

Training Oregonians....
For The Right Jobs



A New Method to Prioritize
Occupational Training



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The Need to Target Training Resources

There are about 1.8 million jobs in Oregon, spread across more than 700 published occupational categories. On average, we expect to need about 70,000 new workers every year to fill jobs created by economic growth, the retirements of baby boomers, and several other factors. Everyone involved in Oregon's workforce system – businesses, employees, policy-makers, training entities – wants Oregon's workers to have the right skills for those jobs.

But there's never enough money to pay for all of the training that might be needed. So we need a way to prioritize the training. Which occupations represent the best investment of public-sector workforce and training dollars?

This invariably leads to a question that workforce researchers dread: "What's the demand-supply gap for each of Oregon's occupations?" The concept is simple. If we know how many new workers each occupation will need and how many individuals will complete training relevant for each occupation, we can simply subtract one number from the other, and figure out precisely how many additional trained workers are needed (or how much of a surplus of trained workers we're heading towards). Then we put our training resources to the occupation with the biggest "gap."

The problem is, the concept doesn't work in reality, partly because we don't have perfect demand and supply data for all 700 occupations and partly because the premise that there's a one-to-one match between every occupation and a particular program of training is fatally flawed.

So when asked that dreaded question, the appropriate (but unpopular) answer is: "We can't

measure that gap for all of Oregon's occupations, and even if we could, it would, in many cases, be a meaningless number." To some customers, it seems we're taking too much of a "purist" approach: "We don't have perfect data; therefore, we cannot provide anything useful to you."

There's another extreme, too. Perhaps we could call it the, "You want data? We got data!" approach. The idea here is that a group of analysts with decent computers and flexible assumptions can come up with numbers for any question asked. Not necessarily good numbers. But numbers that the customer will quite possibly be delighted with!

We decided to seek a better option, a middle ground. We thought that perhaps we could identify some data items that are solid, strong, and sound for all occupations, and use those data for all occupations. Then we'd add some other data items – perhaps weaker, perhaps not available for all occupations – and use those data only for occupations where they made sense and added value.

And so we introduce the Oregon Employment Department's new *Occupational Prioritization for Training model*. This model follows four basic steps, each described in more detail below:

1. Start with Oregon's high-demand, high-wage occupations.
2. Analyze six strong data factors available for all occupations.
3. Analyze four weaker data factors useful for only some occupations.
4. Engage businesses and other relevant groups to make final decisions on training priorities.

The Starting Point: High-Demand, High-Wage Occupations

There are many possible philosophical approaches to allocating public-sector funds to particular types of training. Oregon – in a collaborative process largely driven by the Oregon Workforce Investment Board in 2007 – chose to put most emphasis on high-demand, high-wage occupations.

A high-demand occupation is one that's projected to have more openings (growth and replacement) in the next ten years than the median for all occupations. What's the median? If you sort all the occupations so the one with most openings is at the top and the one with least openings at the bottom, the one in the middle is the median ... and all occupations above that one are accepted as being high-demand. (For Oregon statewide, this means that a high-demand occupation is one projected to have at least 28 growth and replacement openings per year.)

A high-wage occupation is one that pays more than the median wage for all occupations. (For Oregon statewide, this means that a high-wage occupation had a 2007 median wage of at least \$15.22 per hour.)

In order to be included in this occupational prioritization, occupations had to be both high-demand and high-wage, either at the statewide level or in at least five of Oregon's 15 workforce regions. That's a pretty high bar to set. It removes from consideration some very large occupations that will have lots of openings ... because they pay low wages. It also removes from consideration some very highly paid occupations ... because they don't have many openings. We're not saying those occupations are "bad"; we're just saying they're not in the running for scarce public-sector training dollars. (OK, maybe that's a bit too strong. We do specifically allow for exceptions. More on that later.)

So this first step reduces the number of occupations under consideration from about 720 to 269 – a good first step in helping policy-makers target scarce resources to the areas of highest need and highest return. But only a first step.

Solid Data Available for All Occupations Gets the Prioritization Started

We identified six factors for which there are good data available for all occupations and which, in our view, collectively help identify occupations for which training would be highly valuable for the individual workers, for businesses, and for Oregon as a whole (see *table on page 3*).

The rationale for each factor starts with the words, "All other things being equal," but of course all other things are not equal, so none of these factors is a perfect measure on its own. However, by putting them all together, we believe we can paint a reasonable picture of the occupations that would be Oregon's highest priorities for training. Occupations topping the list are likely to be adding jobs; growing rapidly; paying good wages; currently having numerous vacancies, many of them difficult to fill; and important in many parts of the state.

How did we combine these very different data items into one prioritization? Simple. For each one, we sorted the occupations from highest to lowest (e.g., highest wage to lowest wage; largest number of vacancies to smallest number of vacancies). Then, for each factor, we gave the top 20 percent of occupations a score of 5; the second 20 percent a score of 4; and so on, down to the bottom 20 percent getting a score of 1. Add up these scores for the six factors, and an occupation in the top group for each factor would have a score of 30, while an occupation in the bottom group for all factors would have a score of 6.

Factor	Rationale
	<i>All other things being equal, we should target training resources to those occupations ...</i>
Total projected openings, 2006-2016	... likely to have the most growth and replacement openings.
Total projected openings, 2006-2016, relative to current employment	... growing the fastest.
Average wage, 2008	... paying the highest wages.
Number of vacancies, spring 2008	... with the most vacancies.
Duration of vacancies, spring 2008	... whose vacancies are open the longest, implying that the vacancies are difficult to fill.
Geographic dispersion	... that are important across broad areas of Oregon, not just needed in one or two geographic areas.
<i>The data source for all six factors is the Oregon Employment Department's Research Division: 10-year employment projections, Occupational Employment Statistics survey, 2008 Oregon Vacancy Survey, and 2007 high-wage, high-demand job lists by region.</i>	

Other Information Helps Focus the Prioritization

We could have stopped there, but there were a few other factors that seemed worthy of consideration, even though they weren't necessarily usable for all occupations (see *table on page 4*).

