



TechAlliance

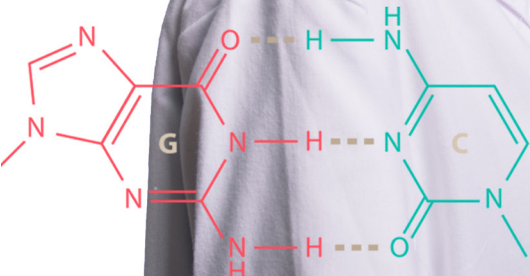


BENCHMARKING REPORT

2021



**BUILDING
A COMPETITIVE
INNOVATION
ECONOMY FOR
WASHINGTON
STATE**



A TECHNOLOGY
ALLIANCE REPORT

The number of words in the inquiry that started it all:
How competitive are we in building and sustaining a vibrant, technology-based innovation economy that benefits all of Washington State's citizens?

The year the Technology Alliance set out to answer this question with its first benchmarking study.

Number of benchmarking reports the Technology Alliance has published since then (including this one!). Each iteration analyzes Washington's performance in essential fields that promote a strong state and society.

Essential drivers of a thriving technology sector and long-term economic success-- excellent education systems, a robust entrepreneurial climate, and high research capacity.

Number of top contenders in the innovation economy: California, Colorado, Connecticut, Maryland, Massachusetts, Minnesota, New Jersey, New York, Texas, Utah, Virginia, and Washington.

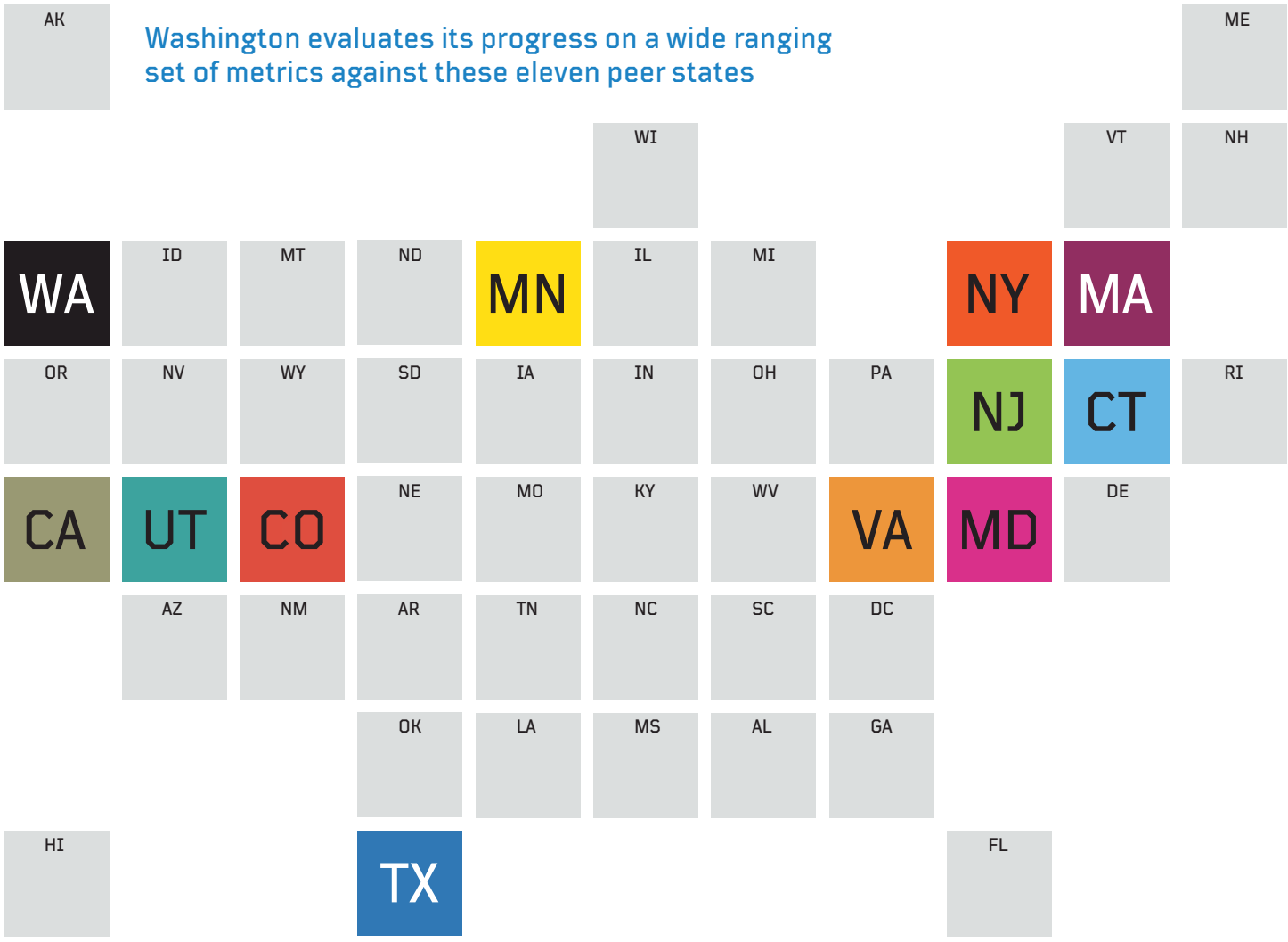
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2003

