TechAlliance

SUMMARY OF TECH'S IMPACT ON WASHINGTON'S ECONOMY

Technology is driving innovation across the state and throughout our top industries. The Tech Alliance wanted to better understand how this shift was affecting Washington's workforce, companies, and communities. In partnership with the economic impact firm, Community Attributes, we dug into the data and stories that underlie Washington's tech-driven economy. The digital report at technology-alliance.com is the result.
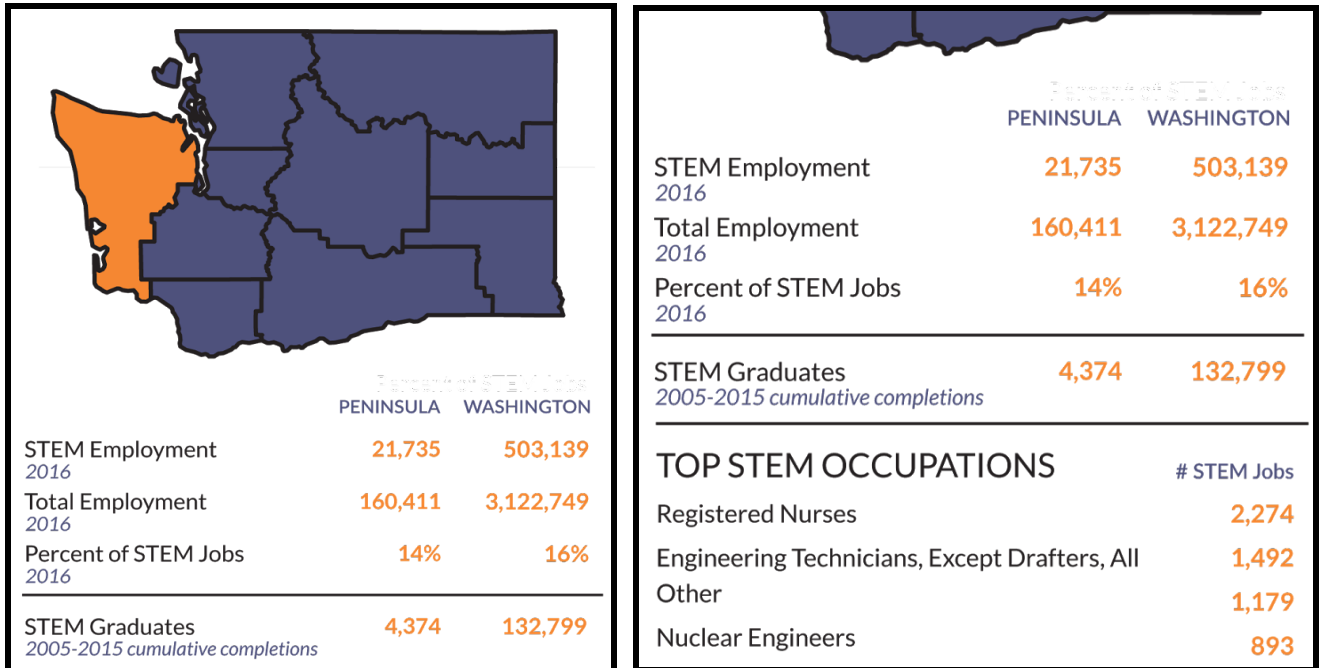
What we found was a diversified economy dependent on the development of new technologies, the adaptation and application of those technologies, and the required shifts in the workforce (new degrees, retraining, etc.). The strength of this economy depends on our collective commitment to supporting those elements that make this growth possible - education, the entrepreneurial and research climate, and distribution of and access to opportunities. This is where the Tech Alliance is focused.

Key Findings

1. **STEM is everywhere.** STEM-driven jobs are in every industry and every community, with minimal variance by region. Software developers, nurses and engineers dominate the STEM occupations in every region of the state, and are working in all industries, not just the ICT sector.
2. **Our institutions of higher education cannot keep pace with the demand**. We have huge gaps in our supply of STEM-trained workers - both in the current workforce and in the pipeline of STEM graduates.
3. **The forecast points to even greater STEM job growth and penetration.** Looking at the state's projections by occupation, we see a much faster rate of growth for STEM jobs over any other; this is dominated primarily by computing-based occupations.

8-20%
Range of STEM jobs as percent of total jobs across state's regions

13,783
Current annual gap between cumulative (10 year) STEM degrees & certificates and STEM job openings

~48%
STEM job growth due to growth in computing occupations
(5,388 of the 11,331 new STEM jobs each year 2020-25)

STEM IN THE PENINSULA

	PENINSULA	WASHINGTON
STEM Employment *2016*	21,735	503,139
Total Employment *2016*	160,411	3,122,749
Percent of STEM Jobs *2016*	14%	16%
STEM Graduates *2005-2015 cumulative completions*	4,374	132,799

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TOP STEM OCCUPATIONS	# STEM Jobs
Registered Nurses	2,274
Engineering Technicians, Except Drafters, All Other	1,492
	1,179
Nuclear Engineers	893

WA STATE UNIVERSITIES ARE NOT GRADUATING ENOUGH STEM GRADS TO MEET JOB DEMAND

*Eastern Washington University's Computer Science program graduates **more than 100 students each spring**; and to keep pace with the tech economy's influence on available jobs, skills required, and how students are learning, Gonzaga University introduced a new degree in 2015 that blends computer science skills with the the study in humanities and social and natural sciences. This Computer Science and Computational Thinking **degree attracted 23 majors in its first year**. These are just examples of programs and shifts happening in universities in the greater Spokane region to try to keep pace with the region's **STEM job demand, 12% of total current employment**. Even the UW Seattle campus, which had the largest number of STEM graduates in the state -**more than 4,300 grads in 2016** (31% of their graduates), is not meeting WA's STEM job demand.*

PENINSULA STORIES THAT ILLUSTRATE THE DATA

SOFTWARE

Do you receive a lot of SPAM emails? And how about those virus emails that actually make it to your inbox? Cyber crime is not going away; and Washington stands out in cybersecurity growth -from investing to start-ups to higher education. In Q2 2017, Boeing's HorizonX Ventures and Microsoft Ventures invested in cybersecurity start-ups, and WA-based Polyverse Corporation received new funding. The state also has five federally recognized centers for cyberdefense education. In Pasco, a three-year-old cybersecurity program at **Columbia Basin College** has seen a 60% increase in enrollment in the past three years, with ~100 students currently enrolled. And, **Whatcom Community College's** CIS program enrollment has increased an average of 18% over the past four years, with 218 students enrolled in CIS program courses in 2016. Additionally, over the summer of 2017, **Boeing** gifted 50 computer servers to **Western Washington University** for use in its new CyberRange at **Olympic College Poulsbo**, a virtual environment where students in Western's CISS program practice cyberwarfare training and cyber technology development. The CyberRange supports all of WA's cybersecurity programs that offer cyberdefense education.