Each of these factors started with a numerical value of 1. If we felt the information available suggested we should increase the particular occupation's standing in the prioritization, we increased the factor up to 1.05, 1.1, or even (in a few cases, in the supply shortages and surpluses factor) as high as 1.3. If we felt the occupation's priority should be lowered, we decreased the factor to 0.95, 0.9, or even 0.7 (in just a few cases).

These four factors were then applied in a multiplicative manner.

Let's use an example to make all of this clear. Registered nurse, which happened to end up

as the highest priority occupation, scored 29 out of a possible 30 from the initial six factors. We then multiplied that 30 by 1.05 for the immigration factor (we need to train nurses here in Oregon); then by 1.10 for the supply shortages and surpluses factor (we're not producing as many nurses as we need); then by 1.10 for business affirmation (health care businesses have been significantly engaged in the development of additional training capacity for nurses); and then by 1.10 for the key industries (health care is clearly among the highest stated priorities for the Governor and other elected officials). So registered nurse ends up with a score of 41.

Remember that we only use these four more subjective factors when there's good information available and when that information tells us something concrete. When both of those conditions are not met, the factors would remain at a value of 1, meaning the above multiplication would have no impact on the occupation's final score.

Factor	Rationale
Immigration	In today's global economy, workers in some occupations are highly likely to cross state or even national boundaries for the right job. This factor reflects that reality, basically saying, "We may not need to 'train our own' workers for every occupation." This is particularly true in Oregon, a state that's inherently attractive to in-migrants at any time. So this factor is simply saying that, all other things being equal, we should probably place higher priority on training for occupations where it's going to be tough to bring workers in from other states than for those occupations where we can likely find workers elsewhere. (We do recognize the value of training existing Oregonians for all the high-wage jobs ... but we also recognize the limitation posed by not having enough training funds to meet all needs.) <i>Data source: 2000 Census national data, U.S. Bureau of the Census</i>
Supply Shortages and Surpluses	As noted in the introduction, it's not possible to identify the "demand-supply gap" for all occupations. But it is possible to come close for some occupations. Health care occupations would be one example; some licensed occupations would be another. So this factor is saying if we currently have a documentable shortage or surplus between the number of workers graduating with the right skills for an occupation and the number of workers needed in that occupation, the prioritization should reflect that. We only use this when the "supply" of workers from colleges or other training institutions has a meaningful relationship with the "demand" of workers for a particular occupation <u>and</u> we can actually get good data for the occupation. <i>Data source: OED Occupational Employment Projections, 2006-2016; education completers from Integrated Postsecondary Education Data System, Oregon Department of Education Private Career Schools Division, Job Corps, and BOLI Apprenticeship Division; other external analyses of particular occupations.</i>
Business Affirmation	If businesses are really struggling to find workers in certain occupations, they'll probably actively do something about it. So this factor gives a higher prioritization to occupations for which businesses have taken concrete steps to support training. Examples might include donating faculty, faculty salary, other financial support, or equipment to colleges. <i>Source: Primarily Oregon Economic and Community Development Department and Oregon Department of Community Colleges and Workforce Development.</i>
Links to Key Industries	If the Governor or other policy-makers decide that certain industries are among their top priorities and focus, it's better to reflect that in the prioritization model, rather than ignoring it, while knowing it will be part of the final decision-making regardless. <i>Source: Conversations with the Governor's Office, Workforce Policy Cabinet, Oregon Workforce Investment Board, other documents and public statements.</i>

The Prioritization Narrows the Field ... and Leads to Further Conversation

It is very important to realize that this prioritization is not the final word. The prioritization just gives the starting point for discussions with businesses, colleges, policy-makers, and other interested parties.

We envision a scenario where policy-makers would use these lists to identify the handful of occupations they're most interested in focusing on; then they'd bring in local businesses and workforce leaders, and discuss questions like:

- ✓ Why is the occupation expected to need additional training?
- ✓ Are certain skills particularly in need?
- ✓ Is the occupational shortage caused by factors other than the supply of trained workers?
- ✓ Is the occupation impacted by specific training, education, certifications, or skills requirements?
- ✓ Are there barriers to additional training such as lack of equipment, faculty, or internships?
- ✓ Are there opportunities for positive steps that would attract additional workers toward particular occupations, such as scholarships or other incentives?

Exceptions are Allowed

This is another important point. It's our job to provide the best possible information to policy-makers and many others, to help them make great decisions. But we know it's not our role to "mandate" the final decisions. Elected officials and other leaders make decisions based on a number of factors, and this occupational prioritization is just one of them. So of course, we fully recognize that exceptions are allowed.

Note also that some occupations that don't even make the first criteria – the high-demand, high-wage criteria – may be good candidates for training resources under some circumstances. Maybe a particular community has a real need for entry-level workers in a locally important industry... and those workers, at least initially, may not be high-wage. Maybe a low-wage occupation is a great stepping stone to higher-wage opportunities down the road... and individuals can't get to the higher-wage jobs without first gaining experience at the lower levels. Maybe... maybe there are dozens of different scenarios.

So the point is: this methodology should not be viewed as the absolute only approach to all decisions. But we do hope this prioritization model will form the foundation for the majority of workforce-related training prioritization decisions.

A Methodology for All of Oregon

We believe the statewide prioritization does a good job of reflecting workforce training needs across the whole state. But we know that the training needs in Prineville may be different from those in Gresham, and we know regional and local policy-makers will at times want to see prioritized lists targeted specifically for their own communities. So we've developed those lists, too: lists for each of Oregon's 15 workforce investment regions.

A Methodology for Many Purposes

This methodology was developed, and the initial prioritization lists published, in the summer and fall of 2008. Initially, the goal was to help inform decision-making relating to workforce priorities for the 2009 Session of the Oregon Legislature. But we believe the method can be useful for many other purposes. To that end, we have produced a number of "Top 20" lists: an overall statewide Top 20; lists focused on certain industry or occupational groups; and, as mentioned above, lists for each of Oregon's workforce regions.

