

2013

Washington State Centers of Excellence

ADDRESSING SKILLS GAPS, CREATING CAREERS

Key Findings from the Association of Washington Business



Economic & Workforce Solutions



Introduction

Today, more than ever, Washington state needs a workforce pipeline filled with candidates who have the necessary skills to help their businesses grow in a globally competitive economy.

Sadly, finding those skilled workers, even in the midst of record unemployment, remains a challenge. This is true for businesses of all sizes and industries statewide. In Southwest Washington, where the unemployment rate hovers at 11%, longtime AWB member Longview Fibre Paper and Packaging says the skills gap is its biggest obstacle in trying to fill jobs at its Longview facility. Regrettably, most of the applicants lack the necessary mathematics, language or computer skills to work at the company's paper mill.

Thousands of other Washington employers face this same hiring challenge daily.

That's why the Association of Washington Business, the AWB Institute and the State Board for Community and Technical Colleges are collaborating to address this workforce dilemma. This effort extends to helping businesses and organizations in every corner of the state, across all industries, find the right workers to succeed and fuel our economy.



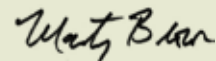
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This report captures the findings from those sessions and offers policy recommendations going forward that will further enhance workforce training efforts. We hope you will take time to review the report and share it widely with your business and industry colleagues, and join us in our efforts to boost Washington's skilled workforce.



DON BRUNELL
PRESIDENT, AWB



MARTY BROWN
EXECUTIVE DIRECTOR, SBCTC

Overview of the Process

In March and April of 2013, SBCTC and the AWB Institute co-hosted 10 industry skills gap forums with the state's Centers of Excellence (COEs) to gather information directly from business about skills that are missing in the employment candidates they are recruiting. More than 100 employers and 150 educators attended these sessions around the state.

The COEs serve as the statewide liaisons to business, industry, labor and the state's educational systems for the purpose of creating a highly skilled and readily available workforce to meet industry staffing needs. Each Center focuses on a targeted industry and works in partnership with community and technical colleges to deliver fast, flexible, quality education and training programs. The targeted industries represented by the Centers include: Aerospace and Advanced Manufacturing; Agriculture; Allied Health; Clean Energy; Construction; Education; Homeland Security; Information and Computing Technology; Global Trade & Supply Chain Management; and Marine Manufacturing and Technology. Industry representatives guide training and instruction to help ensure students develop employable skills.

More than 100 employers and 150 educators attended these sessions around the state.

The goals of these forums were to (1) hear firsthand from employers about the skills they seek in job applicants; (2) identify the shortcomings in the education and training process; and (3) develop a plan to work with the COEs in addressing those concerns.

Among the key findings from participating employers who attended the forums:

All workforce programs should include a focus on basic employability skills.

Middle and high school students, as well as the educators who advise them, are often unaware of available career and training programs.

College programs need to focus on developing leadership and management skills as identified by key industries.

Continuing education, stackable credentials and flexible training models will help provide business and industry with vital incumbent worker training. Employees must embrace lifelong learning and participate in continued professional development if they are to remain competitive in today's employment market.

Technical skills are critical across all industries.

This report is designed to summarize the primary industry findings from these 10 meetings. A more comprehensive report will be delivered to the college presidents in May of 2013. Following are industry data, Center of Excellence descriptions and skills and career outcomes from each forum.

Key Findings

Current and Future Demand by Industry

WHERE THE SKILLS GAPS EXIST:

- Machinists
- Engineers
- A&P Mechanics
- Quality Assurance
- Composites
- Machine Tool Maintenance

Aerospace and Advanced Manufacturing

Housed at Everett Community College, the Center of Excellence for Aerospace and Advanced Materials Manufacturing acts as a conduit to Washington's education system about industry trends and provides a central source of information on education and training services available to meet the needs of the aerospace and manufacturing sector and enhance the careers of students in these sectors.

www.a2m2.net





600,000
U.S. MANUFACTURING JOBS
 remain unfilled
 ANNUALLY BECAUSE OF A LACK OF A
 TRAINED WORKFORCE.

Source: National Association of Manufacturers

Washington state aerospace companies report an increased demand for trained workers.

HOW DID YOUR FIRM RESPOND TO THE DIFFICULTY FINDING QUALIFIED APPLICANTS?

