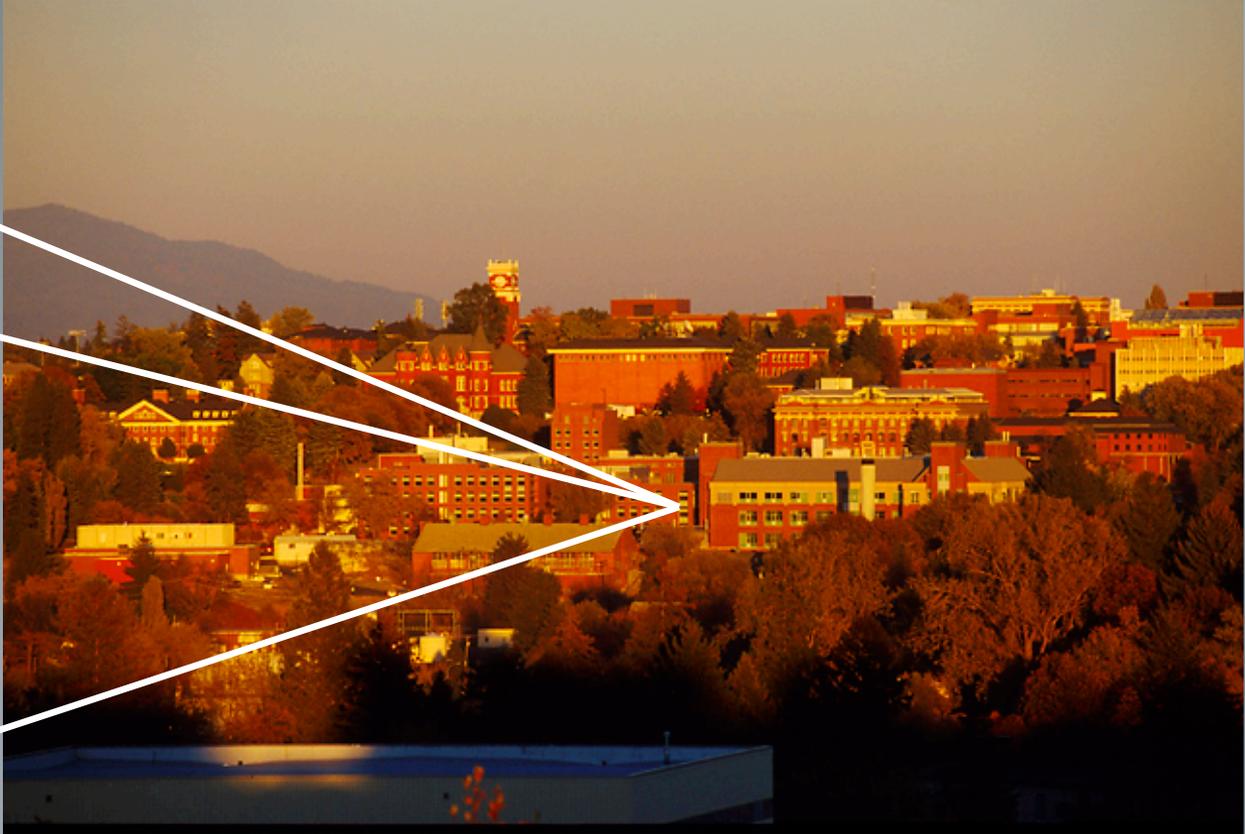


# WSU Engineering



**College of Engineering and  
Architecture**

WASHINGTON STATE  
UNIVERSITY



*World Class. Face to Face.*

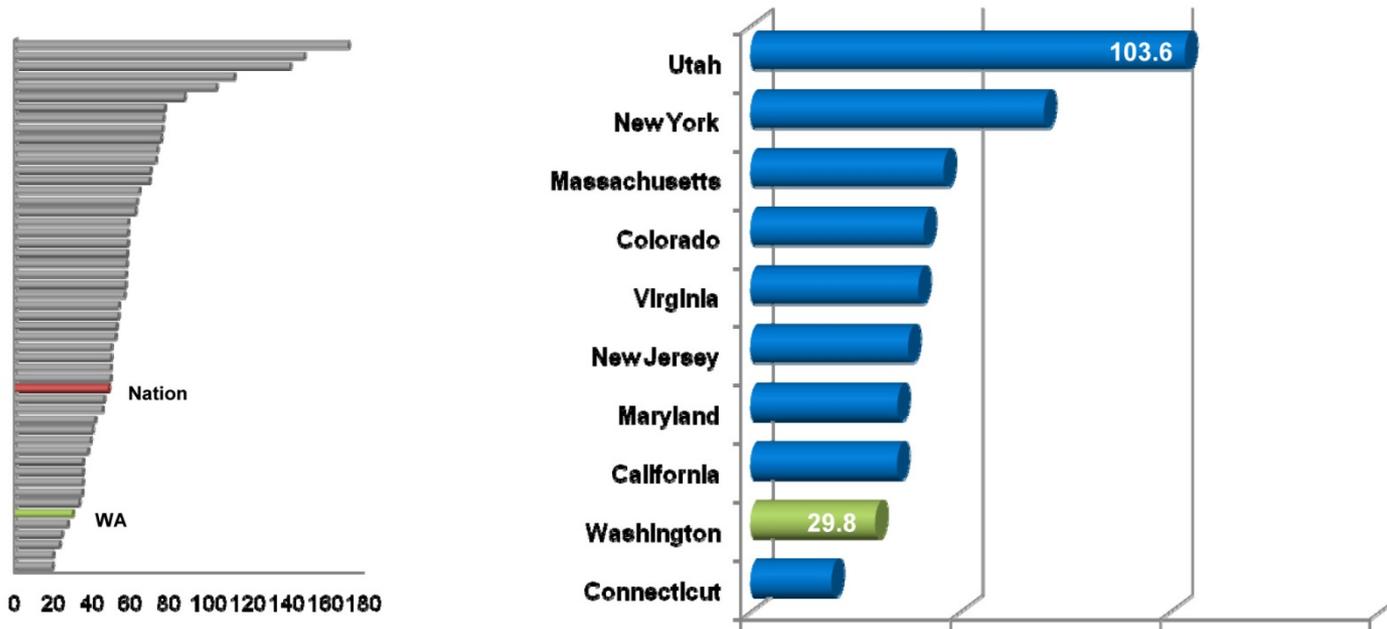
# Washington's Aerospace Needs

- **Skilled Trade Employees** such as machinists - The community colleges are very responsive to requests for developing specific programs
- **Engineers** at all levels, BS, MS and PhD – These are the designers and innovators who not only provide design support for existing projects but develop innovations that lead to enhanced productivity, new products and future jobs. A good example is the development of composites. These were not major components in commercial aerospace, but now form the basis for a new segment of the aerospace industry.

# Washington's Contribution to the Supply of Engineers

Washington has not done very well!

In-state Engineering Degree Production Per 1,000 Engineering Occupations (2005)



Source: NCHEMS/U.S. Census Bureau

Washington is # 45 in the Nation