Finding the List That's Relevant for You

In the remainder of this report, we share the following specific Top 20 lists:

- ✓ Statewide: Overall Top 20 list
- ✓ Statewide: Targeted Top 20 lists for
 - Health care
 - Occupations other than health care
 - Manufacturing
 - Clean technology
- ✓ Regional: Overall Top 20 lists for all 15 Oregon Workforce Regions

We are also developing an on-line tool, at www.QualityInfo.org, where you will be able to find all of the above lists plus many more, and the ability to develop your own customized list.

Improvements in the Future

We recognize that this methodology and the associated data analysis were developed quickly, for certain targeted uses, and with very tight deadlines. It is our intent to update the prioritization every two years (starting in early 2010), to incorporate new data. We will also be reviewing the methodology itself, always looking for ways to improve it.

To that end, we welcome comments and input.

For More Detailed Information

This report provides a deliberately brief and easy-to-read summary of the methodology. Numerous detailed documents are also available. Please feel free to contact Jessica Nelson, Brenda Turner, or Graham Slater for more information.

Statewide Tables:

Overall Top 20 list

Targeted Top 20 lists for:

- **Health care**
- **Occupations other than health care**
 - **Manufacturing**
 - **Clean technology**

Overall Top 20 List:

Oregon Statewide Occupational Prioritization for Training Top 20 Occupations

SOC Code	SOC Title	Total Openings 2006-2016	Final Rank
29-1111	Registered Nurses	13,515	1
51-4121	Welders, Cutters, Solderers, and Brazers	2,104	2
29-1060	Physicians and Surgeons	3,224	3
29-1123	Physical Therapists	865	3
47-2152	Plumbers, Pipefitters, and Steamfitter	2,011	5
29-2061	Licensed Practical and Licensed Vocational Nurses	1,272	5
49-3023	Automotive Service Technicians and Mechanics	2,982	7
51-4041	Machinists	1,149	7
29-2011	Medical and Clinical Laboratory Technologists	1,017	7
33-2011	Fire Fighters	1,461	10
11-9111	Medical and Health Services Managers	1,404	10
29-2021	Dental Hygienists	1,223	12
11-1021	General and Operations Managers	7,141	13
29-1051	Pharmacists	1,192	13
29-2034	Radiologic, CAT, and MRI Technologists and Technicians	1,029	13
21-1023	Mental Health and Substance Abuse Social Workers	753	13
41-4012	Wholesale and Manufacturing Sales Representatives Non-technical and Scientific	6,577	17
49-9041	Industrial Machinery Mechanics	1,025	17
51-8031	Water and Liquid Waste Treatment Plant and System Operators	563	17
31-9091	Dental Assistants	2,723	20
11-2021	Marketing Managers	1,266	20
29-1122	Occupational Therapists	378	20

Note: Ranks reflect where an occupation's final score falls in the overall list of 269 high-wage, high-demand occupations. When occupations' scores are tied, more than 20 occupations can rank in the top 20. SOC = Standard Occupational Classification.

Targeted Top 20 Lists :

Oregon Statewide Occupational Prioritization for Training Top 20 Health Care Occupations

SOC Code	SOC Title	Total Openings 2006-2016	Final Rank
29-1111	Registered Nurses	13,515	1
29-1060	Physicians and Surgeons	3,224	3
29-1123	Physical Therapists	865	3
29-2061	Licensed Practical and Licensed Vocational Nurses	1,272	5
29-2011	Medical and Clinical Laboratory Technologists	1,017	7
11-9111	Medical and Health Services Managers	1,404	10
29-2021	Dental Hygienists	1,223	12
29-1051	Pharmacists	1,192	13
29-2034	Radiologic, CAT, and MRI Technologists and Technicians	1,029	13
21-1023	Mental Health and Substance Abuse Social Workers	753	13
31-9091	Dental Assistants	2,723	20
29-1122	Occupational Therapists	378	20
31-9094	Medical Transcriptionists	792	23
21-1022	Medical and Public Health Social Workers	471	23
43-6013	Medical Secretaries	2,957	31
21-1014	Mental Health Counselors	846	31
29-1126	Respiratory Therapists	653	31
21-1015	Rehabilitation Counselors	964	42
29-2012	Medical and Clinical Laboratory Technicians	754	42
29-1021	Dentists, General	443	42

Note: Ranks reflect where an occupation's final score falls in the overall list of 269 high-wage, high-demand occupations. When occupations' scores are tied, more than 20 occupations can rank in the top 20. SOC = Standard Occupational Classification. Health care occupations are those determined to be necessary for the delivery of health care services in the 2006 Oregon Health Care Workforce Needs Assessment. This determination was made in partnership with industry.

**Oregon Statewide
Occupational Prioritization for Training
Top 20 Occupations (Excluding Health Care)**

SOC Code	SOC Title	Total Openings 2006-2016	Final Rank
51-4121	Welders, Cutters, Solderers, and Brazers	2,104	2
47-2152	Plumbers, Pipefitters, and Steamfitter	2,011	5
49-3023	Automotive Service Technicians and Mechanics	2,982	7
51-4041	Machinists	1,149	7
33-2011	Fire Fighters	1,461	10
11-1021	General and Operations Managers	7,141	13
41-4012	Wholesale and Manufacturing Sales Representatives Non-technical and Scientific	6,577	17
49-9041	Industrial Machinery Mechanics	1,025	17
51-8031	Water and Liquid Waste Treatment Plant and System Operators	563	17
11-2021	Marketing Managers	1,266	20
43-1011	Supervisors and Managers of Office and Administrative Support Workers	6,407	23
13-2011	Accountants and Auditors	3,744	23
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	1,637	23
15-1071	Network and Computer Systems Administrators	1,405	23
15-1021	Computer Programmers	1,322	23
49-9044	Millwrights	551	23
25-1199	Postsecondary Teachers, Except Graduate Teaching Assistants	6,887	31
41-4011	Wholesale and Manufacturing Sales Representatives; Technical and Scientific	2,236	31
49-1011	Supervisors and Managers of Mechanics, Installers, and Repairers	1,843	31
47-2073	Operating Engineers and Other Construction Equipment Operators	1,556	31
13-1051	Cost Estimators	1,297	31
11-3031	Financial Managers	1,248	31
11-9021	Construction Managers	1,170	31
17-2141	Mechanical Engineers	1,108	31

Note: Ranks reflect where an occupation's final score falls in the overall list of 269 high-wage, high-demand occupations. When occupations' scores are tied, more than 20 occupations can rank in the top 20. SOC = Standard Occupational Classification. This list excludes health care occupations, but includes all other occupations. Health care occupations are those determined to be necessary for the delivery of health care services in the 2006 Oregon Health Care Workforce Needs Assessment. This determination was made in partnership with industry.