RESPONSE	PERCENT	NUMBER OF FIRMS (EST.)
Did not fill the job opening	37%	4,382
Hired a less qualified applicant	44%	5,349
Outsourced work or purchased services from another firm	11%	1,175
Increased overtime hours for current workers	43%	4,784
Increased recruiting efforts	65%	7,886
Increased wages to attract more applicants	15%	1,674

Source: Workforce Training and Education Coordinating Board Employer Needs and Practices Survey (2012)



Between 2010 and 2015 the agriculture industry has, or will, experience 54,000 job openings annually.

WHERE THE SKILLS GAPS EXIST:

- Basic understanding of the agriculture industry through programs at the high school level such as 4H and Future Farmers of America (FFA)
- Agronomy
- Service Technicians
- Commercial Driver's License training (CDL)
- Mechanics

Agriculture

Located at Walla Walla Community College, the Agriculture Center of Excellence focuses on the promotion of clear education and career pathways for the agricultural industry. Pathways are created through a combination of promotion, partnerships, collaborative degrees and articulation agreements.

The Agriculture Center of Excellence is a central hub for the collection and dissemination of the most current agriculture and natural resource education and training information. The Center demonstrates collaboration and communication while fostering mutually beneficial connections between industry and educational partners. It is a resource for not only the agricultural industry, but also the community and technical college system, the K-12 system, and four-year colleges/universities. The Center provides a nucleus for innovative curricula, customized training, and promotion of clear education and career pathways for the agricultural industry.

www.agcenterofexcellence.com

BY 2015



47%

OF JOBS IN AGRICULTURE
WILL BE IN MANAGEMENT.

A BIOMASS POWER PLANT MANAGER'S
MEDIAN WAGE WAS
\$88,190 IN 2011.

Allied Health

Located at Yakima Valley Community College, the Allied Health Center of Excellence, through collaboration and cooperation, is dedicated to addressing Washington state's health care workforce needs of today and tomorrow through innovative programs for preparing qualified and competent health-care professionals and leaders for the future. The Center serves as a resource to all 34 community and technical colleges, as well as education, industry and government stakeholders.

www.yvcc.edu/coe

THROUGH 2020,
THE STATE OF WASHINGTON WILL HAVE AN
annual deficit
OF 130 MEDICAL AND CLINICAL
LAB TECHNOLOGISTS.

Source: Allied Health Center of Excellence

THE HEALTH CARE SECTOR
IS PROJECTED TO ADD OVER

4.2 million

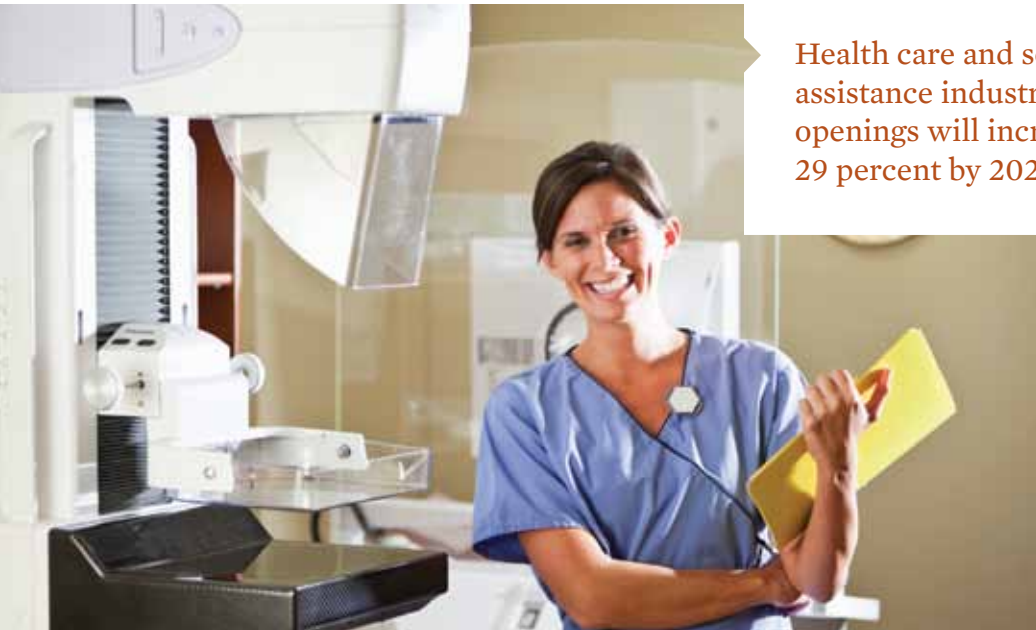
**JOBS BETWEEN
2010 AND 2020,**

WITH 63 PERCENT OF THOSE IN
AMBULATORY SETTINGS.

