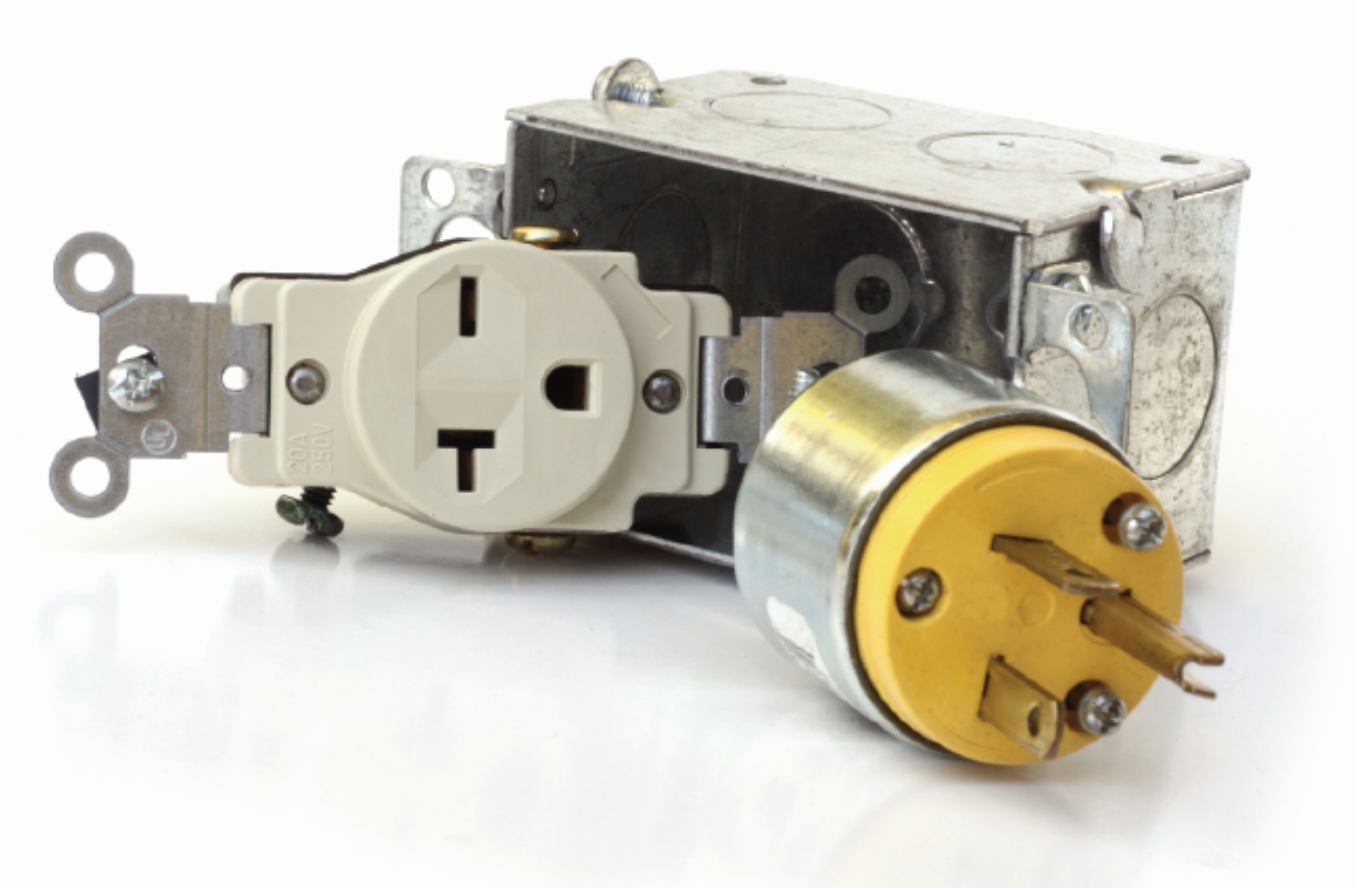
OREGON'S FORGOTTEN MIDDLE-SKILL JOBS

MEETING THE DEMANDS OF A 21ST-CENTURY ECONOMY

FEBRUARY 2009



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ACKNOWLEDGMENTS

Oregon's Forgotten Middle-Skill Jobs was written for the Skills2Compete-Oregon campaign by The Workforce Alliance (TWA), Washington, D.C., as part of its national Skills2Compete Campaign. The primary authors are Kermit Kaleba and Andrea Mayo. The national version of this report, *America's Forgotten Middle-Skill Jobs*, is available at www.Skills2Compete.org. To learn more about the Skills2Compete-Oregon campaign, go to www.Skills2Compete.org/Oregon.

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INTRODUCTION

Oregon has long enjoyed a reputation as an economic innovator, with globally recognized businesses producing cutting edge technologies and high-value services. The numbers speak for themselves: In a climate where economic growth slowed in 36 states, Oregon's state gross domestic product actually grew by 3.2 percent between 2006-2007, ranking seventh nationally.[1] Oregon ranked among the top third of states in one recent Kauffman Foundation report about states best positioned to succeed in the new economy,[2] and tied for eighth in a Kauffman Foundation report on entrepreneurial activity.[3]

There's no question that our highly skilled workforce has played a key role in our state's growth and success in recent decades, and we have much to be proud of in terms of educational attainment. According to the 2000 census, Oregon was among the top twenty states in the percentage of citizens with a bachelor's degree, and nearly 59 percent of Oregonians had completed some education beyond high school, ranking sixth among all states.[4] This latter figure is noteworthy because middle-skill jobs—those that require more than a high school diploma, but less than a four-year degree—make up the most significant segment of our total labor market, and will continue to do so for the foreseeable future.

However, we cannot afford to rest on our laurels. **Oregon is already beginning to experience shortages of the middle-skill workers that are so critical to our economic success**, and businesses across the state are reporting the negative impact of these shortfalls on their productivity and growth. To maintain our competitive edge in an increasingly competitive global economy, Oregon must invest in both high- and middle-skill workers to ensure our businesses have the talent they need.

Oregon has taken promising steps in this direction. In 2007, Governor Ted Kulongoski announced his "40-40-20" educational vision, in which by the year 2025, 40 percent of Oregon's adults would hold a bachelor's degree or higher, 40 percent would have an associate's degree or professional certificate, and the remaining 20 percent would have earned at least a high school diploma or its equivalent. In response to the governor's challenge, the Oregon Community College Association (OCCA) has adopted a mission to provide access to education and training for adult learners at all levels of educational need,[5] and Oregon's legislature doubled funding for the Oregon Opportunity Grant program. Local Workforce Investment Boards, community-based organizations and labor groups are banding with trade associations to play an important role across the state, providing high-quality training services to help prepare Oregon's workers for well-paying middle-skill jobs in manufacturing, construction, health care, and other key economic sectors.