**Oregon Statewide
Occupational Prioritization for Training
Top 20 Manufacturing Occupations**

SOC Code	SOC Title	Total Openings 2006-2016	Final Rank
51-4121	Welders, Cutters, Solderers, and Brazers	2,104	2
51-4041	Machinists	1,149	7
49-9041	Industrial Machinery Mechanics	1,025	17
49-9044	Millwrights	551	23
17-2141	Mechanical Engineers	1,108	31
51-1011	Supervisors and Managers of Production and Operating Workers	2,472	42
15-1031	Computer Software Engineers, Applications	1,675	42
43-5061	Production, Planning, and Expediting Clerks	1,199	61
11-3051	Industrial Production Managers	649	61
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	1,087	73
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	1,582	88
51-2041	Structural Metal Fabricators and Fitters	722	88
11-9041	Engineering Managers	840	106
17-2112	Industrial Engineers	776	106
17-2071	Electrical Engineers	322	106
53-7051	Fork Lift, Industrial Truck and Tractor Operators	2,706	122
17-3023	Electrical and Electronic Engineering Technicians	820	122
19-3021	Market Research Analysts	594	122
13-2051	Financial Analysts	444	122
17-3026	Industrial Engineering Technicians	836	143
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	533	143
41-9031	Sales Engineers	430	143
51-9122	Painters, Transportation Equipment	386	143
11-3061	Purchasing Managers	343	143
17-3013	Mechanical Drafters	322	143

Note: Ranks reflect where an occupation's final score falls in the overall list of 269 high-wage, high-demand occupations. When occupations' scores are tied, more than 20 occupations can rank in the top 20. SOC = Standard Occupational Classification. Manufacturing occupations are defined here as those with greater than 25 percent of their occupational employment in a manufacturing NAICS.

**Oregon Statewide
Occupational Prioritization for Training
Top 20 Clean Tech Occupations**

SOC Code	SOC Title	Total Openings 2006-2016	Final Rank
51-4121	Welders, Cutters, Solderers, and Brazers	2,104	2
47-2152	Plumbers, Pipefitters, and Steamfitter	2,011	5
49-3023	Automotive Service Technicians and Mechanics	2,982	7
51-4041	Machinists	1,149	7
11-1021	General and Operations Managers	7,141	13
41-4012	Wholesale and Manufacturing Sales Representatives Non-technical and Scientific	6,577	17
49-9041	Industrial Machinery Mechanics	1,025	17
51-8031	Water and Liquid Waste Treatment Plant and System Operators	563	17
15-1021	Computer Programmers	1,322	23
49-9044	Millwrights	551	23
41-4011	Wholesale and Manufacturing Sales Representatives; Technical and Scientific	2,236	31
49-1011	Supervisors and Managers of Mechanics, Installers, and Repairers	1,843	31
47-2073	Operating Engineers and Other Construction Equipment Operators	1,556	31
11-3031	Financial Managers	1,248	31
11-9021	Construction Managers	1,170	31
17-2141	Mechanical Engineers	1,108	31
47-2031	Carpenters	4,763	42
13-1199	Business Operations Specialists, All Other	3,999	42
51-1011	Supervisors and Managers of Production and Operating Workers	2,472	42
15-1031	Computer Software Engineers, Applications	1,675	42
11-3021	Computer and Information Systems Managers	985	42
17-2051	Civil Engineers	985	42
47-4041	Hazardous Materials Removal Workers	669	42

Note: Ranks reflect where an occupation's final score falls in the overall list of 269 high-wage, high-demand occupations. When occupations' scores are tied, more than 20 occupations can rank in the top 20. SOC = Standard Occupational Classification. These initial definitions of clean tech occupations are drawn from a wide variety of reports in Oregon and California, and from an April 23, 2008 Clean Tech meeting attended by OED staff. Our understanding of the clean tech industries and occupations is expected to improve as we undertake a major research project for the Oregon Workforce Investment Board. Thus, this initial list is likely to change in the summer of 2009.

Regional Tables:

**Overall Top 20 lists for all 15
Oregon Workforce Regions**

Region 1 - Clatsop, Columbia, and Tillamook Counties
Occupational Prioritization for Training
Top 20 Occupations

SOC Code	SOC Title	Total Openings 2006-2016	Final Rank
29-1111	Registered Nurses	194	1
51-4121	Welders, Cutters, Solderers, and Brazers	54	1
29-1123	Physical Therapists	19	3
29-2011	Medical and Clinical Laboratory Technologists	18	4
47-2152	Plumbers, Pipefitters, and Steamfitter	54	5
29-1051	Pharmacists	38	5
29-1060	Physicians and Surgeons	33	5
29-1122	Occupational Therapists	11	8
11-9111	Medical and Health Services Managers	32	9
51-4041	Machinists	22	9
29-2061	Licensed Practical and Licensed Vocational Nurses	20	9
21-1023	Mental Health and Substance Abuse Social Workers	11	9
47-2031	Carpenters	212	13
11-1021	General and Operations Managers	138	13
49-9044	Millwrights	51	13
47-1011	Supervisors and Managers of Construction Trades and Extraction Workers	41	13
29-1126	Respiratory Therapists	15	13
29-2034	Radiologic, CAT, and MRI Technologists and Technicians	13	13
43-1011	Supervisors and Managers of Office and Administrative Support Workers	93	19
49-3023	Automotive Service Technicians and Mechanics	63	19
11-9199	Managers, All Other	39	19
21-1014	Mental Health Counselors	16	19
29-1131	Veterinarians	15	19

Note: Ranks reflect where an occupation's final score falls in the overall list of 183 high-wage, high-demand occupations. When occupations' scores are tied, more than 20 occupations can rank in the top 20. SOC = Standard Occupational Classification.