# Washington State University's Response

- WSU serves the entire state
- WSU works closely with about 20 pre-engineering programs at community colleges across the state to get efficient transfer – Last year 350 students transferred from these programs
- WSU undergraduate programs are growing. Since 2004, the number of undergraduate certified engineering/computer science majors has increased by 75% to 870
- WSU graduate programs are growing. Since 2008, the graduate student population has increased by more than 40% to 685
- WSU research programs are growing. Since 2007, the research expenditures have doubled to \$21,000,000 per year.
- All of these have happened while WSU has taken a 52% cut in state funding.

**All engineering programs are at capacity and capped!**

## **If the Governor's Initiative is funded WSU will**

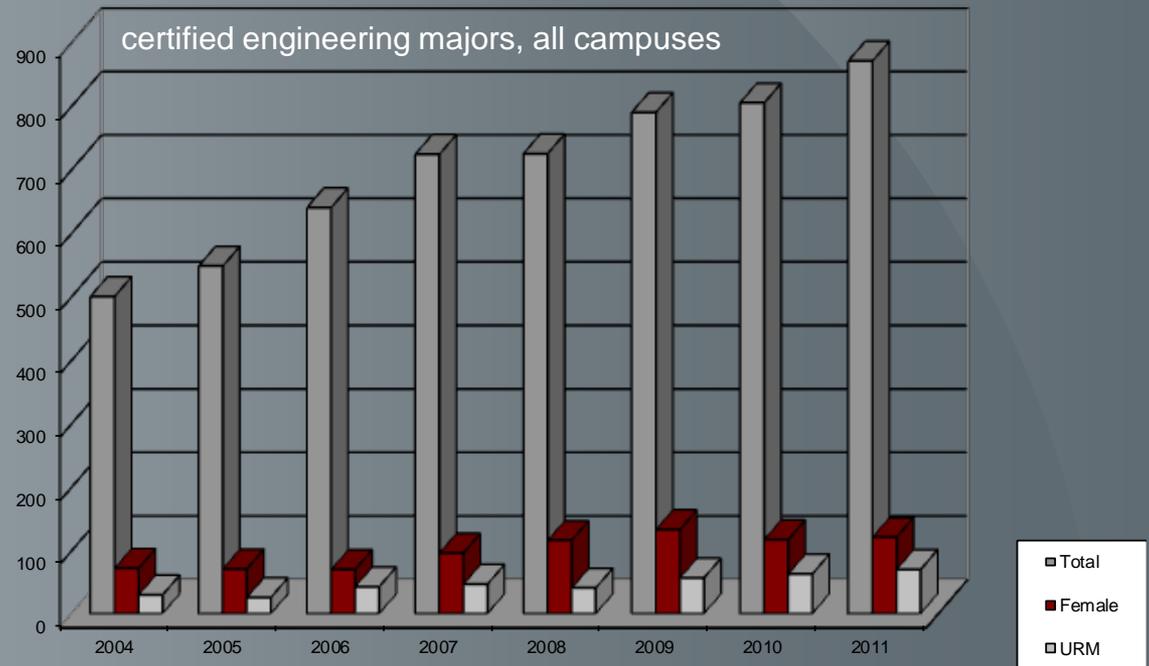
- Grow the enrollment (undergraduate and graduate) in Pullman
- Grow the enrollment at the Vancouver campus
- Grow the enrollment at the satellite campus in Bremerton
- Grow the enrollment at the new satellite campus in Everett