These developments are important first steps in realizing the vision of the Skills2Compete-Oregon campaign: guaranteed access to the equivalent of at least two years of education or training past high school—leading to a career or technical credential, industry certification, or one's first two years of college—as well as access to the basic skills needed to pursue such education. As we discuss in this paper, there are precedents for resetting the bar for educational attainment, and there is strong evidence that such human capital investments yield substantial dividends for both workers and businesses.

OREGON'S FORGOTTEN MIDDLE-SKILL JOBS

Conventional wisdom holds that our nation is headed for—or perhaps already experiencing—an "hourglass" or "dumbbell" economy: a bifurcated labor market with a small number of highly skilled, highly paid workers and a much larger number of low-skill, low-paid workers. Within such a model, middle-skill occupations—the jobs that fueled the expansion of the world's largest economy and provided the foundation for a robust American middle class—are on the verge of extinction.

It's a bleak picture, to be sure. It's also a myth.

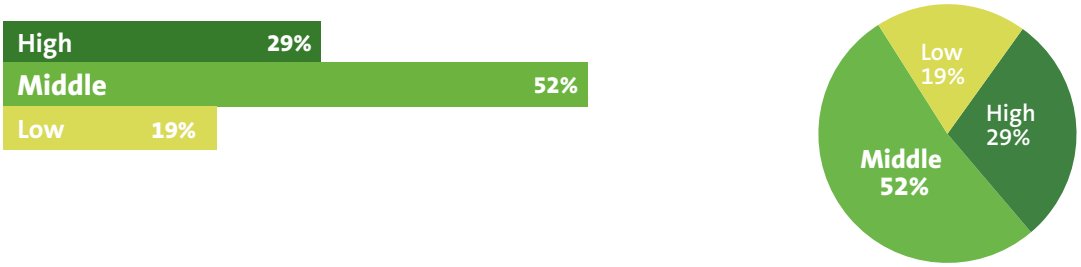
The truth is that **middle-skill jobs, which require more than a high school education but less than a four-year degree, currently make up the largest segment of jobs in our economy, and will continue to do so for years to come**. According to a recent report by economists Harry Holzer and Robert Lerman for the national Skills2Compete campaign, while middle-skill jobs have declined slightly as a portion of total employment, roughly half of all employment today is still in middle-skill occupations. And nearly half (about 45 percent) of all job openings between 2004 and 2014 will be at the middle-skill level. This compares with one-third of job openings in high-skill occupational categories and 22 percent in occupations requiring no more than a high school degree.[6]

The national picture holds true in Oregon, as well—in fact, middle-skill jobs are an even greater portion of the state's labor market than the nation as a whole. More than half of Oregon jobs in 2007 were middle-skill jobs, representing nearly 900,000 workers (Fig. 1). The demand for middle-skill workers in the state is expected to increase in the decade between 2006 and 2016, with more than 340,000 middle-skill job openings—almost half of all job openings—expected during this timeframe. This compares to low-skill jobs and high-skill jobs, which will account for 25 and 26 percent of job openings respectively (Fig. 2, Table 2).

Despite these numbers, policymakers at both the federal and state levels have increasingly diverted attention and resources away from middle-skill jobs, and the education and training investments needed to ensure that workers have the skills they need to succeed in these vital occupations. This represents a lost opportunity to invest in our economic future.

Demand for Middle-Skill Jobs is Strong, Will Remain Strong in Oregon

FIGURE 1. Oregon Jobs by Skill Level, 2007



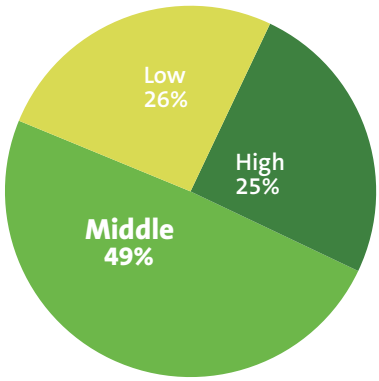
Source: Calculated by The Workforce Alliance from the Bureau of Labor Statistics website.

TABLE 1. Oregon Jobs by Skill Level, 2007

	Employment	Percent
Total, All Occupations	**1,682,150**	**100.0%**
Management	75,020	4.5%
Business and Financial	71,450	4.2%
Professional and Related	335,320	19.9%
Total, High Skill	***481,790***	***28.6%***
Sales and Related	177,470	10.6%
Office and Administrative Support	280,860	16.7%
Construction	85,860	5.1%
Installation and Repair	66,460	4.0%
Production	134,980	8.0%
Transportation and Material Moving	133,630	7.9%
Total, Middle Skill	***879,260***	***52.3%***
Service Occupations	307,490	18.3%
Farming/Fishing/Forestry Occupations	13,600	0.8%
Total, Low Skill	***321,090***	***19.1%***

Source: Calculated by The Workforce Alliance from the Bureau of Labor Statistics website.

FIGURE 2. Oregon's Total Job Openings by Skill Level, 2006-2016



Source: Calculated by The Workforce Alliance from Oregon Employment Department data.

TABLE 2. Oregon Jobs and Total Job Openings by Skill Level, 2006-2016

	Employment		Job Openings	
	2006	2016	Number	%
Total, All Occupations*	**1,752,724**	**1,999,522**	**703,185**	**100.0%**
Management	80,955	92,151	27,586	4.0%
Business and Financial	69,678	78,883	22,688	3.3%
Professional and Related	339,210	392,521	122,946	17.7%
Total, High Skill	***489,843***	***563,555***	***173,220***	***24.9%***
Sales and Related	186,139	210,217	86,788	12.5%
Office and Administrative Support	288,380	328,538	112,141	16.1%
Construction	84,882	97,033	29,957	4.3%
Installation and Repair	68,837	76,532	24,708	3.6%
Production	132,365	139,612	40,733	5.9%
Transportation and Material Moving	133,168	147,128	47,354	6.8%
Total, Middle Skill	***893,771***	***999,060***	***341,681***	***49.2%***
Service Occupations	306,260	368,793	166,225	23.9%
Farming/Fishing/Forestry Occupations	35,705	38,917	13,437	1.9%
Total, Low Skill	***341,965***	***407,710***	***179,662***	***25.9%***

* All Occupations also includes "non-classifiable" occupations, which do not fit into standard occupational categories as determined by the Oregon Employment Department.