Region 2 - Multnomah and Washington Counties
Occupational Prioritization for Training
Top 20 Occupations

SOC Code	SOC Title	Total Openings 2006-2016	Final Rank
29-1111	Registered Nurses	5,619	1
29-1060	Physicians and Surgeons	1,568	2
51-4121	Welders, Cutters, Solderers, and Brazers	828	2
47-2152	Plumbers, Pipefitters, and Steamfitter	915	4
11-9111	Medical and Health Services Managers	593	4
29-1051	Pharmacists	443	4
51-4041	Machinists	431	4
29-2011	Medical and Clinical Laboratory Technologists	378	4
29-2061	Licensed Practical and Licensed Vocational Nurses	329	4
17-2141	Mechanical Engineers	828	10
11-2021	Marketing Managers	759	10
29-1123	Physical Therapists	247	10
21-1022	Medical and Public Health Social Workers	208	10
49-9044	Millwrights	185	10
11-1021	General and Operations Managers	3,266	15
15-1071	Network and Computer Systems Administrators	829	15
29-2021	Dental Hygienists	416	15
41-4012	Wholesale and Manufacturing Sales Representatives Non-technical and Scientific	3,244	18
43-1011	Supervisors and Managers of Office and Administrative Support Workers	2,796	18
29-2034	Radiologic, CAT, and MRI Technologists and Technicians	277	18
29-1122	Occupational Therapists	145	18

Note: Ranks reflect where an occupation's final score falls in the overall list of 224 high-wage, high-demand occupations. When occupations' scores are tied, more than 20 occupations can rank in the top 20. SOC = Standard Occupational Classification.

Region 3 - Marion, Polk, and Yamhill Counties
Occupational Prioritization for Training
Top 20 Occupations

SOC Code	SOC Title	Total Openings 2006-2016	Final Rank
29-1111	Registered Nurses	1,750	1
29-1060	Physicians and Surgeons	307	2
21-1023	Mental Health and Substance Abuse Social Workers	124	2
29-2011	Medical and Clinical Laboratory Technologists	104	2
29-1123	Physical Therapists	64	2
29-2061	Licensed Practical and Licensed Vocational Nurses	136	6
29-1051	Pharmacists	118	6
51-8031	Water and Liquid Waste Treatment Plant and System Operators	71	8
31-9091	Dental Assistants	282	9
49-3023	Automotive Service Technicians and Mechanics	243	9
51-4041	Machinists	133	9
11-9111	Medical and Health Services Managers	119	9
29-2034	Radiologic, CAT, and MRI Technologists and Technicians	111	9
29-1122	Occupational Therapists	43	9
11-1021	General and Operations Managers	752	15
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	108	16
29-2032	Diagnostic Medical Sonographers and Ultrasound Technologists	35	16
43-3031	Bookkeeping, Accounting, and Auditing Clerks	1,056	18
25-1199	Postsecondary Teachers, Except Graduate Teaching Assistants	988	18
43-1011	Supervisors and Managers of Office and Administrative Support Workers	749	18
13-2011	Accountants and Auditors	400	18
43-6013	Medical Secretaries	353	18
47-1011	Supervisors and Managers of Construction Trades and Extraction Workers	299	18
33-3051	Police and Sheriff's Patrol Officers	239	18
41-4011	Wholesale and Manufacturing Sales Representatives; Technical and Scientific	144	18
33-2011	Fire Fighters	135	18
11-9021	Construction Managers	130	18
29-2012	Medical and Clinical Laboratory Technicians	120	18
21-1011	Substance Abuse and Behavioral Disorder Counselors	109	18
11-2021	Marketing Managers	77	18
15-1021	Computer Programmers	62	18
17-1022	Surveyors	41	18

Note: Ranks reflect where an occupation's final score falls in the overall list of 209 high-wage, high-demand occupations. When occupations' scores are tied, more than 20 occupations can rank in the top 20. SOC = Standard Occupational Classification.

Region 4 - Benton, Lincoln, and Linn Counties
Occupational Prioritization for Training
Top 20 Occupations

SOC Code	SOC Title	Total Openings 2006-2016	Final Rank
29-1111	Registered Nurses	637	1
51-4121	Welders, Cutters, Solderers, and Brazers	85	2
29-1060	Physicians and Surgeons	138	3
29-2011	Medical and Clinical Laboratory Technologists	57	4
29-1123	Physical Therapists	35	4
29-1051	Pharmacists	91	6
29-2034	Radiologic, CAT, and MRI Technologists and Technicians	72	6
29-2061	Licensed Practical and Licensed Vocational Nurses	52	6
49-3023	Automotive Service Technicians and Mechanics	112	9
51-4041	Machinists	97	9
11-9111	Medical and Health Services Managers	68	11
11-1021	General and Operations Managers	278	12
49-3092	Recreational Vehicle Service Technicians	48	12
21-1023	Mental Health and Substance Abuse Social Workers	25	12
43-6013	Medical Secretaries	178	15
31-9091	Dental Assistants	128	15
47-2152	Plumbers, Pipefitters, and Steamfitter	106	15
43-5061	Production, Planning, and Expediting Clerks	61	15
13-1022	Wholesale and Retail Buyers, Except Farm Products	48	15
15-1021	Computer Programmers	46	15

Note: Ranks reflect where an occupation's final score falls in the overall list of 235 high-wage, high-demand occupations. When occupations' scores are tied, more than 20 occupations can rank in the top 20. SOC = Standard Occupational Classification.