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3

12



The Technology Alliance is recognized for our ground-breaking benchmark studies, where we periodically measure Washington state's progress over time and compared to its peer states with respect to important metrics in our three pillars: an educated workforce, research capacity, and an entrepreneurial climate. At the forefront of our mission is to evaluate how well our state and all of its citizens are positioned to realize their full potential and the economic and social benefits of the innovation economy.

We look at Washington state compared to our cohort states today and determine if our relative ranking has risen, fallen, or stayed the same. In other words, Washington may be investing more, educating more, or creating more companies today, but are other states getting better faster? Or are we outpacing our peers? Could a rising or sinking national tide be affecting all states equally? We selected our peers based on an analysis of similar technology industry profiles and a similar concentration of R&D activity and investment. Since 2003, the comparison group expanded from 8 to 11 peers (excluding WA) due to state growth in their innovation economies. This report retains the same peer states as the 2015 report.

**A Note on Data and 2020 Context
COVID-19 Context**

For some higher education and R&D metrics, the most recent data available from the National Science Foundation is from 2019. We have used these sections as an opportunity to highlight longitudinal trends in Washington domestically, as well as showcase these trends compared to its peer states. Because 2020 was such an atypical year for educational attainment and economic growth, we believe the omission of the year's data, most accurately reflects Washington's typical growth and workforce trends.

The 2021 report should be read within the context of a novel and continuously changing situation: the COVID-19 pandemic. Future iterations of this report will represent a fuller body of knowledge about this time. The Technology Alliance has always had a curiosity about our state's performance and wellbeing, and a willingness to reconsider the holistic requirements and benefits of a thriving innovation economy. On the other end of this pandemic we may find that the data metrics that we use to evaluate our growth have shifted, and will re-evaluate our performance and needs in light of the many changes our society has gone through. We look forward to working with community partners to reevaluate the measurements in this benchmark report to continue supporting Washington's ability to compete in the innovation economy.



Education and Talent Curation The foundation of a prepared and innovative workforce is a high-quality, comprehensive education system. For many years, Washington's education system has faced challenges in preparing students to meet the growing demands of the innovation economy. The COVID-19 pandemic further highlights the inefficiencies and inequities of Washington's education system (see the Technology Alliance's 2021 *Learning from Calamity* report for a thorough analysis of Washington's pandemic state of learning).