Source: Calculated by The Workforce Alliance from Oregon Employment Department data.

HIGHLIGHT

Missing the Roots in the STEM

Policymakers have become increasingly concerned about U.S. global competitiveness in recent years, and a broad consensus has developed about the need for a strong science, technology, engineering, and math (STEM) workforce to support innovation industries and emerging technologies. In particular, business and political leaders have called for increasing the number of students receiving bachelor's or advanced degrees in these fields. The U.S. Congress responded in 2007 with the America COMPETES Act, which authorized $42 billion in federal support for STEM research and education. These investments, along with those made at the state level, will be critical to ensuring that Oregon remains a global leader in the innovation economy.

At the same time, employers are indicating that these highly skilled professionals aren't the only workers in short supply. In fact, there is a significant shortage of the technicians and middle-skill workers needed to implement the new technologies developed by highly skilled innovators. A 2005 National Association of Manufacturers report found that while 35 percent of manufacturers anticipated a shortage of scientists and engineers, 80 percent—more than twice as many respondents—anticipated a shortage of skilled production workers, precisely the kind of middle-skill jobs that require more than high school, but less than a four-year degree.[7] A truly comprehensive innovation agenda will address the demand for both highly educated innovation professionals and the middle-skill workers needed to implement their innovations. These middle-skill workers are at the roots of a successful STEM strategy.

THE FACE OF OREGON'S MIDDLE-SKILL JOBS

A middle-skill job requires education or training past high school, but less than a four-year degree. But what do these jobs look like? It may be easier to call up a vision of low-skill jobs that require a high school diploma or less, or high-skill professional jobs that require four-year and advanced degrees.

In truth, our communities and state rely on middle-skill jobs. **Middle-skill workers are the police officers and fire fighters who keep us safe in our homes. They are the nurses, therapists and other medical technicians who keep us healthy. They are the air traffic controllers, electricians, and mechanics who keep our infrastructure up and running.** These are local, hands-on jobs, meaning they are unlikely to be outsourced to other countries.

Many of these are well-paid jobs, offering Oregon workers a chance at economic security and prosperity. As illustrated in Table 3, these are jobs with good earning potential. Many offer median earnings that exceed the Oregon overall median for 2006 of $31,034.

Regional research supports the connection between many middle-skill jobs and good wages. A 2008 report from the Oregon Employment Department (OED) found that manufacturing jobs in the state paid an average annual salary of $49,715 in 2006, which was 31 percent higher than the average for all Oregon industries.[8] Another OED report on nursing occupations found that in 2007 registered nurses earned an average hourly wage of $32 and licensed practical nurses earned an average hourly wage of $20.[9] On a full-time basis, those wages project to annual salaries of more than $65,000 and $42,000, respectively. Demand for both nursing occupations is expected to grow by more than 20 percent between 2006-2016, while the state's manufacturing sector will need to fill 47,000 job openings over the same time period.

At the national level, the data tell a similar story. Between 1997 and 2005, American workers on the whole saw an overall real wage increase of just 5 percent (adjusting for inflation). At the same time, many middle-skill occupations saw significantly higher wage increases.

Of course, not all middle-skill occupations pay well or have meaningful advancement opportunities, confirming the fact that skills are sometimes only part of the economic success equation. But nationally, growth in demand for many middle-skill occupations has been fast enough to generate not only strong employment growth, but also rapid growth in wages.[10]

TABLE 3. Projected Oregon Demand for 30 Middle-Skill Occupations, 2006-2016

	Employment		Net Change		Job Openings	Median Earnings
	2006	2016	Number	%		2006
Computers						
Support Specialists	7,867	9,010	1,143	14.5%	2,181	$39,900
Specialists, Other	5,203	5,840	637	12.2%	1,262	$58,700
Construction						
Carpenters	15,044	17,184	2,140	14.2%	4,763	$35,200
Electricians	7,042	7,888	846	12.0%	2,322	$56,800
Painters	5,222	5,979	757	14.5%	1,610	$31,500
Operating Engineers	3,870	4,367	497	12.8%	1,556	$41,500
Plumbers	5,192	5,925	733	14.1%	2,011	$57,000
Healthcare						
Dental Hygienists	3,032	3,957	925	30.5%	1,223	$72,500
Licensed Practical Nurses	2,691	3,309	618	23.0%	1,272	$41,200
Medical Lab Technicians	1,239	1,609	370	29.9%	754	$36,900
Physical Therapy Assistants	475	640	165	34.7%	258	$41,100
Radiology Technicians	2,070	2,658	588	28.4%	1,029	$53,500
Registered Nurses	27,988	34,921	6,933	24.8%	13,515	$64,100
Respiratory Therapists	1,063	1,324	261	24.6%	653	$50,000
Surgical Technologists	853	1,087	234	27.4%	360	$40,500
Installation, Maintenance, and Repair						
Aircraft Mechanics	1,198	1,338	140	11.7%	439	$51,300
Auto Mechanics	6,728	7,780	1,052	15.6%	2,982	$35,400
Bus/Truck Mechanics	4,167	4,668	501	12.0%	1,637	$39,400
Heating and AC Installers	2,762	3,126	364	13.2%	755	$38,800
Heavy Equipment Mechanics	2,113	2,318	205	9.7%	686	$42,300
Industrial Machinery Mechanics	4,488	4,598	110	2.5%	1,025	$42,900
Transportation						
Air Traffic Controllers	200	221	21	10.5%	75	$104,200
Heavy Truck Drivers	25,480	27,887	2,407	9.4%	6,765	$33,700
Public Safety						
Emergency Medical Technicians	1,340	1,692	352	26.3%	526	$32,600
Fire Fighters	3,421	3,830	409	12.0%	1,461	$46,400
Police Officers	5,090	5,782	692	13.6%	2,099	$51,500
Other						
Claims Adjusters	3,318	3,605	287	8.6%	714	$49,500
Legal Secretaries	3,272	3,793	521	15.9%	1,197	$37,500
Machinists	3,470	3,775	305	8.8%	1,149	$39,100
Paralegals	1,752	2,008	256	14.6%	407	$39,400

* 2006 median annual earnings for all occupations in Oregon = $31,034

Source: Projections data tabulated using Oregon Employment Department data. Median Earnings data from America's Career Infonet website.