Region 5 - Lane County
Occupational Prioritization for Training
Top 20 Occupations

SOC Code	SOC Title	Total Openings 2006-2016	Final Rank
29-1111	Registered Nurses	1,491	1
29-1060	Physicians and Surgeons	336	2
51-4121	Welders, Cutters, Solderers, and Brazers	282	2
29-1123	Physical Therapists	118	2
29-2061	Licensed Practical and Licensed Vocational Nurses	177	5
29-2011	Medical and Clinical Laboratory Technologists	96	5
29-2034	Radiologic, CAT, and MRI Technologists and Technicians	105	7
49-3023	Automotive Service Technicians and Mechanics	255	8
29-1051	Pharmacists	125	9
11-9111	Medical and Health Services Managers	125	9
21-1023	Mental Health and Substance Abuse Social Workers	80	9
43-6013	Medical Secretaries	238	12
47-2152	Plumbers, Pipefitters, and Steamfitter	142	12
29-1122	Occupational Therapists	31	12
11-1021	General and Operations Managers	582	15
31-9091	Dental Assistants	234	15
29-2071	Medical Records and Health Information Technicians	157	15
51-4041	Machinists	114	15
49-3092	Recreational Vehicle Service Technicians	85	15
41-4011	Wholesale and Manufacturing Sales Representatives; Technical and Scientific	214	20
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	172	20
31-9094	Medical Transcriptionists	111	20
15-1021	Computer Programmers	108	20
15-1071	Network and Computer Systems Administrators	108	20
49-9044	Millwrights	45	20

Note: Ranks reflect where an occupation's final score falls in the overall list of 218 high-wage, high-demand occupations. When occupations' scores are tied, more than 20 occupations can rank in the top 20. SOC = Standard Occupational Classification.

Region 6 - Douglas County
Occupational Prioritization for Training
Top 20 Occupations

SOC Code	SOC Title	Total Openings 2006-2016	Final Rank
29-1111	Registered Nurses	338	1
51-4121	Welders, Cutters, Solderers, and Brazers	108	1
29-1060	Physicians and Surgeons	64	3
11-1021	General and Operations Managers	151	4
21-1023	Mental Health and Substance Abuse Social Workers	12	4
49-3023	Automotive Service Technicians and Mechanics	75	6
11-9111	Medical and Health Services Managers	35	6
21-1014	Mental Health Counselors	25	6
33-2011	Fire Fighters	23	6
29-1123	Physical Therapists	10	6
31-9091	Dental Assistants	64	11
29-2061	Licensed Practical and Licensed Vocational Nurses	27	11
49-9044	Millwrights	14	11
51-1011	Supervisors and Managers of Production and Operating Workers	92	14
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	26	14
11-9021	Construction Managers	22	14
15-1021	Computer Programmers	19	14
29-1126	Respiratory Therapists	18	14
29-2021	Dental Hygienists	17	14
49-3092	Recreational Vehicle Service Technicians	13	14

Note: Ranks reflect where an occupation's final score falls in the overall list of 208 high-wage, high-demand occupations. When occupations' scores are tied, more than 20 occupations can rank in the top 20. SOC = Standard Occupational Classification.

Region 7 - Coos and Curry Counties
Occupational Prioritization for Training
Top 20 Occupations

SOC Code	SOC Title	Total Openings 2006-2016	Final Rank
29-1111	Registered Nurses	264	1
29-1060	Physicians and Surgeons	39	2
29-2011	Medical and Clinical Laboratory Technologists	25	3
51-4041	Machinists	17	3
29-1051	Pharmacists	20	5
11-9111	Medical and Health Services Managers	34	6
29-2034	Radiologic, CAT, and MRI Technologists and Technicians	25	7
47-2152	Plumbers, Pipefitters, and Steamfitter	20	7
29-1123	Physical Therapists	8	7
11-1021	General and Operations Managers	93	10
49-3023	Automotive Service Technicians and Mechanics	41	10
33-2011	Fire Fighters	32	10
29-2061	Licensed Practical and Licensed Vocational Nurses	26	10
29-1126	Respiratory Therapists	14	10
43-1011	Supervisors and Managers of Office and Administrative Support Workers	103	15
49-1011	Supervisors and Managers of Mechanics, Installers, and Repairers	35	15
43-6011	Executive Secretaries and Administrative Assistants	63	17
51-1011	Supervisors and Managers of Production and Operating Workers	50	17
21-1014	Mental Health Counselors	20	17
47-2031	Carpenters	98	20
11-9199	Managers, All Other	25	20
29-2055	Surgical Technologists	11	20
29-1131	Veterinarians	8	20

Note: Ranks reflect where an occupation's final score falls in the overall list of 151 high-wage, high-demand occupations. When occupations' scores are tied, more than 20 occupations can rank in the top 20. SOC = Standard Occupational Classification.

Region 8 - Jackson and Josephine Counties
Occupational Prioritization for Training
Top 20 Occupations

SOC Code	SOC Title	Total Openings 2006-2016	Final Rank
29-1111	Registered Nurses	1,017	1
29-1060	Physicians and Surgeons	169	2
51-4121	Welders, Cutters, Solderers, and Brazers	124	2
29-1123	Physical Therapists	75	4
47-2152	Plumbers, Pipefitters, and Steamfitter	126	5
29-2061	Licensed Practical and Licensed Vocational Nurses	130	6
29-2021	Dental Hygienists	70	6
49-3023	Automotive Service Technicians and Mechanics	214	8
29-2011	Medical and Clinical Laboratory Technologists	87	8
21-1015	Rehabilitation Counselors	61	8
11-1021	General and Operations Managers	508	11
31-9091	Dental Assistants	199	11
29-2034	Radiologic, CAT, and MRI Technologists and Technicians	93	11
21-1014	Mental Health Counselors	92	11
29-1051	Pharmacists	83	11
21-1023	Mental Health and Substance Abuse Social Workers	75	11
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	124	17
11-9111	Medical and Health Services Managers	98	17
31-9094	Medical Transcriptionists	80	17
33-2011	Fire Fighters	79	17
15-1071	Network and Computer Systems Administrators	73	17
29-1126	Respiratory Therapists	68	17

Note: Ranks reflect where an occupation's final score falls in the overall list of 229 high-wage, high-demand occupations. When occupations' scores are tied, more than 20 occupations can rank in the top 20. SOC = Standard Occupational Classification.

