

CENTERS OF EXCELLENCE

**Collaborating to pave
the pathways for
Washington's future!**



***Washington State Centers of Excellence Impact Report:
Ensuring a Better Workforce for Tomorrow***

Credits:

Center of Excellence for Aerospace and Advanced Materials Manufacturing: Editing

Center of Excellence for Information and Computing Technology: Funding

Bellevue College Printing Services: Graphics and Printing

CENTERS OF EXCELLENCE

Executive Summary

The Centers of Excellence are flagship institutions that build and sustain Washington's competitive advantage through statewide leadership. Each Center focuses on a targeted industry that drives the state's economy and is built upon a reputation for fast, flexible, quality education and training programs. A targeted industry is identified as one that is strategic to the economic growth of a region or state.

Centers are guided by industry representatives to lead collaborative and coordinated statewide education and training efforts to build a competitive workforce in a global economy.

Centers will:

- ◆ Maintain an institutional reputation for innovation, responsive education, and training delivery to their targeted industry
- ◆ Act as a broker of information and resources related to their targeted industry for industry representatives, community-based organizations, economic development organizations, community and technical colleges, secondary education institutions and four-year institutions
- ◆ Translate industry research into best practices
- ◆ Provide system coordination, coaching, and mentoring to assist in building seamless educational and work-related systems
- ◆ Build a competitive workforce for driver industries in Washington State

Vision

Washington shall become a national model in developing partnerships among business, industry and education for the purpose of enhancing economic and workforce development initiatives to meet the current and future needs of the industries critical to the state's economic vitality.

Mission

Washington's Centers of Excellence shall 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 critical to the success of the industries driving the state's economy and supporting Washington families.

Core 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 (CTC) system
- ◆ Provide leadership by representing the Washington CTC system, local business 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 skill standards and best practices
- ◆ Demonstrate excellence in communication and collaboration while fostering synergistic interconnectedness of Washington's economic, workforce development and education systems
- ◆ Ensure the long-term sustainability of the Center of Excellence programs and services

The Centers of Excellence have created an impact report to demonstrate the state's return on investment, highlight positive achievements, describe individual center impact on the community and technical college (CTC) system as a whole, demonstrate connections made between industry and educators, and report cost savings by showcasing Center events, products, projects, research and services.

The annual core funding for the Centers is \$1.2 million, with performance funding at a minimum of \$0 to a maximum of \$500,000. The Center initiatives have recovered the initial annual investment of \$1.2 million. The aggregate return on the combined value of each Center's projects and initiatives far exceed the annual core and performance funding.



Aerospace and Advanced Materials Manufacturing

Education is the key to a strong and vital workforce in any industry. For the Center of Excellence, we have created industry relationships between education and corporations to better align training with available jobs. We offer students, business leaders and instructors in the fields of aerospace and advanced materials manufacturing a focal point for customized training and services. The Center of Excellence (CoE) offers the state's technical and community colleges a single and reliable source for industry information and education, and strives to place a highly-skilled workforce within the aerospace and advanced manufacturing industry.



Agriculture

The Agriculture Center of Excellence provides fast and flexible service responding to the interests of educational institutions and the workforce training needs of the agricultural industry across Washington. Designed to encourage economic development through collaborative processes and partnerships; the Center links education to industry. The Center continues to evolve in a diverse and technologically advancing industry that includes rural, urban, and related agricultural support services. To this end, the Center promotes the establishment of clear career pathways in agriculture to advance the state's \$35 billion food and agricultural industry.



Allied Health

The Allied Health Center of Excellence, through collaboration and cooperation, is dedicated to addressing Washington State's healthcare workforce needs of today and tomorrow through innovative programs for preparing qualified health care professionals and leaders for the future. With regional and statewide leadership activities, the Center serves as a resource to all 34 community and technical colleges, K-12 schools, and business/industry partners, plus identified government entities to ensure a continuous pipeline of new healthcare professionals by:

- ◆ Enhancing pathways into the healthcare professions and promoting diversity in recruitment
 - ◆ Promoting collaboration and maximizing resources
 - ◆ Supporting and developing innovative allied health programs
 - ◆ Collecting, sharing and disseminating allied health information and best practices
 - ◆ Addressing skill-related training needs and upgrading skills within the existing workforce
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Washington State



Center of Excellence
for Careers in Education

Careers in Education

The Center is designed to respond to the workforce training needs and related interests of educational institutions and industries in Washington State. This includes the expansion/strengthening of existing programs and creation of new program options to meet the education and training needs of an industry that is ever changing. We pride ourselves on being Washington State's best resource for careers in education.