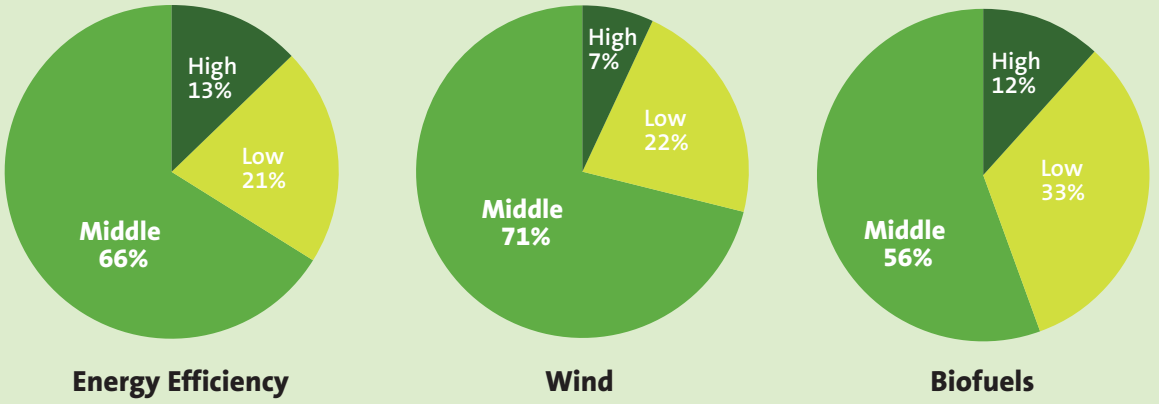
HIGHLIGHT

The Middle of the Green Revolution

More than ever before, policymakers and business leaders are paying attention to clean energy industries and technologies, which promise profound environmental and economic benefits for all Americans. A recent report by the Center on Wisconsin Strategy, the Apollo Alliance, and The Workforce Alliance indicates that the skills needed in the green economy closely mirror the middle-skill demands of the labor market as a whole. "Greener Pathways" examines emerging opportunities in the energy efficiency, wind, and biofuels sectors, and urges stakeholders to scale up green job training by leveraging existing state and local workforce development systems.

Green Jobs are Middle-Skill Jobs

FIGURE 3. U.S. Employment in Green Jobs Industries by Skill Level, 2004



Source: Tabulated by The Workforce Alliance from the US Bureau of Labor Statistics website.

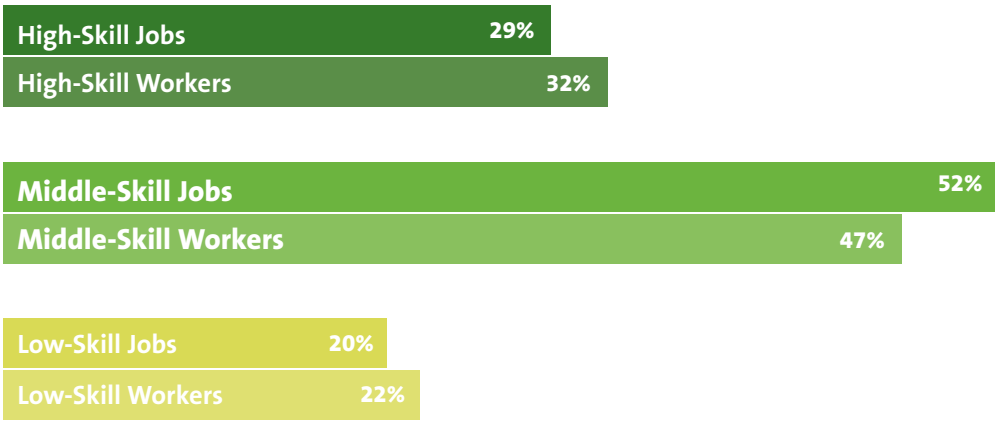
Oregon is rapidly establishing itself as a leader in the green jobs movement. For example, Columbia Gorge Community College currently offers one- and two-year certificate and degree programs in renewable energy technology, creating a pipeline of workers for wind energy producers in the state. Portland Community College offers both certificate and degree programs in solar energy technologies. Lane Community College offers certificate and degree programs focused on the skills needed to install new "green" technologies. Apprenticeship programs are also providing green training: the National Electrical Contractors Association (NECA) / International Brotherhood of Electrical Workers (IBEW) Training Center in Portland provides both current and apprentice electricians with instruction in solar photovoltaic technologies. These and similar programs will provide Oregon businesses with the skilled and adaptable workforce needed to respond successfully to rapidly emerging business opportunities in the green economy.

OREGON'S MIDDLE-SKILL GAP TODAY AND TOMORROW

If middle-skill jobs are going to comprise the main portion of employment and worker-generated economic activity in our state, then Oregon's economic future is dependent on ensuring an adequate source of skilled workers to fill those positions. Unfortunately, with the dramatic decreases in support for middle-skill training in this country—and the accelerating retirement of middle-skill workers—the supply of such workers is not meeting current demand in states throughout the U.S. Here in Oregon, 52 percent of all jobs are classified as middle-skilled, but only 47 percent of Oregon workers likely have the education and training required to fill these positions. In reality, the gap is likely even greater in particular industries because many workers trained to the middle-skill level may not have the right skills for particular jobs. This means that thousands of well-paid and rewarding jobs are already going unfilled in our state today, in industries that are and will be essential to Oregon's economic portfolio.

Oregon's Skills Mismatch: A Middle-Skill Gap

FIGURE 4. Oregon's Jobs and Workers by Skill Level, 2004



Sources: Oregon Employment Department and US Bureau of the Census.