WHERE THE SKILLS GAPS EXIST:

- Medical Assistants
- Behavioral Health
- Care Coordinators
- Community Health Workers
- Medical Lab Technologists

Health care and social assistance industry job openings will increase 29 percent by 2020.



Clean Energy

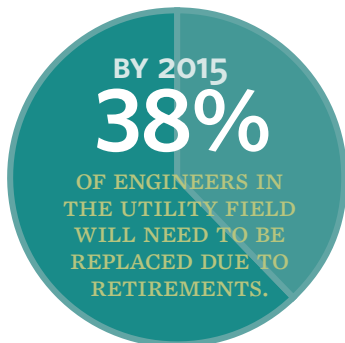
Located at Centralia College, the Pacific Northwest Center of Excellence for Clean Energy (formerly the Center of Excellence for Energy Technology) is a nationally recognized model providing strategic coordination for the energy industry's skilled workforce in the Pacific Northwest (Oregon, Washington, Idaho, Montana and Utah). The Center is led by a broad based consortium comprised of industry and labor leaders that guide the center to:

- Develop and mature industry and labor partnerships to better understand the ever changing workforce issues facing electric utilities and independent power producers.
- Translate energy industry research into best practices and education to ensure programs meet industry's workforce needs.
- Provide clear education and career pathways for students and job seekers for entry into high skills high wage energy jobs.
- Create a competitive workforce pipeline to meet increasing energy demands and support the economic future of the Pacific Northwest.

www.cleanenergyexcellence.org

THE MEDIAN ANNUAL WAGE
FOR THE UTILITY SECTOR WAS

\$79,375
IN 2011.



WHERE THE SKILLS GAPS EXIST:

- Management and use of information — The ability to evaluate, interpret, communicate and use information for decision making requires an advanced level of analytical skills which indicates a need for high level mathematics for many energy occupations.
- Use of technology — Selects, understands and applies emerging technology in ways that increase safety and efficiency while enhancing the customer experience.
- Big picture understanding of the industry — Knowledge of the relationship between energy occupations and how careers are related across energy industry subsectors will help individuals navigate their career in energy.

BY 2020, THE UTILITY INDUSTRY WILL NEED

32,400 LINE WORKERS
TO FILL
VACANCIES.

Source: WA State Employment Security Department



There will be a 22 percent increase in the number of extraction workers needed by 2017.

Construction

Located at Renton Technical College, the Construction Center of Excellence (CCE) is leading the nation with trainings such as Green Building Safety Training. The CCE strongly supports initiatives that promote training and best practices in all building phases, including pre-construction, construction, and post-construction/maintenance, as well as providing resources and education to individuals at all stages of their careers. To support the construction entrepreneur and small business owner the CCE has created a one of a kind web based small business incubator, leading the state in supporting growth and success in the industry. The primary charge of the CCE is to help the state's economic vitality grow by:

- Serving as a point-of-contact and resource hub for industry trends, best practices, innovative curriculum, and professional development opportunities.
- Maximizing resources by bringing together workforce education and industry partners in order to develop highly-skilled employees.

www.constructioncenterofexcellence.com

WHERE THE SKILLS GAPS EXIST:

- Technical skills
- Computer literacy
- Supervisory skills
- Sustainability
- Mathematics

THE 2012 MEDIAN
HOURLY WAGE
FOR CONSTRUCTION
SUPERVISORS AND
EXTRACTION WORKERS
WAS \$28.90.

Source: Construction Center of Excellence

2/3 OF CURRENT
CONSTRUCTION SUPERVISORS ARE
OVER 50 YEARS OLD.

AVERAGE AGE OF
A JOURNEYMAN IS
50 YEARS OLD.



WHERE THE SKILLS GAPS EXIST:

- Behavioral management
- On-the-job training
- Mathematics

TEACHING ASSISTANTS,
ALSO KNOWN AS PARAEDUCATORS,
HAVE A 1.1%
ANNUAL GROWTH RATE
WITH SPECIFIC SHORTAGE
AREAS IN SPECIAL EDUCATION,
MATHEMATICS AND SCIENCE.

Source: Center for Excellence for
Careers in Education/Employment
Security Department

Education

Located at Green River Community College, the Center of Excellence for Careers in Education is designed to respond to the workforce training needs and related interests of educational institutions in Washington state.

