



# CENTER OF EXCELLENCE

## FOR AEROSPACE AND ADVANCED MANUFACTURING

**2016** Annual Report

**Washington state's Centers of Excellence** link business, industry, labor and the state's educational systems to create a highly skilled and readily available workforce critical to the success of the state's economy. Each center is funded through the State Board for Community and Technical Colleges (SBCTC) and is housed at a community or technical college.

Centers of Excellence serve as statewide resources representing the needs and interests of a specific industry sector. Through an ongoing investment, Centers are charged with narrowing the gap between employer workforce needs and the colleges' supply of work-ready graduates. They are a critical component of the state's strategy of sustaining an innovative and vibrant economy.

### **Each Center of Excellence Core Expectations include:**

- Economic development
- Industry sector strategy
- Education, innovation and efficiency
- Workforce supply and demand

## Our Focus

**Convene** industry & academic leaders together to develop Washington state's workforce & educational programs

**Problem Solve** training and development issues in aerospace & advanced manufacturing to increase opportunities for community & technical college program graduates while meeting the needs of manufacturing partners

**Disseminate** key information to academic & industry partners to ensure clear communication



# 2015 HIGHLIGHTS & HEADLINES

## BOEING EVERETT'S 777X WING PLANT TAKES SHAPE

Breaking ground in October 2014, the 777X wing is located north of Boeing Everett's assembly facility. This \$1 billion, 1.3 million square foot facility is scheduled to be ready for occupancy in 2016 and should be fully operational by 2017.



## AEROSPACE ENGINEERING EDUCATION

The U.S. Bureau of Labor Statistics is projecting a decline in the inventory of aerospace engineers by 2024. There are currently 72,500, and there will be a reduction of 1.6% by 2024. The good news - as a state, interest in producing qualified engineering candidates remains high. The capacity for training is expanding at Washington's community and technical colleges, especially in engineering technician programs, which can help augment university programs.

## BOEING'S COMMITMENT TO HIRE SECONDARY/POST-SECONDARY GRADS

Perhaps one of the most significant headlines this past year was made in September when Ray Conner, CEO Boeing Commercial Airplanes announced Boeing's commitment to dramatically increase its percentage of new hires from pools of qualified applicants from both the secondary and post-secondary (community and technical college) systems. In the past Boeing has had a reputation of drawing many, if not most, of its new hires from one of its several hundred suppliers. This new commitment is a bright spot that raises the bar for academic institutions to ensure they train and provide an adequate pool of qualified applicants to meet industry needs.



## GRANT FUNDING

The Air Washington Program that resulted in a multi-year, 20 million grant from the U.S. Department of Labor, allowed for focused investments in programs, equipment and the basic infrastructure of aerospace/manufacturing training. The goal of the grant was to address a short-term need for the development of skilled labor for the industry and to address a statewide need for creating a pipeline of the next level of aerospace workers to support our burgeoning industry. During the grant period, the partner colleges across the state trained 3,806 students, achieving 145% of their established goal, and greatly expanding the pool of qualified applicants for career-wage level jobs.

## COMMON COURSE INITIATIVE

As part of the Air Washington Program, additional emphasis was placed on developing common course curriculum among partner colleges in high demand program areas. Colleges offering machine tool technology programs were among the first to embrace the "common course process" in 2014. This past year a select group of colleges engaged in the development and delivery of programs in plastics/composite technology. The results of this work has been documented and forwarded to the State Board for Community and Technical Colleges for review and adoption.



# COE 2016 PRIORITIES

## MECHATRONICS

This exciting and emerging field that integrates skills and abilities from multiple disciplines including electronics technology, mechanical engineering, computer science, control processing, and information technology. This past year, the COE partnered with the Boeing Company and Darigold (one of the largest privately held companies in the state) to develop and deliver common course curriculum based on the AMTEC (Automotive Manufacturing Technical Education) model. The COE recently received a 3.9 million federal TechHire grant for development in this area.

## STUDENT RETENTION AND COMPLETION

As enrollment declines, the need to retain students and facilitate their completion of programs of study becomes an increasingly important priority. As an agency expected to integrate the interests and needs of stakeholders on all sides of the equation (e.g., colleges, industry partners and students), the COE is working diligently to ensure that programs are shaped and targeted toward meeting specific industry needs as well as facilitating the engagement of students in relevant curriculum that is bench-marked to industry standards.

## GRANT FUNDING

Grant funding remains an essential component in the success of many COE programs. Three following major grant initiatives merit attention.

### NATIONAL INSTITUTE FOR STANDARDS & TECHNOLOGY (NIST)

The COE recently completed a one-year project funded through the National Institute for Standards & Technology (NIST). Additionally we have submitted another grant request during their recent grant cycle, with a focus on equipment for our partner colleges and the development of common lab projects. Our industry partners included Boeing, Fluke, Lockheed Martin, Puget Sound Naval Shipyard, CimTech and Greysam Industries.

### WASHINGTON INTEGRATED SECTOR EMPLOYMENT

This nearly \$10 million project, funded through a Round #4 DOL TAACCCT grant, brings together the clean energy, advanced manufacturing and construction sectors to prepare participants for employment in entry level, pre-apprenticeship and apprenticeship occupations. Based on national trends within the manufacturing industry, the COE for Aerospace and Advanced Manufacturing is focused on students gaining these state and nationally recognized certifications: National Institute for Metalworking Skills (NIMS); Washington Association of Building Officials (WABO); and, National Career Readiness Certificate (NCRC).

### DOL AIA (APPRENTICESHIP IN AMERICA) GRANT

The Partnership for Advanced Technology Apprenticeships in Manufacturing and Marine Engineering (PATAM2), will serve at least 1,000 apprentices in Washington State in the advanced manufacturing and maritime sectors. The COE will be convening subject matter experts from around the state to identify core Knowledge, Skills & Abilities (KSAs) required of workers upon entry into apprenticeships. Through this identification of the KSAs, a team of faculty from the partner colleges will develop a Common Pre-Apprenticeship Core Curriculum, thereby working to equalize the playing field for all who seek apprenticeships.

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