Education is defined here not just as the public K-12 system, but as preschool through Ph.Ds. Each level of education builds on the one before and each contributes to the innovation economy in different but important ways. As discussed below, our state has improved in certain areas over time, but our cohort states are generally improving faster, leaving Washington behind. There are a couple of exceptions to this, most notably in the community and technical college sector, but the overall picture is not what we might hope.

Early Indicators of Student Success

One early determinant of later success is early childhood learning. Pre-school equips children with the skills they need to be successful in kindergarten and beyond. Investments by the legislature and a focus on increasing enrollment in the Early Childhood Education and Assistance program, have netted some gains, but we still lag our cohort states. 46% of Washington kids are enrolled in preschool and Washington state is tied with 5 other states for 24th place.¹ This is up from 41% and 38th place, but there is still room for improvement. Relative to our cohort states, only Utah and Texas have a smaller percentage of students in preschool. By comparison, about 65% of kids in Connecticut and New Jersey are enrolled in preschool.

K-12

Unfortunately, these gains do not hold as our kids move through the system. The National Assessment of Educational Progress (NAEP) is a test administered in all 50 states, used here to determine what portion of our students have achieved proficiency in reading and math by the time they

exit the 3rd grade. According to the 2019 report, 35% of 4th graders demonstrated reading proficiency (as opposed to the lower category of basic) and 39% were proficient in math. Both represent decreases from 2013 (40% and 48% respectively). Unsurprisingly, our position relative to other states has gotten worse as well. In reading Washington has gone from 11th to 27th and in math we were 8th and are now 27th.²

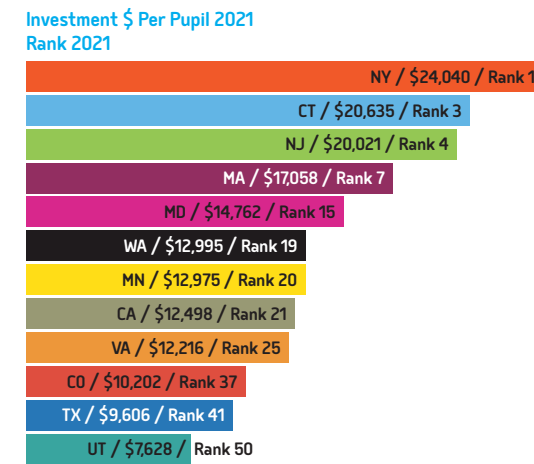
NAEP is administered again in 8th grade. As both reading and math rely on the acquisition of foundational skills to advance to higher level concepts, it is no surprise that the pattern persists. Like the 4th grade results, the 8th grade results indicate that we have had a drop in comparison to the 2013 rankings. 38% of students are reading at proficiency rather than 42% in 2013 and our rank fell from 8th to 11th. 40% of students are proficient at math, down from 42% in 2013 and our rank again dropped from 7th to 12th. It is inadequate consolation that Washington 8th graders rankings improve over 4th graders.³

There is some good news. Our on-time graduation rate has improved from 76% (42nd) to 87%.⁴ That has pushed Washington state above the national average, now tied with 6 other states for 18th place.⁵

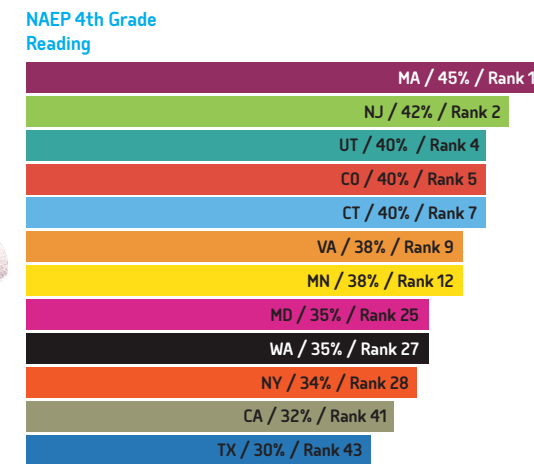
During this time, Washington state has risen from 28th to 19th in spending per pupil.⁶ More study is needed to determine the relationship between this spending, increasing graduation rates, increasing preschool enrollment, and decreasing proficiency rates.