The Community and Technical Colleges of Washington are an integral part of the workforce pipeline for future educators offering pathways in paraeducation and Early Childhood Education, as well as transfer degrees that lead into university level teacher preparation programs. The Center operates as a statewide resource, with an advisory committee represented by school districts, colleges, labor and educational agencies. Through innovation and collaboration, the Center strives to:

- Support the preparation and development of future educators.
- Highlight and share best practices around the system.
- Develop in-service training and professional development opportunities for current education professionals.

www.careersined.org

ALL PROFESSIONS IN EARLY CHILDHOOD EDUCATION
SHOW ANNUAL GROWTH IN EMPLOYMENT WITH SPECIFIC
SHORTAGE AREAS IN BILINGUAL AND SPECIAL EDUCATION

CHILDCARE WORKERS

PRESCHOOL TEACHERS

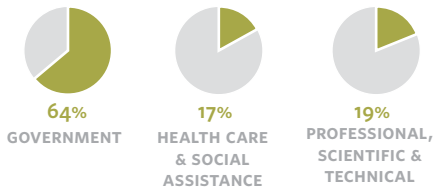
1.7% ■ **1.1%**

Homeland Security

Located at Pierce College, the Center of Excellence for Homeland Security facilitates and coordinates homeland security initiatives and provides access or delivers education and training to prepare a skilled workforce to maintain our national security and serves as a liaison with business and industry to the college's faculty and administration. The Center works directly with the State Community and Technical College Safety, Security and Emergency Management Professionals to apply state and national standards and practices across all the coalition colleges in the state to enhance the safety and security of the campus communities through advocacy, collaboration and partnerships which includes training and professional development. Through the Center's economic development initiatives, organizations and business receive technical assistance, expertise, information and research on current regional, state and national security initiatives.

www.pierce.ctc.edu/dist/coe/default.php

EMPLOYMENT IN THE EMERGENCY/DISASTER MANAGEMENT FIELD



Source: Center of Excellence for Homeland Security

WHERE THE SKILLS GAPS EXIST:

- Technical writing
- Customer service
- Accounting/grant and contract management



By 2018, employment in the emergency/disaster management field will grow by 22 percent.

WHERE THE SKILLS GAPS EXIST:

- Cyber security analyst
- IT and Cloud architects
- Policy and regulatory understanding
- Software and electrical engineering

Information and Computing Technology

Located at Bellevue College, the Center of Excellence for Information and Computing Technology is a statewide resource for:

- Community and technical colleges
- K-20 educational system
- Information technology (ICT) industry

The Center, as an information resource and solutions-provider regarding model educational programs, supplies:

- Best practices for ICT education and training.
- Up-to-date research, including IT trends that impact hiring and educational needs and business growth across industry sectors in Washington state.
- Information dissemination.
- K-20 faculty professional development conferences and student events.

www.coeforict.org

TEN OCCUPATIONS LINKED TO THE GLOBAL TECHNOLOGY TRACK

OCCUPATIONS	GLOBAL TECHNOLOGY TRACK				
	SOCIAL	ANALYTICS	MOBILE	CLOUD	BUSINESS
Computer Systems Analysts	●	●			
Software Developers, Systems Software	●		●		
Software Developers, Applications	●		●	●	
Computer Programming	●		●	●	
Web Developers	●	●	●		
Information Security Analysts			●	●	
Computer Network Architects				●	
Network and Computer Systems Administrators				●	●
Computer and Information Systems Managers		●	●	●	
Database Administrators			●	●	●

Source: Center of Excellence for Information and Computing Technology

By 2020, 236,500 Washingtonians will be employed in the field, a 61% increase in demand.



IN WASHINGTON STATE,
145,000 PEOPLE
ARE EMPLOYED IN LOGISTICS,
DISTRIBUTION, AND
INTERNATIONAL TRADE
ADMINISTRATION/
OPERATIONS ROLES.

Global Trade & Supply Chain Management

Located at Highline Community College, the Center of Excellence for Global Trade & Supply Chain Management provides educational efficiencies that are able to respond quickly and effectively to industry's changing needs. In collaboration with community and technical colleges, industry and industry associations, labor, K-12 and universities, the Center works to:

- Maintain an institutional reputation for innovation and responsive education and training delivery to the Global Trade & Supply Chain Management industry.
- Act as a broker of information and resources related to the industry for industry representatives, community-based organizations, economic development organizations, community and technical colleges, secondary education institutions, and four-year colleges and universities.
- Translate industry research into best practices.
- Explore and develop pathways through better educational system coordination, to assist in building seamless educational and work-related systems.
- Design training that is industry relevant, timely and that can be delivered using various methods in order to build a competitive workforce for this driving industry in Washington state.

www.ittlwa.com

WHERE THE SKILLS GAPS EXIST:

- Truck drivers
- Dock workers
- Management
- Technical writing
- Logistics

IN THE 2011-2012
SCHOOL YEAR,

8,818
students

ENROLLED IN OR COMPLETED
COMMUNITY COLLEGE PROGRAMS
RELATED TO LOGISTICS, DISTRIBUTION,
AND INTERNATIONAL TRADE
ADMINISTRATION/OPERATIONS IN
WASHINGTON STATE.