The Center:

- ◆ Innovative programs for future educators and sharing of Best Practices
 - ◆ Support, mentoring, referrals and advising to community colleges and their K-20 partners for the creation and expansion of career-ladder programs in education
 - ◆ In-service training and professional development for current education professionals
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Clean Energy

The Pacific Northwest Center of Excellence for Clean Energy (formerly, 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. The Center is led by a broad based partnership 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" training 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.



Construction

The Construction Center of Excellence is a statewide leader in construction workforce education and training. The center serves as a point-of-contact resource hub for industry trends, best practices, innovative curriculum, as well as professional development opportunities. CCE maximizes resources by bringing together workforce education and industry partners in order to develop highly-skilled, competitive and global workforce. CCE does this by showcasing educational offerings at the colleges, promoting construction career pathways, advocating construction education and career guidance initiatives, developing products, services and courses needed in the industry and hosting events for industry, labor and education.



Homeland Security- Emergency Management

The Washington Center of Excellence for Homeland Security-Emergency Management is housed at Pierce College. The Center's mission is to infuse Homeland Security Emergency Management (HSEM) initiatives throughout the Community and Technical College System (CTC) system and support their community partners to better prepare, respond and recovery from emergencies and disasters. The Center is dedicated to delivering dynamic HSEM training, exercises and workshops throughout the CTC system and our local community and industry partners. The Center promotes and helps establish career pathways in HSEM and other related fields and serves as a resource sharing model curricula, degree/certificate programs, industry specific skill standards and best practices. The Center in collaboration with our statewide partners works to build community and economic resilience which helps protect the public and supports our state's economic vitality. The Center is supported and advised by a diverse group of industry, government and community leaders.

Services

For students and industry workforce...

- ◆ Disseminates industry news and training programs via website and eNews
- ◆ Provides information on degree/certificate programs, continuing education opportunities and career pathways for incumbent workforce and students
- ◆ Access to programs that upgrade knowledge, skills and abilities

For Educators...

- ◆ Supports curriculum development, enhancement and expansion
- ◆ Facilitates articulation arrangements between secondary and postsecondary academic institutions
- ◆ Professional development workshops and conferences
- ◆ Delivers HSEM training, workshops and exercises to enhance student, staff and faculty safety and security
- ◆ Provides all-hazard preparedness information and resources to build personal and community resilience

For Community, Business and Industry Partners...

- ◆ Collaborates with educational institutions to address workforce training needs of business and industry to ensure a skilled workforce
- ◆ Access to distance learning options for current employees in selected HSEM topics
- ◆ Organizes and promotes HSEM training and education opportunities through local and regional workshops, conferences, and seminars
- ◆ Access to resources and assistance with training and education to help prepare communities to deal with disasters.
- ◆ Provides a one-stop-shop website that provides linkage to local, state and national resources



Information and Computing Technology

The Center is a statewide resource for the CTC system; K-12 educators, and builds crucial relationships with information and computing technology industry professions in order to leverage:

- ◆ Best practices for IT education, professional development opportunities, events to create opportunities for faculty and students to collaborate with industry
- ◆ Up-to-date research, including ICT trends that impact hiring and educational needs and business growth across industry sectors in Washington State
- ◆ Products, services, including consulting, resources, community forums, and research to ensure faculty are receiving pertinent access to new and emerging technologies as well as changes in workforce demand.
- ◆ K-20 faculty professional development opportunities and student-centric events



International Trade, Transportation & Logistics
at Highline Community College

International Trade, Transportation & Logistics

Strategically positioned between two major ports, the Center of Excellence for ITTL facilitates connections among education, business, industry, labor, community partners and workforce intermediaries, advocating for Washington State both nationally and internationally in international trade, transportation and logistics. This collaboration keeps curriculum current with latest industry trends, while it provides re-training and job laddering opportunities to meet current high demand jobs with the skilled workers necessary. These skilled jobs can lead the economic recovery. The Center develops career pathways by collaborating with schools, colleges, and universities to identify and bridge educational gaps and depict positive visibility of the professions and wage levels creating a pipeline for the industries' workers of the future and building a competitive workforce. Through a statewide outreach and marketing campaign, students, workers, and the industry better understand career pathways and opportunities in the supply chain management sector.



