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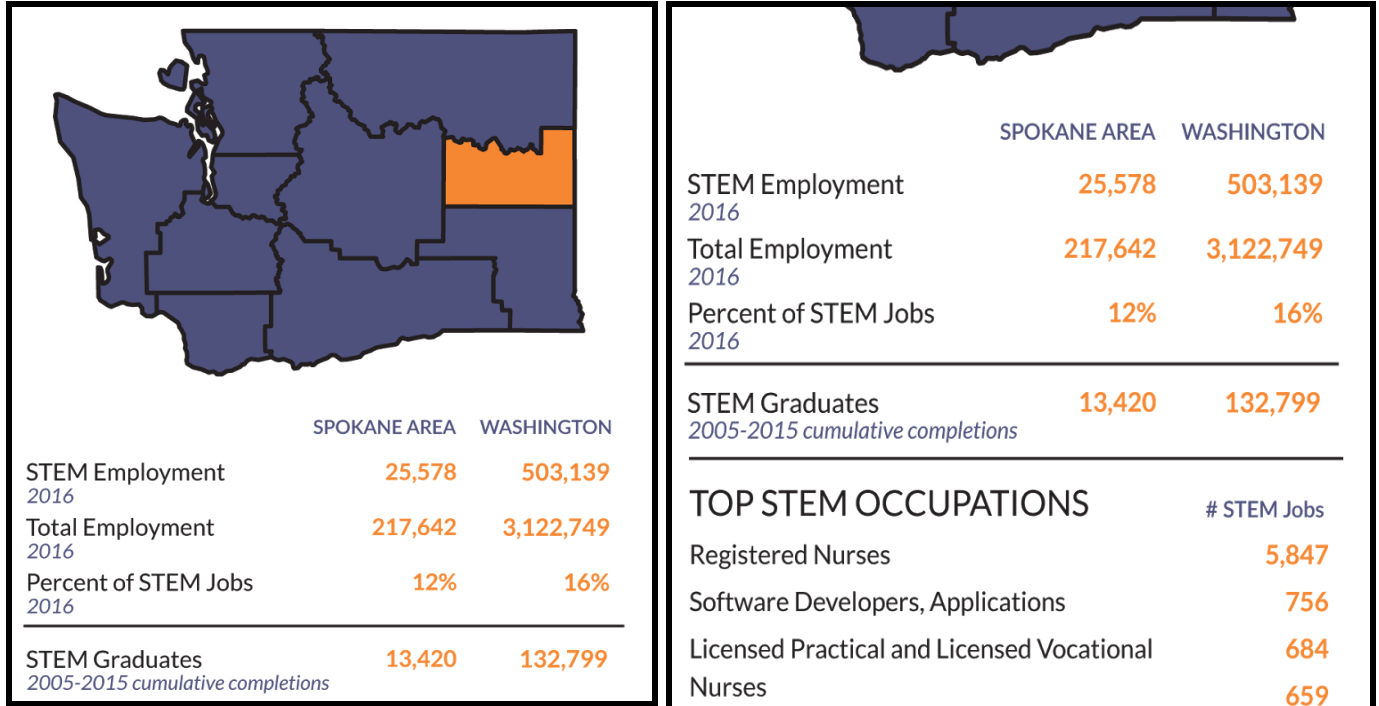
What we found was a diversified economy dependent on the development of new technologies, the adaptation and application of those technologies, and the required shifts in the workforce (new degrees, retraining, etc.). The strength of this economy depends on our collective commitment to supporting those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

	SPOKANE AREA	WASHINGTON
STEM Employment *2016*	25,578	503,139
Total Employment *2016*	217,642	3,122,749
Percent of STEM Jobs *2016*	12%	16%
STEM Graduates *2005-2015 cumulative completions*	13,420	132,799

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TOP STEM OCCUPATIONS	# STEM Jobs
Registered Nurses	5,847
Software Developers, Applications	756
Licensed Practical and Licensed Vocational Nurses	684
	659

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.*

SPOKANE WA STORIES THAT ILLUSTRATE THE DATA

POWER

In an economy that is driven by technology, one challenge all industries face is how to stay ahead of consumer and market trends. In power, this is no different. There are two efforts underway focused on modernizing Washington's electric system to ensure our power supply is reliable, flexible, and resilient against shifting and evolving conditions. Two utilities -Spokane's **Avista** and the **Snohomish PUD** have each received $3.5 million from the **Washington State Department of Commerce's** Clean Energy Fund. Avista is innovating a 'Shared Energy Economy Model', which shares its energy assets between the utility and the consumer to maximize the resource in the community. SnoPUD is designing a Microgrid and Clean Energy Technology Center in Arlington, which will both be used for conducting R&D on various clean and sustainable energy solutions, bringing new types of jobs to the region. Washington's Clean Energy Fund supports the state's initiative to innovate the power sector for low-carbon solutions.

POWER & ADVANCED MANUFACTURING

Utility linemen, construction workers, firefighters, disaster relief teams, first responders -- all individuals who brave unpredictable circumstances every day. One of those is the risk of electrocution. **Safeguard Equipment**, a startup located in Spokane, Washington, is developing a wearable that can detect the proximity and direction of potentially harmful electricity. When founders Tim Ledford, Brandon Bledsoe, and John Thompson learned that linemen have a 1 in 50 chance of dying on the job, the team became passionate about developing a product that could not only make these jobs less stressful, it could save their lives. The company's technology innovation 'The Sentry' is a clip that attaches to the brim of a hard helmet. Given the technology and manufacturing required, the team opted to start their business in Spokane because of its broad manufacturing presence and close proximity to computer science programs. Spokane utility **Avista** is one of Safeguard's primary investors, and will be outfitting its 2,500+ employees with The Sentry. Avista says they bought in because Safeguard is taking voltage detection to a new level with patent pending digital technology that has the potential to save lives for utility workers.

SOFTWARE

Did you know that Spokane's **Urbanova** collaboration has been recognized as one of the innovators in the "smart cities" movement? Since 2014, Urbanova has brought leaders in utility infrastructure, smart metering and communications, higher education, energy efficiency, population health, and urban planning together to **create a smart city proving ground** in Spokane. Urbanova harnesses data to gain insights, empower people, and solve urban challenges in new ways — enabling healthier citizens, safer neighborhoods, smarter infrastructure, a more sustainable environment, and a stronger economy. The organization's founding partners -**Avista, City of Spokane, Itron, McKinstry, University District Development Association,** and **Washington State University** are committed to establishing an open architecture, open data and open analytics platform to develop scalable and replicable solutions for cities everywhere. Solutions developed and projects performed on the shared data platform will lead to products, services and companies addressing the needs of a more crowded planet and a **workforce that embraces data-enhanced roles for every job.**

www.technology-alliance.com/tech-impact-wa