**All engineering programs now at capacity will grow commensurate with excess student demand**

# The Number of WSU Engineering and Computer Science Students is Increasing

- Total Certified Majors up 74% (499 – 870)
- Female Certified Majors up 69% (71-120)
- Underrepresented minority Certified Majors up 138% (29 – 69)
- 732 New Freshmen in the CEA!

WSU used state “high demand” funding to support some of this growth



Enrollment is now capped due to available resources

WSU is trying to be creative about increasing enrollment without sacrificing quality. Here's how.....

# Engineering at WSU Vancouver

Offers ABET accredited programs in

- Computer Science
- Electrical Engineering
- Mechanical Engineering

In 2011, the programs graduated

- 15 Computer Science students
- 40 Mechanical Engineering students

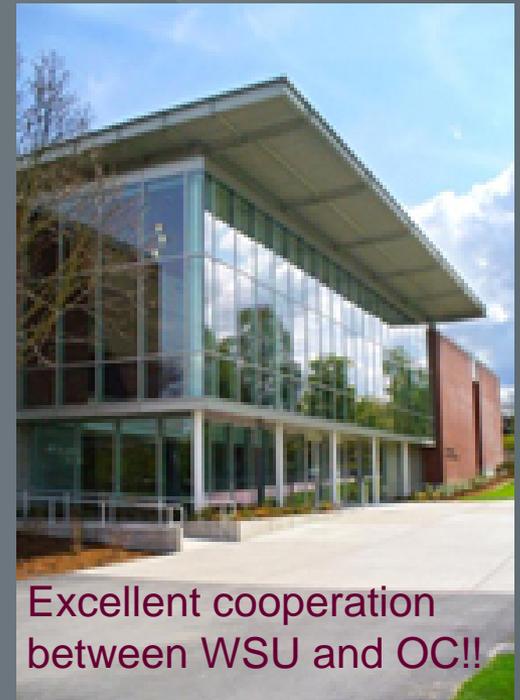
15 Electrical Engineering students will finish in 2012

Would be expanded if the governor's aerospace initiative is funded



# WSU ME program at Olympic College in Bremerton

- WSU was approached about starting an engineering program by OC in July 2009.
- Students complete their first two years in the pre-engineering program at OC or another local community college using the Associate of Science (Transfer) degree.
- WSU works closely with these community colleges to ensure that the student transfer into WSU programs is as efficient as possible.
- These students (and others from nearby community colleges) are eligible to enter the last two years of WSU's engineering programs.
- After a year of planning, WSU began offering the last two years of the BS ME program at OC in Fall 2010.



Excellent cooperation  
between WSU and OC!!

Partial funding supplied by Olympic College. Would be fully funded and expanded if the governor's aerospace initiative is funded.

# How does it work?

- Staffed by WSU in Bremerton and Pullman as well as local adjuncts
- Classes are both **local** (with OC students only) and by **interactive real time video** from Pullman (with OC and Pullman students together)
- Labs in Pullman in summer

First graduates in May 2012



Kitsap Sun



Puget Sound Business Journal

# How well has it worked?

## Community College Preparation

- Overall, students who began programs at community colleges earn nearly identical GPAs to those of students who began at Pullman

## Growth (a measure of acceptance by students)

- 15 junior ready students enrolled in first year (contract amount)
- 19 junior ready students enrolled in second year (not all who applied could be accommodated)

## Quality

- ABET accreditation extended to Bremerton
- In common classes, Bremerton students do just as well as Pullman students

## Community Acceptance

- See Kitsap Sun - June 13, 2010 – “For some OC grads, everything they wanted was in their own backyard”
- See Kitsap Sun - November 7, 2011 – “Overwhelming demand for spots in engineering program at Olympic College”

## Student feedback

(viacourse evaluations) has been excellent

# WSU ME program at Everett Community College

Planned to be identical to the Bremerton program

- Pre-engineering available at Everett, Cascadia, Edmonds, Skagit and Whatcom
- WSU to offer upper division courses for the BSME at EVCC in Fall 2012
- Approved by WSU Faculty Senate and pending with HEC Board
- North Puget Sound University Center for facilities finalized
- Recruiting students from EVCC and other nearby community colleges
- Recruiting faculty and staff for Everett and Pullman with plans to have first hire this Spring