Marine Manufacturing and Technology

The Center is dedicated to enhancing the global competitiveness of the marine manufacturing, repair-refit and technology industries of Washington State by actively supporting a statewide alliance of private industry, education, economic and workforce development. Serving as a hub for innovation and education, the Center of Excellence helps to highlight and share best practices related to industry trends and emerging technologies fostering economic vitality through leadership and collaboration with state, national and international partners. Additionally, the Center is dedicated to building a world-renowned marine industry through training and curriculum that can be shared throughout the community and technical college system, the development of a highly skilled workforce, and continually improving processes and practices through outreach and collaboration.

How Centers Ensure a Better Workforce for Tomorrow

A core initiative of the Washington's Centers of Excellence is to act as a statewide liaison to business, industry, labor, and the state's educational systems 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.

A top priority of Centers of Excellence is to serve the community and technical college (CTC) system to ensure activities generate products, services, resources, or research that supports the successful alignment of programs to correctly anticipate and meet industry needs and workforce demands. Centers of Excellence have demonstrated a firm commitment to serving the state's community and technical college system.

Teaching Equity



Teaching Equity is a full-day education conference for future teachers (pre-service teachers looking to increase their understanding of how to work effectively in today's diverse class-

rooms) and for students of color interested in exploring careers in education. Since 2009, it has become an annual event growing in both size and collaboration each year. It is coordinated by Highline Community College, the Center of Excellence for Education and Central Washington University. Additional support has come from the WEA, Public Educator Standards Board, OSPI, Kent School District and the Foundation for Early Learning. In 2011, approximately 150 students were able to network and attend educational workshops about cultural competency, job placement, career planning for educators and more. Both high school and college students experience a high quality career development event for a very low cost.

Clean Energy



"The Northwest Energy Efficiency Taskforce (NEET) is an executive level group representing utilities, customers, state government, environmental groups and energy efficiency entities in the Pacific Northwest. NEET's mission is to maximize the region's energy efficiency achievement in pursuit of the most cost effective resource for rate payers. NEET selected the **Pacific Northwest Center of**

Excellence for Clean Energy (PNCECE) to spearhead strategic coordination of energy efficiency workforce education and endorsed the Department of Energy's \$5 million grant leveraged to \$12 million Smart Grid Workforce Training grant awarded to PNCECE for development of the 5 state (Washington, Oregon, Idaho, Montana, and Utah) region's clean energy workforce."

Cal Shirley, V.P., Energy Efficiency, Puget Sound Energy

Ensure Better Tomorrow: Data Repository



The Agriculture Center of Excellence in an effort to better focus Center activities and resource allocation within the college system has developed a data repository. Several quantitative tracking tools were implemented to monitor agriculture and natural resource program enrollments, Tech Prep

articulation agreements, and four-year college and university articulation agreements throughout the state. Data collection and analysis has established a baseline which will be beneficial in tracking system wide trends, identifying colleges that may need additional assistance, and enabling the Center to pursue federal funds that require quantitative performance measures.

Information and Computing Technology Emerging Workforce Trends Report



The Center of Excellence for Information and Computing Technology, after a process of extensive research, wrote and published information and computing technology trends report, *Emerging Workforce Trends*

in Information and Computing Technology 2011 to 2018...: STEM Career Pathways for the Washington State Community and Technical College System, in early March 2011.

Four primary economic and educational issues are detailed and analyzed. Proposed solutions are explored in the 74-page report:

- ◆ The current economy's effect on education, employment, and innovation
- ◆ The occupational outlook for career pathways aligned to STEM (science, technology, engineering, and math) disciplines

- ◆ The importance of preparing students for careers in STEM
- ◆ Considering 2025 global predictions and how new or hybrid occupational pathways will emerge in order to create energy and environmental solutions through the use of information and computing technologies

A complimentary copy has been sent to each of the 34 community and technical college workforce administrators. The Center is currently selling copies with a special rate for Washington State educators.

“This is very interesting, and comprehensive report. Well done!!”

Rich James, Director of Staffing, F5 Networks

Workplace Readiness



The Center for International Trade, Transportation, and Logistics, in response to industry demand, enlisted the expertise of a specialist in instructional design and construction of online pedagogy using theories of adult learning. The goal was to take a nationally recognized assessment tool (<http://learning-resources.com/>) and develop a series of online modules that can be used by industry to help train employees, and can also serve as a tool for community colleges looking to incorporate basic “soft skill” awareness into their professional and technical programs.

Workforce Readiness online learning modules were created for customer care and personal qualities. These soft skill training modules are available at no cost to all community and technical colleges through the Angel online learning platform. A Course Adoption Form (CAF) has been created for the Workforce Readiness Courses and will be shared with IBEST programs throughout the state to determine their interest in having the curriculum/assessment as part of their program. Each unit

(seven in customer care, five in personal qualities) contains a video, text, and a short self-assessment at the end. There is a certificate of completion available for each module once the student has completed. This assessment has a nominal cost (\$25) and can be used as verification of soft skill training.