Greater Pain in High Growth Industries

State and regional data underscores the challenges facing Oregon. In a 2008 statewide survey conducted by the Oregon Employment Department, nearly half of private-sector employers reported that a lack of skilled workers was making it difficult to fill job vacancies, making it the single factor most frequently cited by respondents.[11]

These gaps are being felt most acutely in some of our high growth industries. A 2006 report on Oregon's healthcare workforce needs found that 10 of the 25 fastest growing occupations in the state were in the healthcare industry, and that healthcare occupations would represent 13 percent of new jobs in the state between 2004-2014. The report looked at employer demand

and educational pipelines for these jobs, and identified seventeen shortage occupations, many of which require post-secondary education and training short of a four-year degree. For example, the report found that Oregon will require more than 1,200 new registered nurses ***each year*** between 2004-2014, but that the state produced fewer than 1,100 graduates from registered nursing programs, a gap of more than 100 per year. In addition, employers reported vacancy rates of over 25 percent for psychiatric technicians, and more than 13 percent for cardiovascular technologists and technicians.[12]

The clean energy industry is another field where skilled worker shortages may soon impact our growth and competitiveness. A 2008 report found that although employers predicted a need for 600 wind technicians in the next four years—jobs paying between $20-24 an hour—Oregon's education and training providers currently lack the capacity to meet demand.[13]

The economic impact of skilled worker shortages is real. According to the 2008 OED employer survey, 27 percent of respondents noted that difficulty in recruiting qualified workers led to lower overall productivity, 23 percent reported reduced production and sales, and 20 percent reported negative impacts on product or service quality.[14] And a 2004 survey of manufacturing employers in Douglas County found that nearly 30 percent of respondents felt that difficulty finding skilled applicants was affecting their ability to grow their business.[15] In addition to stifling growth, there are other reasons for Oregon to worry about a lack of skilled workers. As our population ages, for example, nurses and other healthcare professionals will be increasingly important—and increasingly scarce. Ensuring that we have a sufficient number of workers prepared to take these available jobs, both now and in the future, is an investment not just in our workforce but also in the health and wellbeing of our citizens and our communities.

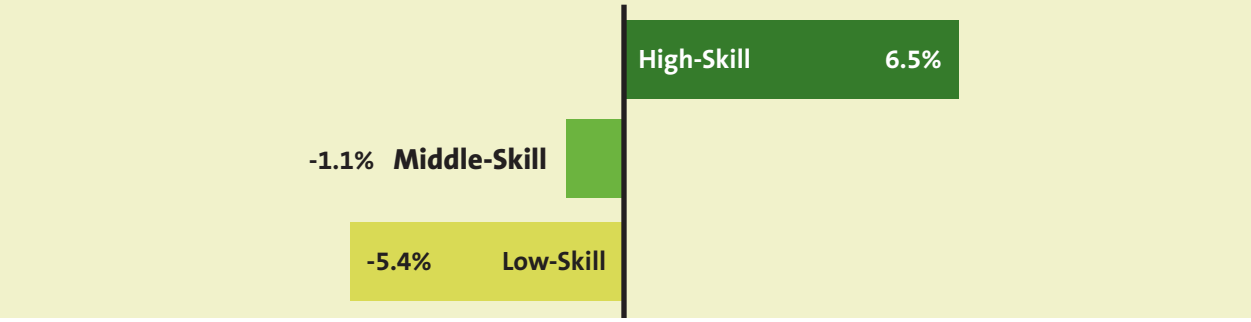
Oregon Educational Projections: A Widening Middle-Skill Gap

Oregon educational projections (Figs. 5 and 6) suggest that the shortage of workers to fill middle-skill jobs is unlikely to improve. During the fifteen years between 1989 and 2004, the state saw a growth in residents with educational attainment at the high-skill level and a decrease in those at the middle- and low-skill levels. **The state will see a significant change in these trends over the subsequent fifteen years, when the proportion of low-skill workers in Oregon's workforce is likely to increase at the same time that the percentage of high- and middle-skill workers is projected to decline.** This trend is due in part to the aging out of middle-skill, blue-collar workers who are less likely to delay retirement than high-skill, white-collar workers. Immigration trends by themselves are likely to do little to offset middle-skill attrition, as most workforce growth in the state due to in-migration will likely occur at the low-end of the skill spectrum or at the high-end of the skill spectrum (for example, engineers brought in from overseas through H-1B visas).

These educational, retirement, and immigration trends, if not addressed, will only exacerbate the mismatch between the skill needs of Oregon's businesses and the state's available workforce, stifling economic growth and limiting opportunity for thousands of Oregon workers to advance within the state's economy.

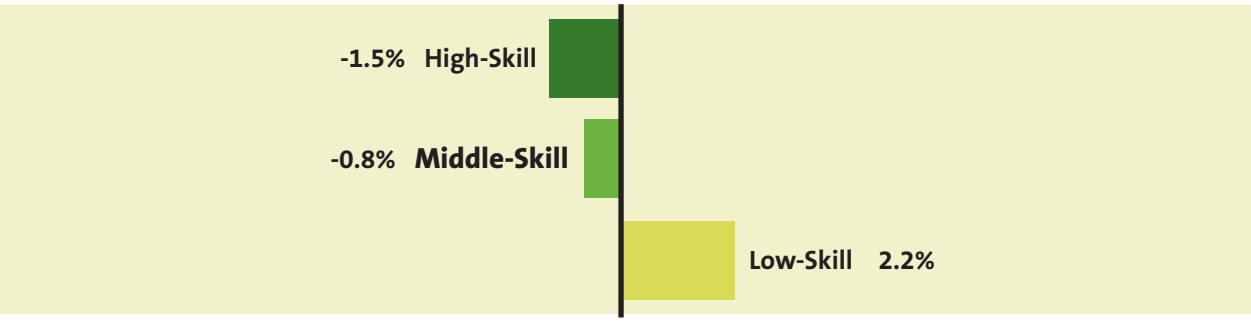
To offset these trends, Oregon must continue to take the type of proactive policy action needed to align its workforce and education resources to better meet the state's labor market demand. This will have to include devoting adequate resources to prepare many more Oregon residents at the low-skill level for middle-skill jobs.

FIGURE 5. Percentage Change in Oregon Educational Attainment, 1989-2004



Source: Calculated by The Workforce Alliance using December 1989 and 2004 CPS data.

FIGURE 6. Projected Percentage Change in Oregon Educational Attainment, 2004-2020



Source: Current attainment calculated by The Workforce Alliance using December 2004 CPS data. 2020 attainment projected by The Workforce Alliance using demographic data from the December 2005 CPS and population projections calculated by RAND California Statistics.

TABLE 4. Oregon's Actual and Projected Change in Educational Attainment, 1989 - 2020

	1989	2004	2020	Change 1989-2004	Change 2004-2020
Low-Skill	27.0%	21.6%	23.8%	-5.4%	2.2%
Middle-Skill	48.9%	47.8%	47.0%	-1.1%	-0.8%
High-Skill	24.1%	30.6%	29.1%	6.5%	-1.5%
Low-Skill	393,950	400,455	467,198	6,505	66,743
Middle-Skill	714,357	885,665	922,482	171,308	36,816
High-Skill	352,297	566,993	571,181	214,696	4,188
Total	**1,460,604**	**1,853,113**	**1,961,256**	**392,509**	**108,143**

Source: Current and past attainment calculated by The Workforce Alliance using December 1989 and 2004 CPS data. Current and past total labor market estimated by Bureau of Labor Statistics. 2020 attainment projected by The Workforce Alliance using demographic data from the December 2005 CPS and population projections calculated by RAND California Statistics.

