hardware Engineer | 24 |
| Electrical Engineers | 25 |
| Mechanical Engineers | 16 |
| Computer Systems Analysts | 15 |
| Commercial and Industrial Designers | 14 |
| Materials Engineers | 14 |
| Computer and Information Research Scientists | 12 |
| Computer Occupations, All Other | 8 |
| Computer and Information Systems Managers | 8 |
| General and Operations Managers | 7 |
| Information Security Analysts | 7 |
| Sales Engineers | 7 |
| Marketing Managers | 5 |
| Biomedical Engineers | 4 |
| Engineers, All Other | 5 |
| Logisticians | 3 |
| Accountants and Auditors | 2 |
| Architectural And Engineering Managers | 1 |
| Environmental Engineers | 1 |

Source: Myvisajobs.com

The H-1B Visa allows employers to temporarily employ foreign workers in specialty occupations which include engineering, math, and medicine, and generally require a Bachelor's degree or equivalent.

Nearly 4,000 H-1B visas were certified in the Portland region in 2014. One-third were issued for occupations prevalent in the Advanced Manufacturing sector.

Nine out of 10 certified visas were filed by companies in just three cities: Hillsboro, Beaverton, and Portland. The Portland metro area is not a heavy user of H-1B visas relative to other areas in the country. However, we do stand out (along with Seattle, Durham, and San Diego) in that a small handful of large employers drive the majority of demand for H-1B visas in our region.

THE COLUMBIA-WILLAMETTE WORKFORCE COLLABORATIVE



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