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.

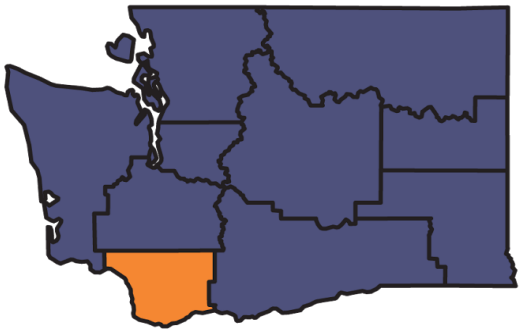
What we found was a diversified economy dependent on the development of new technologies, the adaptation and application of those technologies, and the required shifts in the workforce (new degrees, retraining, etc.). The strength of this economy depends on our collective commitment to supporting those 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.

TechAlliance

STEM IN VANCOUVER WA



	VANCOUVER	WASHINGTON
STEM Employment *2016*	24,171	503,139
Total Employment *2016*	188,914	3,122,749
Percent of STEM Jobs *2016*	13%	16%
STEM Graduates *2005-2015 cumulative completions*	4,903	132,799

	VANCOUVER	WASHINGTON
STEM Employment *2016*	24,171	503,139
Total Employment *2016*	188,914	3,122,749
Percent of STEM Jobs *2016*	13%	16%
STEM Graduates *2005-2015 cumulative completions*	4,903	132,799

TOP STEM OCCUPATIONS	# STEM Jobs
Registered Nurses	3,894
Computer User Support Specialists	1,193
Civil Engineers	1,094
Software Developers, Applications	778

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

*In Vancouver, **Clark College** recently unveiled its new 70,000-square-foot, $40 million STEM building to encourage more students to enroll in STEM courses and to meet the increasing demand for STEM-skilled talent. Further upstream, **Vancouver Public Schools** received $35,000 (some of the $2 million grant from OSPI and Washington STEM) that will be matched by **TechSmart Kids**, to bring introductory computer science and coding classes to middle school students last year. These are just a few examples of programs and shifts happening across the Vancouver community to try to keep pace with its **STEM job demand, 13% 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.*

TechAlliance

VANCOUVER WA STORIES THAT ILLUSTRATE THE DATA

ADVANCED MANUFACTURING

Vancouver's manufacturing industry is a legacy industry in the region. With companies like SCH America and Linear Technology, Clark County is home to a significant semiconductor manufacturing hub. As of May 2017, 13,400 people are employed in manufacturing. As the industry and region evolve due to technological advancements, so do skill requirements for the region's workforce. According to the state Employment Security Department, a mix of skills is needed as more and more becomes automated and mechanized in the manufacturing process. Manufacturing employers need employees who have competency with computer and electronic systems, as being able to operate and fix complex machinery rises in demand. To meet this demand shift in an industry driving much of Vancouver's economy, **Clark College**, along with **Washington State University Vancouver (WSUV)**, coordinate efforts and curriculum to provide students with the education required to fill these highly technical jobs. From two-year degrees to four-year degrees the colleges are supplying a growing number of CS, Mechanical Engineering, and Electrical Engineering degrees - and the pipeline between the two colleges is significant, with ~75% of all Clark College graduates transferring to WSUV's program to complete four-year programs. This is especially noticed in the technical programs.

ADVANCED MANUFACTURING & SOFTWARE

As occupations, industries and communities become increasingly dependent on technology for growth, for innovation, for competitiveness, for economic vitality - so do the creative partnerships and solutions that emerge across Washington. For instance, in Vancouver, the **Innovation Partnership Zone (IPZ)** is an initiative designed to grow and support tech companies by cultivating partnerships between the private and public sectors, as well as education. The IPZ is a **Washington State Department of Commerce** designation created to stimulate the growth of industry clusters. There are 14 IPZs across the state, and Vancouver's IPZ was awarded this designation for an applied digital technology accelerator. Recently, California-based **RealWear**, the maker of wearable tech, named its office at Fort Vancouver Artillery Barracks its new headquarters, where the company currently employs over 20 full time employees (70 globally). RealWear's flagship device is its HMT-1, a helmet-mounted display and microphone that links in-the-field workers with support staff. The device is used in the private sector and in the military.