An Even Greater Basic Skills Crisis?

A major obstacle to addressing Oregon's middle-skill gap is the growing number of residents who are not academically prepared to enter the education and training programs that would prepare them for these jobs. As Holzer and Lerman point out in "America's Forgotten Middle-Skill Jobs," the data supporting education demand projections likely underplays the need for more broadly based basic skills education. The authors note that despite the increases in U.S. educational attainment over the last twenty years, the National Assessment of Adult Literacy (NAAL) indicates only a slight increase in quantitative skills between 1992 and 2003, and no improvement at all for prose and document literacy.

A new report from the National Commission on Adult Literacy confirms that the nation—and Oregon—are facing substantial gaps when it comes to basic skills. The Commission cites evidence that 93 million adults nationally lack the literacy to participate in postsecondary education and training required for the jobs of the future. Tens of millions of Americans face significant educational barriers, including lack of a high school education or inadequate English language skills. Forty percent of all college students and nearly two-thirds of two-year college students must take at least one remedial course.[16]

In 2006, Oregon ranked thirtieth nationally in the number of individuals enrolled in adult basic and secondary education, and English as a Second Language programs, with fewer than 22,000 enrolled in related programs. **The report also reveals that more than 286,000 Oregonians between the ages of 18-64 lacked a high school credential, indicating that we are far from meeting the basic skill attainment levels needed to grow our middle-skill workforce.**

CLOSING THE GAP

The Face of Middle-Skill Education and Training

There are a number of vocationally focused education and training programs in Oregon that can help close the state's middle-skill gap. Unlike education for high-skill jobs, which involves college or post-graduate degrees, education for middle-skill jobs can come in many different forms—for example, occupational certifications, associate's degrees, apprenticeship certifications—and in many different settings, including community colleges, community based training organizations, WorkSource Centers and workplaces.

An associate's degree allows students to enter the workforce immediately upon completion of the degree. Associate's degrees are generally required for occupations such as registered nurse, radiation therapist, and computer specialists. Career or technical certificates lead to certification of the knowledge and skills needed to perform the duties of a given occupation, according to regulations or nationally accredited standards. They generally require less classroom time than associate's degrees, offering a path for individuals to develop and verify specific skills sets. They are also extremely useful for individuals already in the workplace as a means of reinforcing existing skills sets and acquiring new skills. Examples of jobs where a career or technical certificate could be valuable include dental and legal assistants, auto mechanics, and fire fighters.

Apprenticeships are supervised employment programs that combine classroom instruction and on-the-job training. Generally offered directly by employers or through labor-management partnerships, apprenticeships are usually required for a high-demand career as an electrician, aircraft mechanic, or plumber.

For workers whose basic skills are not at a level that allows them to enter these types of education and training programs, there are program options that teach English and basic reading and math skills in the context of occupational skills. These programs often connect to a specific job that is on a defined career ladder or else to further education that results in a middle-skill credential.

Oregon has a number of exemplary middle-skill education and training opportunities that can serve diverse populations. These are just a few examples:

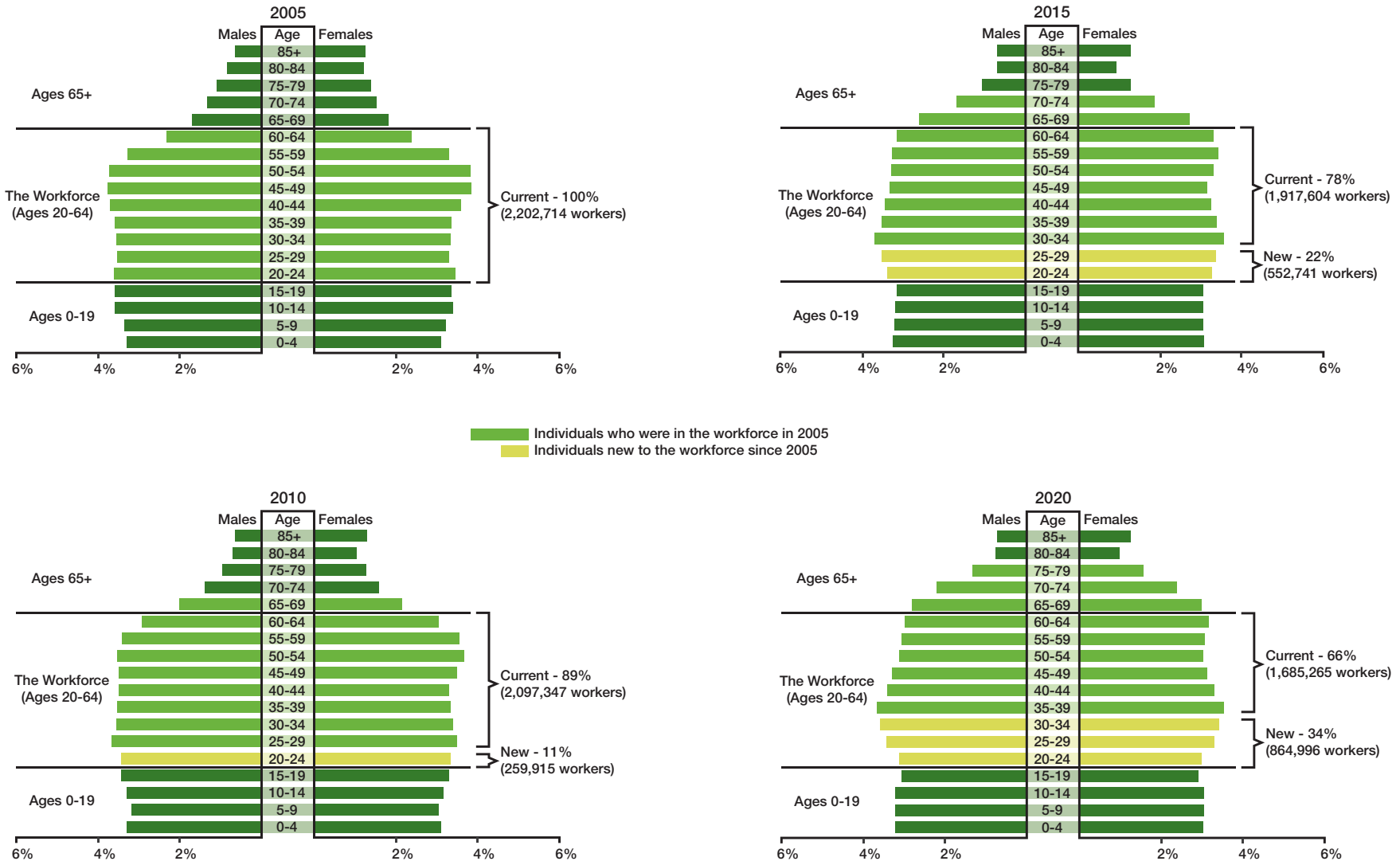
- Women seeking family-supporting jobs in the construction industry can participate in the "Pathways to Success" pre-apprenticeship program run by Oregon Tradeswomen, Inc. This free seven-week course provides on-site skills training, classroom instruction in math and measurement, and job search assistance upon completion.
- Each year, Portland YouthBuilders provides vocational and leadership training to more than 200 young people between the ages of 17 and 24 who lack a high school diploma. Participants are enrolled full-time for up to twelve months, and may pursue instruction in either computer technology or construction trades.
- Job seekers with limited English can enroll in one of three *Career Pathway with Vocational ESL (VESL)* programs offered by Mt. Hood Community College in Gresham. The three programs—Nursing Assistant, Welding Technology, and Machine Tool Technology—include concurrent VESL classes, credit-bearing content classes, wrap-around support services, guest presentations from employers, and site visits.