Region 9 - Gilliam, Hood River, Sherman, Wasco, and Wheeler Counties
Occupational Prioritization for Training
Top 20 Occupations

SOC Code	SOC Title	Total Openings 2006-2016	Final Rank
29-1111	Registered Nurses	227	1
29-1060	Physicians and Surgeons	44	2
29-1123	Physical Therapists	19	2
29-1051	Pharmacists	21	4
15-1031	Computer Software Engineers, Applications	54	5
21-1022	Medical and Public Health Social Workers	11	5
11-1021	General and Operations Managers	101	7
49-3023	Automotive Service Technicians and Mechanics	40	7
31-9094	Medical Transcriptionists	17	7
51-4121	Welders, Cutters, Solderers, and Brazers	15	7
29-2011	Medical and Clinical Laboratory Technologists	14	7
43-3031	Bookkeeping, Accounting, and Auditing Clerks	172	12
31-9091	Dental Assistants	34	12
29-2061	Licensed Practical and Licensed Vocational Nurses	18	12
47-2152	Plumbers, Pipefitters, and Steamfitter	14	12
29-1126	Respiratory Therapists	12	12
43-1011	Supervisors and Managers of Office and Administrative Support Workers	96	17
13-2011	Accountants and Auditors	59	17
51-1011	Supervisors and Managers of Production and Operating Workers	32	17
15-1071	Network and Computer Systems Administrators	30	17
11-9199	Managers, All Other	23	17
11-2021	Marketing Managers	15	17
11-3011	Administrative Services Managers	15	17
29-2034	Radiologic, CAT, and MRI Technologists and Technicians	15	17
11-3021	Computer and Information Systems Managers	13	17
21-1023	Mental Health and Substance Abuse Social Workers	10	17
29-1122	Occupational Therapists	7	17

Note: Ranks reflect where an occupation's final score falls in the overall list of 179 high-wage, high-demand occupations. When occupations' scores are tied, more than 20 occupations can rank in the top 20. SOC = Standard Occupational Classification.

Region 10 - Crook, Deschutes, and Jefferson Counties
Occupational Prioritization for Training
Top 20 Occupations

SOC Code	SOC Title	Total Openings 2006-2016	Final Rank
29-1111	Registered Nurses	749	1
29-1060	Physicians and Surgeons	141	2
47-2152	Plumbers, Pipefitters, and Steamfitter	165	3
49-3023	Automotive Service Technicians and Mechanics	151	3
29-1123	Physical Therapists	66	5
29-1051	Pharmacists	66	6
11-1021	General and Operations Managers	508	7
29-2061	Licensed Practical and Licensed Vocational Nurses	96	7
29-2011	Medical and Clinical Laboratory Technologists	57	7
11-9021	Construction Managers	150	10
11-2021	Marketing Managers	74	10
29-2034	Radiologic, CAT, and MRI Technologists and Technicians	70	10
43-1011	Supervisors and Managers of Office and Administrative Support Workers	412	13
31-9091	Dental Assistants	140	13
11-3031	Financial Managers	70	13
11-9111	Medical and Health Services Managers	68	13
29-1122	Occupational Therapists	33	13
33-3012	Correctional Officers	373	18
33-2011	Fire Fighters	147	18
11-9199	Managers, All Other	117	18
13-2072	Loan Officers	98	18
51-4041	Machinists	70	18
33-1021	Supervisors and Managers of Fire Fighting and Prevention Workers	46	18
49-3092	Recreational Vehicle Service Technicians	34	18
21-1022	Medical and Public Health Social Workers	32	18
29-1126	Respiratory Therapists	31	18
29-1071	Physician Assistants	27	18

Note: Ranks reflect where an occupation's final score falls in the overall list of 213 high-wage, high-demand occupations. When occupations' scores are tied, more than 20 occupations can rank in the top 20. SOC = Standard Occupational Classification.

Region 11 - Klamath and Lake Counties
Occupational Prioritization for Training
Top 20 Occupations

SOC Code	SOC Title	Total Openings 2006-2016	Final Rank
29-1111	Registered Nurses	161	1
51-4121	Welders, Cutters, Solderers, and Brazers	30	2
29-1060	Physicians and Surgeons	38	3
47-2152	Plumbers, Pipefitters, and Steamfitter	19	4
11-1021	General and Operations Managers	109	5
51-4041	Machinists	17	5
29-1123	Physical Therapists	8	5
11-3031	Financial Managers	20	8
29-1051	Pharmacists	16	8
29-2011	Medical and Clinical Laboratory Technologists	13	8
29-2034	Radiologic, CAT, and MRI Technologists and Technicians	23	11
21-1023	Mental Health and Substance Abuse Social Workers	19	11
31-9094	Medical Transcriptionists	12	11
25-1199	Postsecondary Teachers, Except Graduate Teaching Assistants	114	14
41-4012	Wholesale and Manufacturing Sales Representatives Non-technical and Scientific	54	14
33-2011	Fire Fighters	34	14
11-3011	Administrative Services Managers	20	14
33-1021	Supervisors and Managers of Fire Fighting and Prevention Workers	18	14
29-2061	Licensed Practical and Licensed Vocational Nurses	14	14
11-3061	Purchasing Managers	6	14

Note: Ranks reflect where an occupation's final score falls in the overall list of 186 high-wage, high-demand occupations. When occupations' scores are tied, more than 20 occupations can rank in the top 20. SOC = Standard Occupational Classification.