Even as more students graduate high school on time, Washington state continues to rank at the bottom of states when it comes to students enrolling in college soon after high school. Students who are not proficient in reading and math are not going to feel prepared to pursue an advanced degree. According to the NCHEMS, 53% of Washington students go directly from high school to college, placing us 46th in the nation and ahead of only Utah in our cohort states. Nearly 80% of students in Massachusetts go directly to higher education.

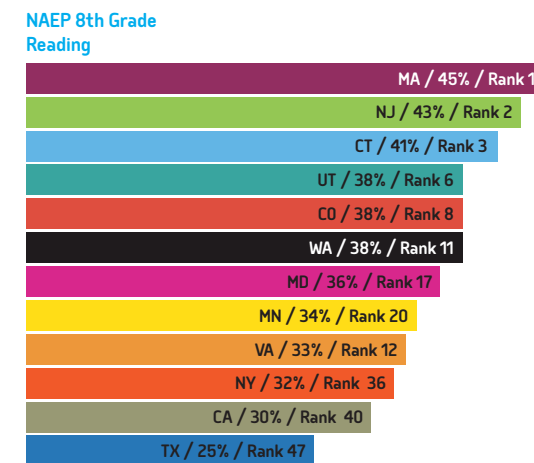
1 Kids Count Data Center, 2020, Young Children not in School in Washington
2 The Nation's Report Card, 2019, State Performance Compared to the Nation Grade 4
3 The Nation's Report Card, 2019, State Performance Compared to the Nation Grade 8
4 Kids Count Data Center, 2021, High School students not graduating on time in Washington
5 EducationData.org, 2020, U.S. Public Education Spending Statistic



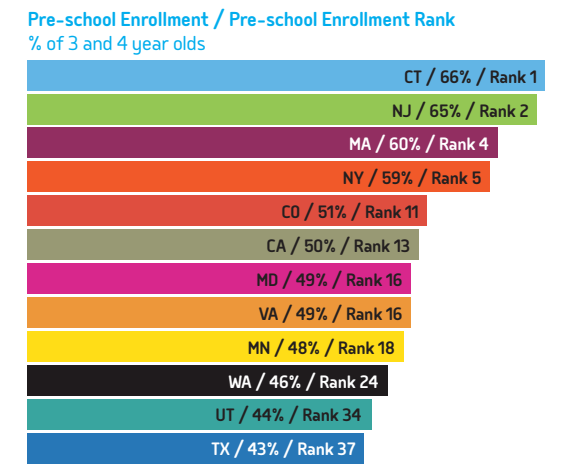
EducationData.org, 2020, U.S. Public Education Spending Statistic



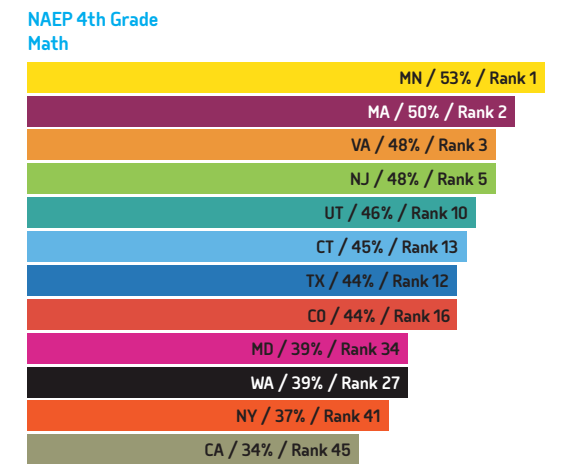
The Nation's Report Card, State Profiles