Understanding Oregon's Future Workforce

Clearly, Oregon has a number of options for training people for middle-skill jobs. But in order to reverse the growing middle-skill gap in our state, we must expand access to these programs with a full understanding of the composition of our future workforce. Currently, the majority of public postsecondary education and training resources are devoted to a comparatively small number of young people under the age of 25 who, ultimately, will comprise a minor portion of our state's workforce for the coming decades. In fact, **two-thirds of the people who will be in Oregon's workforce in the year 2020 were already working adults—that is, long past the traditional high school-to-college pipeline—in 2005** (Figure 7, 2020 Pyramid).

If Oregon is going to address the skill gaps on its horizon, we cannot focus education strategies solely on those future workers coming out of high school. We also will need to look at how those adults currently in the workforce—who could benefit significantly from new investments in education and training—can become part of the solution to the middle-skill gap facing our state today and in the years ahead.

FIGURE 7. Current Working Age Oregon Adults in the Current and Projected Population, 2005- 2020



Source: Calculated by The Workforce Alliance using population projections from The Oregon Office of Economic Analysis.

A 21st-Century Skill Guarantee

If we are to realize our state's full economic potential, educational access must reflect the demands of a 21st-century economy and the realities of the 21st-century workforce. Given that the largest portion of Oregon jobs are at the middle-skill level and the majority of future workers are already in the workforce today, the Skills2Compete-Oregon campaign supports the following vision for our state:

> *Every working Oregonian should have access to the equivalent of at least two years of education or training past high school—leading to a career or technical credential, industry certification, or one's first two years of college—to be pursued at whatever point and pace makes sense for individual workers and industries. Every person must also have access to the basic skills needed to pursue such education.*

It's an ambitious goal, but not an unprecedented one. Throughout our nation's history, federal and state policymakers have elevated educational guarantees to meet the changing skill requirements brought on by economic and technological change. And, indeed, leaders here in Oregon have already taken some steps to address similar challenges here in the 21st century. But there is more to be done.

Historical Precedents

As the nation transitioned from an agricultural economy to an industrial economy in the mid-nineteenth century, policymakers across the United States realized that a broader skill set was required from a much greater segment of the population. This was one important factor in the development of the high school movement to provide a free public education to all citizens. Between 1910 and 1930, the proportion of seventeen-year-olds in secondary education increased from less than 9 percent to 30 percent, fueling the expansion of America's great cities and industries. By the late 1990s, nearly 70 percent of U.S. students were graduating with a high school diploma. Universal secondary education is now understood as one of the fundamental guarantees our society makes to its citizens.

By the middle of the 20th century, society realized that postsecondary education and training would allow the United States to flourish. This was the atmosphere in which the GI Bill was passed in 1944. Between 1944 and 1956, nearly 8 million returning servicemen and servicewomen used the GI Bill. People pursuing four-year college degrees accounted for about a quarter (2.2. million) of those benefiting from the program. But **a much larger—and typically forgotten—number of GIs pursued what we would today recognize as middle-skill training, with 3.5 million enrolled in business or trade school, 1.4 million receiving publicly funded on-the-job training, and nearly 700,000 receiving farm training.** As such, a broad-based investment in middle skills was a big part of our country's post-war prosperity.

State Skill Guarantees

Unfortunately, more recent federal investments in postsecondary education and job training have been in decline. But some forward-thinking states have been making vital commitments to the skills and economic security of their citizens, recognizing that a new minimum level of skills and education should be made available to state residents.

For example, the Georgia HOPE Grant program, funded with lottery proceeds, pays tuition, fees, and up to $300 for books for Georgia residents to earn a certificate approved by the state

Department of Technical and Adult Education (or a comparable program of study approved by the Board of Regents) in a public technical college or public college or university. The HOPE Grant program does not have income- or merit-based criteria for eligibility (although recipients must make satisfactory academic progress while receiving it) and allows part-time attendance. According to the state Department of Technical and Adult Education, enrollment in public technical colleges has increased by 110 percent since the HOPE program began.

In 2007, Michigan Governor Jennifer Granholm announced the creation of the No Worker Left Behind program in her State of the State address. The program, officially launched in August 2007, pays tuition of up to $5,000 per year for two years for 100,000 Michigan workers to pursue a degree or certificate at a community college, university, or other approved training program in a high-demand occupation (determined on a regional basis). The state reprogrammed $40 million in federal funds—primarily from the Workforce Investment Act and Trade Adjustment Assistance programs—to support the initiative. The separate Michigan Promise program guarantees every new high school graduate a $4,000 scholarship for completing two years of postsecondary education at an eligible state institution.

In Washington, the state legislature in 2007 authorized $11.5 million per year for their Opportunity Grant program, which covers tuition for up to 45 academic credits at any state technical or community college, and up to $1,000 per year for books and supplies. Any Washington resident student with a family income at or below 200 percent of the federal poverty level is eligible to participate in the program.