Region 12 - Morrow and Umatilla Counties
Occupational Prioritization for Training
Top 20 Occupations

SOC Code	SOC Title	Total Openings 2006-2016	Final Rank
29-1111	Registered Nurses	160	1
51-4121	Welders, Cutters, Solderers, and Brazers	41	2
29-2011	Medical and Clinical Laboratory Technologists	18	3
49-3023	Automotive Service Technicians and Mechanics	39	4
47-2152	Plumbers, Pipefitters, and Steamfitter	31	4
29-1051	Pharmacists	29	6
29-1060	Physicians and Surgeons	21	6
11-1021	General and Operations Managers	114	8
11-9111	Medical and Health Services Managers	25	8
29-2061	Licensed Practical and Licensed Vocational Nurses	21	10
11-3031	Financial Managers	19	11
15-1021	Computer Programmers	17	11
21-1015	Rehabilitation Counselors	9	11
43-1011	Supervisors and Managers of Office and Administrative Support Workers	112	14
41-4012	Wholesale and Manufacturing Sales Representatives Non-technical and Scientific	55	14
25-2041	Special Education Teachers, Preschool, Kindergarten, and Elementary School	20	14
29-2034	Radiologic, CAT, and MRI Technologists and Technicians	13	14
29-1126	Respiratory Therapists	10	14
51-4041	Machinists	9	14
29-1123	Physical Therapists	7	14

Note: Ranks reflect where an occupation's final score falls in the overall list of 194 high-wage, high-demand occupations. When occupations' scores are tied, more than 20 occupations can rank in the top 20. SOC = Standard Occupational Classification.

Region 13 - Baker, Union, and Wallowa Counties
Occupational Prioritization for Training
Top 20 Occupations

SOC Code	SOC Title	Total Openings 2006-2016	Final Rank
29-1111	Registered Nurses	147	1
51-4121	Welders, Cutters, Solderers, and Brazers	40	2
29-1060	Physicians and Surgeons	27	2
29-2011	Medical and Clinical Laboratory Technologists	16	4
29-1123	Physical Therapists	10	5
47-2152	Plumbers, Pipefitters, and Steamfitter	14	6
49-3023	Automotive Service Technicians and Mechanics	33	7
21-1022	Medical and Public Health Social Workers	9	7
21-1014	Mental Health Counselors	24	9
29-1051	Pharmacists	16	9
11-3031	Financial Managers	14	9
11-1021	General and Operations Managers	65	12
29-2061	Licensed Practical and Licensed Vocational Nurses	19	12
11-9111	Medical and Health Services Managers	13	12
21-1015	Rehabilitation Counselors	10	12
29-1122	Occupational Therapists	7	12
51-4041	Machinists	10	17
43-3031	Bookkeeping, Accounting, and Auditing Clerks	95	18
47-2031	Carpenters	54	18
43-6012	Legal Secretaries	12	18
29-2034	Radiologic, CAT, and MRI Technologists and Technicians	11	18

Note: Ranks reflect where an occupation's final score falls in the overall list of 184 high-wage, high-demand occupations. When occupations' scores are tied, more than 20 occupations can rank in the top 20. SOC = Standard Occupational Classification.

Region 14 - Grant, Harney, and Malheur Counties
Occupational Prioritization for Training
Top 20 Occupations

SOC Code	SOC Title	Total Openings 2006-2016	Final Rank
29-1111	Registered Nurses	129	1
51-4121	Welders, Cutters, Solderers, and Brazers	27	1
29-1060	Physicians and Surgeons	28	3
29-2011	Medical and Clinical Laboratory Technologists	15	4
29-1123	Physical Therapists	7	5
29-1051	Pharmacists	20	6
11-9111	Medical and Health Services Managers	19	6
49-3023	Automotive Service Technicians and Mechanics	34	8
29-2061	Licensed Practical and Licensed Vocational Nurses	26	9
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	21	9
21-1022	Medical and Public Health Social Workers	5	9
47-2031	Carpenters	27	12
21-1014	Mental Health Counselors	16	12
11-3031	Financial Managers	10	12
21-1023	Mental Health and Substance Abuse Social Workers	10	12
11-1021	General and Operations Managers	48	16
47-2152	Plumbers, Pipefitters, and Steamfitter	6	16
13-2011	Accountants and Auditors	27	18
49-1011	Supervisors and Managers of Mechanics, Installers, and Repairers	18	18
29-2034	Radiologic, CAT, and MRI Technologists and Technicians	11	18
29-2055	Surgical Technologists	9	18
29-1126	Respiratory Therapists	7	18
51-4041	Machinists	4	18

Note: Ranks reflect where an occupation's final score falls in the overall list of 172 high-wage, high-demand occupations. When occupations' scores are tied, more than 20 occupations can rank in the top 20. SOC = Standard Occupational Classification.

Region 15 - Clackamas County
Occupational Prioritization for Training
Top 20 Occupations

SOC Code	SOC Title	Total Openings 2006-2016	Final Rank
29-1111	Registered Nurses	1,026	1
29-1060	Physicians and Surgeons	324	1
51-4121	Welders, Cutters, Solderers, and Brazers	187	3
29-1123	Physical Therapists	97	4
51-4041	Machinists	149	5
29-2011	Medical and Clinical Laboratory Technologists	107	5
47-2152	Plumbers, Pipefitters, and Steamfitter	251	7
49-3023	Automotive Service Technicians and Mechanics	238	7
29-1051	Pharmacists	156	7
11-9111	Medical and Health Services Managers	133	7
29-2061	Licensed Practical and Licensed Vocational Nurses	117	7
29-2021	Dental Hygienists	108	7
41-4012	Wholesale and Manufacturing Sales Representatives		
	Non-technical and Scientific	867	13
15-1071	Network and Computer Systems Administrators	136	13
11-2021	Marketing Managers	131	13
29-2034	Radiologic, CAT, and MRI Technologists and Technicians	106	13
29-1122	Occupational Therapists	66	13
11-1021	General and Operations Managers	676	18
43-1011	Supervisors and Managers of Office and Administrative Support Workers	494	18
15-1031	Computer Software Engineers, Applications	245	20
13-2072	Loan Officers	227	20
13-1051	Cost Estimators	156	20
47-2081	Drywall and Ceiling Tile Installers	142	20
11-3031	Financial Managers	131	20
11-9021	Construction Managers	128	20
29-2012	Medical and Clinical Laboratory Technicians	94	20
13-2051	Financial Analysts	81	20
11-3061	Purchasing Managers	43	20

Note: Ranks reflect where an occupation's final score falls in the overall list of 187 high-wage, high-demand occupations. When occupations' scores are tied, more than 20 occupations can rank in the top 20. SOC = Standard Occupational Classification.



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