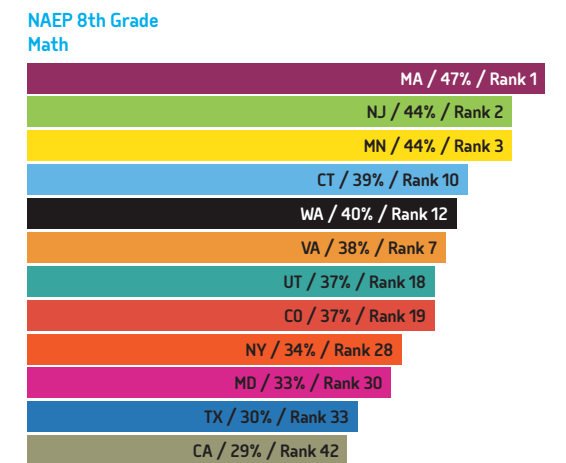
The Nation's Report Card, State Profiles



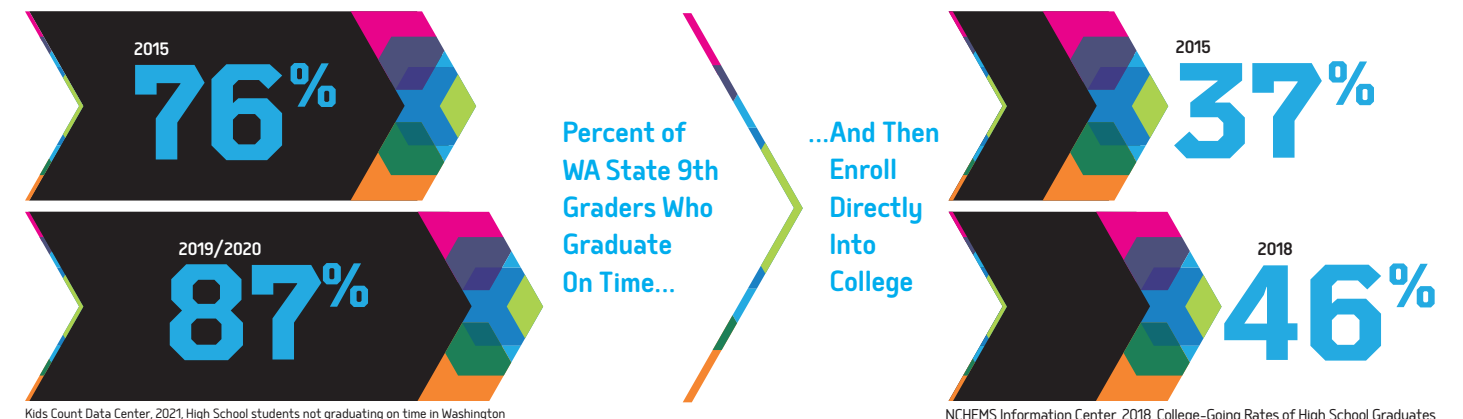
Kids Count Data Center, Young Children not in School in Washington



The Nation's Report Card, State Profiles



The Nation's Report Card, State Profiles



Kids Count Data Center, 2021, High School students not graduating on time in Washington

NCHEMS Information Center, 2018, College-Going Rates of High School Graduates

Higher Education Degree Completion and Workforce Preparedness

Despite all this, our higher education system is strong, if too small. Two strengths in particular stand out. First, Washington has one of the strongest community/technical college systems in the nation. Washington is among the top performers in Associates degrees and Science & Engineering (S&E) Associates degrees earned. Not only has the number of S&E AAs earned by 18 to 24-year-olds in Washington increased by 64%, but our state rose in ranking from 11th to 7th nationwide in S&E AA production.ⁱ And the students don't stop there. 14% of community college students transfer to Bachelor programs. Of those who transfer, 82% earn a bachelor's degree within 6 years, the highest completion rate in the nation.ⁱⁱ

This all helps fuel the steady increase in STEM jobs created by startup formation and the aggressive hiring of technology powerhouses such as Amazon and Microsoft.