The Centers of Excellence are committed to demonstrating excellence in communication and collaboration while fostering synergistic interconnectedness of Washington’s economic, workforce development and education systems. These collaborations create effective improvements or changes for the CTC system.

Alignment of Industry & Educational Interests



In December 2010, the Center of Excellence for Aerospace & Advanced Materials Manufacturing wrote and published a white paper identifying five critical program clusters essential to support and sustain the need to provide skilled technicians to Washington State’s aerospace industry. These included composite manufacturing, electronics, machine tool technology, industrial manufacturing technology and aircraft mechanic. After a review of key trends and issues related to these clusters, it was determined that a series of program cluster workshops would take place in early 2011 under direction of the Center of Excellence for Aerospace and Advanced Materials Manufacturing. The workshops began in January and concluded in May, 2011. In sum, the workshops brought together 117 program subject matter experts (SMEs), 45 representing industry. Preparatory to each workshop, visits were made to several colleges connected to the subject cluster to conduct onsite interviews with staff and/or faculty and identify program issues. The overarching goals established for the workshops were to:

Facilitate a direct dialogue between academic and industry subject matter experts

Identify and validate cluster program training/educational outcomes

Link program outcomes to stated industry requirements.

Identify program entry and exit points and their link to industry employment opportunities

Capture program content, completion and placement rates.

Refine cluster supply/demand data

Identify common course content and potential numbering options/opportunities

Publish workshop results in a comprehensive report

- ◆ Facilitate a direct dialogue between academic and industry subject matter experts
- ◆ Identify and validate cluster program training/educational outcomes
- ◆ Link program outcomes to stated industry requirements.
- ◆ Identify program entry and exit points and their link to industry employment opportunities
- ◆ Capture program content, completion and placement rates.
- ◆ Refine cluster supply/demand data
- ◆ Identify common course content and potential numbering options/opportunities
- ◆ Publish workshop results in a comprehensive report

“The curriculum and alignment meetings between The Boeing Co. and our community and technical colleges have been highly successful. Not only do they provide a forum where participants can form clear alignment and understanding of industry needs and how those needs can be met by our educational partners, but they also provide a place where meaningful, long term



relationships can be formed. These relationships are the key to our long term mutual benefit as we grow our future aerospace/ manufacturing employees for generations to come. Every industry, in every state, should embrace such a model.”

~ Michael Greenwood, The Boeing Company
Learning Training and Development- Senior Manager,
Manufacturing & Quality Learning Solutions BCA/SSG
Aerospace Academic Alignment Team Leader

Career Expo



The Center of Excellence for Allied Health partnered with Yakima Valley Community College’s (YVCC) Tech Prep, Yakima Chamber of Commerce and the Yakima Valley Tech Skills Center to offer a Career Expo for the region’s junior and senior high school students. Using the model developed by the Center for their annual high school event these partners

were able to offer area youth a choice of career pathways. This hands-on event was developed to expose high school students to careers and to fulfill their graduation requirement of having a job shadow experience. The schools, with the help of the Chamber of Commerce, have been able in the past to find placements for students with new privacy and insurance laws and regulations, but it has been increasingly difficult to find job shadow opportunities.

The health care, engineering, information technology and education sessions were held on the YVCC campus. Over 300 students attended the health care strand. Each student attended five sessions that highlighted different health care fields. They also participated in a career fair with information booths from various colleges and major employers as well as the Center of Excellence. Post event comments highlighted the positive impact that the event had on students educational plans for the future.

By carefully structuring the event we were able to fulfill several goals.

- ◆ Expose students to Community College Workforce programs in their field of interest
- ◆ Have them participate in hands-on activities in their chosen career pathway
- ◆ Get students into community college classrooms with college instructors
- ◆ Explain career pathways in their fields
- ◆ Strengthen ties with high school CTE instructors and build pathway awareness by providing post-event professional development

Think, Prepare and Act -



The Center of Excellence for Homeland Security Emergency Management role is to support emergency preparedness leadership in our college system and our communities statewide and be a

resource for their preparedness. New technology training is rapidly expanding and the industry has seen a 28% growth rate. The Center partnered with the Workforce Training and Education Coordinating Board to complete 10 skills panels and a Trends Assessment and Skill Panel Report which has been updated every other year. The Center partnered with the Washington Association of Sheriffs and Police Chiefs and obtained funding for the Critical Incident Planning and Mapping Systems for all CTC system colleges.