The Benefits and Returns of a 21st-Century Skill Guarantee

Anyone who doubts the value of guaranteeing up to two years of postsecondary education or training needs only to look at the evidence. A recent study of community and technical college students in the state of Washington found that those that reached a "tipping point"—completing the equivalent of two semesters of postsecondary education and earning a credential or certificate—gained significant earning advantages over those who did not reach this threshold. For example, students who started in adult basic education or GED courses and reached the tipping point made an average of $8,500 more per year than students who completed fewer than 10 credits over the same time period.[17]

A report on Oregon's adult learners by the Council for Adult and Experiential Learning and the National Center for Higher Education Management Systems found that **adults with some college (but not a degree) could expect to earn more than $150,000 more over the course of their lifetimes than those with only a high school education, and adults with an associate's degree averaged more than $300,000 more in lifetime earnings.**[18]

These findings are consistent with those of Holzer and Lerman who found that the median worker with an associate's degree earned about 33 percent more than a worker with only a high school degree, while workers with a bachelor's degree earned about 62 percent more than workers with only a high school degree.[19] These studies indicate not just that postsecondary education provides a significant earnings advantage for workers, but also that the per-year benefits for workers receiving a two-year degree are comparable to those receiving a four-year degree.

Such a guarantee of access to middle-skill education for all workers would increase productivity and earnings in Oregon. According to the Organization for Economic Co-operation and Development (OECD), each year of postsecondary education leads to an increased per capita output of between 4 and 7 percent.[20] Increasing the average total schooling of a city's population

by two years increases the wages of all workers by about 6 percent, regardless of individual educational attainment.[21] And one additional year of schooling leads to an 8.5 percent increase in productivity in the manufacturing sector, and more than a 12 percent productivity increase in other industrial sectors.[22]

A 21st-century skill guarantee for all Oregon workers would also increase public resources. Increasing the number of U.S. adults with more than a high school diploma but less than a baccalaureate degree by 10 percent would increase federal tax revenue by $14 billion,[23] and would save the federal government up to $2,500 per person in reduced reliance on public assistance programs.[24]

CONCLUSION

Middle-skill workers will continue to serve as the backbone of our state economy for years to come. They will continue to repair our roads and bridges, care for our sick and elderly, transport goods, keep our communities safe, and provide a host of other services that we rely on daily. But without sufficient education and training opportunities, our businesses and communities will continue to suffer from a lack of qualified workers, and too many low-income Oregonians will not have access to the many middle-skill jobs that are going unfilled.

While Oregon has taken some important steps in addressing the growing shortage of middle-skill workers, **it is time for a bold, visionary step that will ensure our place in a 21st-century economy.** At various times in our nation's history, we have adjusted the basic level of education guaranteed to all Americans as a way to adjust to a changing economy and remain competitive. Universal high school and the GI Bill are examples of when we did this with great success in the past. It's time to do it again by guaranteeing that all Oregon residents have access to training for jobs at the middle-skill level.

Having a two-year postsecondary skill guarantee as a guiding vision for Oregon's economic and education policy would provide our workers and businesses with the skills they need to compete in an increasingly competitive global marketplace. There are a number of ways to achieve this goal—and experts from the business and training communities are prepared to roll up their sleeves and make it happen—but it will not happen without strong political leadership and commitment. We urge our policymakers at both the state and federal level to unite around this new vision that a growing number of states are starting to embrace, and champion the policies and strategies necessary to ensure that Oregon remains at the forefront of the innovation economy.

APPENDIX: METHODOLOGY

Table 1 and Figure 1: Data from the Bureau of Labor Statistics[25]. Occupational categories (high, middle, low skill) based on the methodology used in Holzer and Lerman, 2007[26].

Table 2 and Figure 2: Based on occupational projections for 2006-2016 by the Oregon Employment Department[27]. Occupational categories (high, middle, low skill) based on the methodology used in Holzer and Lerman, 2007.

Figure 3: Data from the Bureau of Labor Statistics (BLS).[28] Occupations divided into skill levels (high, middle, low) based on educational attainment requirements as defined by BLS. Because BLS does not classify occupations as green jobs, this section of the report assumes that the skills distribution in green jobs is the same as the skills distribution that occurs across all related occupations.

Table 3: Based on occupational projections for 2006-16 by Oregon Employment Department, using recategorization of occupations according to BLS Education and Training Categories.[29] Jobs requiring at least moderate-term on-the-job training, related work experience, a post-secondary vocational award, or an associate's degree were classified as middle-skill.

Figure 4: Based on occupational projections for 2004-2014 by the Oregon Employment Department, and 2004 American Community Survey (ACS) data on educational attainment by state[30]. Occupational categories (high, middle, low skill) based on the methodology used in Holzer and Lerman, 2007. Only workers in the labor market and at least 25 years of age (i.e., past traditional school age) are counted.

Figures 5 and 6, and Table 4: Based on Current Population Survey (CPS) data for 1989, 2004, and 2005[31] along with population projection data[32] by RAND California Statistics and labor force estimates[33] by the Bureau of Labor Statistics.

- **1989, 2004 and 2020 Educational Attainment:** Past years educational attainment data reported only for workers in labor force and aged 25 and over, using CPS data. 2020 projections calculated using static educational attainment model presented in Hanak and Baldasarre, 2005[34]. In that model, educational attainment figures are calculated for the state's current workers (workers aged 25-49 in 2005) for each of 12 different race, ethnicity, gender and age cohorts. Educational attainment for these cohorts is assumed to be static over the ensuing 15 years (2020), and educational attainment for new cohorts of workers (ie, younger than 25 years in 2005) is assumed to mirror that of similar age-race-gender groups today. As such, changing educational attainment throughout the state's population is calculated based on projected demographic changes in the composition of the working population, and does not take into account possible changes in behavior, immigration, et.al.

- **Creating Skill Categories Using Educational Attainment Data:** Skill attainment categories (high, middle, low) for 1989 created using a reclassification of CPS-reported "grades completed" that parallels the educational attainment categories later used by CPS, and reclassified in this table for current and future years using the same method as in Figure 4, page 11.

Figure 7: Data from long-term population projections (2005 to 2020) by age and gender cohorts, as calculated by the Oregon Office of Economic Analysis[35]. Each cohort was either classified as a "current working age adult" or "not a current working age adult" based solely on age. Current working age was defined as ages 20 to 64.

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