Source: Center of Excellence for Global
Trade & Supply Chain Management

WHERE THE SKILLS GAPS EXIST:

- Electronics technicians
- Marine electrical
- Electrical installers
- Composite technicians
- Steel welders
- Riggers
- Aluminum welders and painters

WASHINGTON'S ENTIRE
RECREATIONAL MARINE SECTOR

CREATES
\$3.9 billion
OUTPUT PER YEAR, AND
EMPLOYS
over 20,000 people.

PUGET SOUND NAVAL SHIPYARD ALONE,
EMPLOYS 10,000+ CIVILIANS.
AND IT'S ONE OF THE FOUR
REMAINING PUBLIC SHIPYARDS
IN THE UNITED STATES.

Marine Manufacturing & Technology

Located at Skagit Valley College, the Northwest Center of Excellence for Marine Manufacturing & Technology serve as statewide liaisons to business, industry, labor and education for the purpose of creating a highly skilled and readily available workforce critical to the success of the industries driving the state's economy and supporting Washington families. The Center works to successfully address the following expectations:

- Ensure the efficient use of state resources for workforce development activities and initiatives by fostering a culture of cooperation within the Community and Technical College system.
- Provide leadership by representing the Washington Community and Technical College system, local businesses and industry in state, national, and international industry specific forums, activities, and economic development initiatives.
- Serve as a resource for the creation and sharing of model curricula, educational pathways, degree/certificate programs, industry specific standards, and best practices.
- Demonstrate excellence in communication and collaboration while fostering synergistic interconnectedness of Washington's economic, workforce development, and educational systems.
- Ensure the long-term sustainability of the Center of Excellence.

www.marinecenterofexcellence.com

Source: Northwest Center of Excellence for Marine Manufacturing & Technology



Middle and high school students, as well as the educators who advise them, are often unaware of available career and training programs.



Outcomes

With a broad spectrum of industries represented by the Centers of Excellence several common themes emerged:

- All workforce programs should include a focus on basic employability skills.
- Middle and high school students, as well as the educators who advise them, are often unaware of available career and training programs.
- College programs need to focus on developing leadership and management skills as identified by key industries.
- Continuing education, stackable credentials and flexible training models will help provide business and industry with vital incumbent worker training. Employees must embrace lifelong learning and participate in continued professional development if they are to remain competitive in today's employment market.
- Technical skills are critical across all industries.

Next Steps

- The Association of Washington Business, the State Board for Community and Technical Colleges, and all 34 colleges and 10 Centers of Excellence will continue to build industry relationships and connections with the goal of further integrating business input in a meaningful way in program and curriculum development.
- AWB, the SBCTC and the college presidents will jointly advocate for closing skill gaps, especially in STEM careers.
- AWB, SBCTC and the college presidents will work with the K-12 system to create broader understanding of careers and training programs available in Washington state.
- AWB, SBCTC and the college presidents will research possible models for soft skills training.

**ABOUT THE ASSOCIATION
OF WASHINGTON BUSINESS (AWB)**

Formed in 1904, the Association of Washington Business is Washington's oldest and largest statewide business association, and includes more than 8,000 members representing 700,000 employees. AWB serves as both the state's chamber of commerce and the manufacturing and technology association, and is one of two chambers in the country accredited with distinction by the U.S. Chamber of Commerce.

ABOUT THE AWB INSTITUTE

Founded in 2001 as an affiliate of the Association of Washington Business, the AWB Institute focuses on an array of human resource and employment issues, including workforce development and education; workplace safety; environmental compliance; and competitiveness. The Institute advocates for public policy positions at the state and federal levels and develops best practices for Washington employers and members of AWB. The Institute also partners with the public sector employment and training system and public schools on partnerships to expose the current workforce, students and educators to the world of work.

**ABOUT THE STATE BOARD FOR COMMUNITY
AND TECHNICAL COLLEGES (SBCTC)**

The State Board for Community and Technical Colleges (SBCTC) is governed by a nine-member Governor-appointed board responsible for administering the Community and Technical College Act and providing leadership and coordination for Washington's system of 34 public community and technical colleges.

To learn more about the AWB Institute
or this report, contact:

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