The Center is one of five colleges nationally that serves as a lead for the Community College Citizen Preparedness Program (3CP2) in partnership with the National Partnership for Environmental Technology Education (PETE). The Center has conducted two train-the-trainer preparedness workshops for eight CTC system colleges and 23 participants who will provide an awareness level education program to their students, staff and faculty.

The Center’s annual Summit focuses on building resilient communities supported the development in collaborations with federal, state and local emergency management agencies and business and industry. Also, offered are training programs for both industry and community members on business continuity planning. The business continuity workshop trained over 60 participants. The pilot training program for volunteer business coaches/mentors trained over 35 volunteers to provide support to business and organizations in their communities to complete business continuity plans. This program continues to expand to small and mid-sized businesses and organizations to promote resiliency. This, in turns, improves their ability to survive financial hardships that are brought on by expected events such as natural disasters.

Green Curriculum Template



The Construction Center of Excellence collaborated with Peninsula College to develop “green” curriculum for second year construction program. The results are shared system-wide as a template for other schools who might want to

do something similar with their construction programs. The green curriculum template is available open source to community and technical college system on line via the Construction Center of Excellence website curriculum library and can be delivered electronically to any who request it.

STEM Summit



Almost 90 faculties from the four industry sectors of aerospace, allied health, construction, and information and computing technology attended the first annual two-day STEM Summit hosted at Bellevue College on March 10 & 11, 2011. The event was sponsored by the

Centers of Excellence in aerospace, allied health, construction, and information and computing technology. This free event involved a keynote presentation from Dr. Arthur Benjamin, internationally renowned mathematician from Harvey Mudd College, as well as educators and industry professionals, through a series of presentations and panel discussions, shared their strategies for incorporating STEM in the classroom and highlighted emerging technology and workforce trends. Additionally, round table sessions were held to develop curriculum modules centered on incorporating STEM in the classroom.

Marine Industries Skills Panel - Seattle WDC



The Maritime Skills Panel is a collaboration of industry, education, labor, economic and workforce development. The Centers of Excellence for Marine Manufac-

turing & Technology, and International Trade Transportation & Logistics served on the panel. Both were full participants as well as resources for the development of priorities, pathways and the website. The key objectives of the project were: Identify current maritime workforce system challenges and solutions; map maritime and maritime transportation career pathways; identify basic maritime cluster competencies that can be used in K12 to encourage youth to pursue maritime careers and enhance collaboration and cooperation among the regional maritime training programs and institutions – public and private.

Key outcomes of the work:

- ◆ The Marine Skills Panel wrote and published a comprehensive report, Maritime Workforce Advisory Council Operating Plan June 2010, regarding training needs and providers for the greater Seattle region
- ◆ The report paved the way for the award of an additional \$75,000 in funding to create a website portal for educational opportunities: <http://www.mapyourcareer.org/maritime/maritime-careers.html>
- ◆ The site will reach beyond the Seattle region and will provide those seeking educational programs, industry and the system with relevant and current information regarding training programs and the industry

Vision Statement from the Chair

In 2009, Washington became the first and only state in the nation to codify Centers of Excellence into state statute. In an effort to meet legislative mandates and solidify our statewide leadership role, the Center Directors formed as a board to cohesively support Centers in becoming increasingly strategic with outreach to industry, labor, economic and workforce development and to positively impact and serve the Community and Technical College system and K-12.

Washington is recognized nationally for creating the Center model as a state sector strategy to serve as an economic development driver for industries that help the economy grow. Given the economics of our state and nation, this is a critical time for the Centers and the system to develop a competitive workforce pipeline that will ensure the economic future of Washington State.

An important strategic opportunity for Centers rests in linking to the state's efforts to expand the "green economy," which assumes that the state's economic and environmental goals are interdependent. Even more important, lasting economic and environmental benefits can only be achieved if these efforts emphasize sustainability by focusing on fulfilling present and future needs while ensuring that assets such as renewable, natural and human resources are used wisely and nurtured over time.

As we move forward to 2012, it is the goal of the Centers to integrate sustainability into every facet of our system's workforce training and education programs. This can only be accomplished by identifying and integrating sustainability practices, efficiency measures, and conservation impacts into workforce development initiatives for the industries represented by the Centers. It is the collective goal of the Washington State Centers of Excellence to lead the nation in developing a sustainable workforce that will serve our state and nation in the new 21st century economy.

Barbara Hins-Turner, Chair
Centers of Excellence Board of Directors



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