Looking at the higher education system overall, Washington outperforms many of its peers in the proportion of S&E degrees to total higher education degrees, shooting from 9th place in 2011 to 3rd place in 2019.ⁱⁱⁱ This ranking benefits from Washington's robust community and technical College system and S&E Associates conferment. Without the inclusion of associates degrees, and a smaller number of PhDs, our ranking would fall.

Our second area of strength is that Washington undergraduates, on average, graduate with much less debt than their national contemporaries. Nearly half of all Washington undergraduates graduate with no debt (48%). The average graduate takes on \$22,785, more than \$10,000 below the national average. Washington students accumulated the 10th lowest-student debt in 2019.^{iv} Among innovation economy competitor states, only Utah averages less debt than Washington, and only four states have smaller percentages of undergraduates who graduate with debt. Given the national concern over the growing student debt crisis, this is an important feature of Washington's higher education system, producing graduates who are better off economically, and better positioned and prepared to enter the workforce.

However, while Washington has made increases in its total degree production at the undergraduate level (and more substantial increases in S&E production at graduate level), and has seen our national ranking steadily rise, our cohort states are getting better faster. Overall, California and Virginia surpassed Washington in every metric of higher education degree attainment: Associates, Bachelors, Masters, and PhDs, as well as postdoctoral appointments in research-based STEM fields. Only New Jersey and Texas are ranked lower than Washington among our competitor states in undergraduate degree production per 1,000 students.^v The impact of the unprecedented investment in higher ed in the Workforce Education investment Act passed during the 2019 legislative session remains to be seen in both the numbers of students going into higher education and degree production.

At the highest levels of educational attainment, our performance makes improvements over time relative to the nation, but not our cohort states. Nationally, Washington went from

47th to 42nd in master's degrees earned per 10,000 individuals aged 25-34, and from 30th to 20th place in PhD Degrees earned per 10,000 individuals aged 25-34. Among competitor states however, Washington still ranks lowest in master's degrees and S&E master's degrees.^v

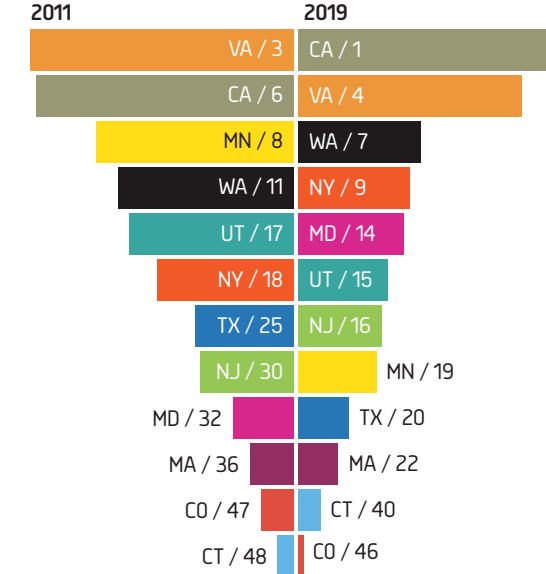
Washington rose in scholarship and research PhDs conferred per 10,000 individuals aged 25-34, moving from 30th to 20th place. This places Washington ahead of eight of its twelve peer states, though it drops sharply in postdoctoral appointees in research-based STEM degrees.

Thanks to the impact of S&E degrees among associates and PhD earners, Washington rose from 9th to 3rd nationwide in having the highest proportion of S&E degrees among all higher education degrees earned.^{vi} The prevalence of S&E degrees at the entry and terminal degree levels has a significant impact on our metrics. If we were considering only bachelors and master's degrees, Washington would have the lowest proportion of S&E degrees of any of the states compared. A truly robust system would fill this "missing middle" of S&E degrees among bachelor's and master's degree levels.

All of this adds up to a troubling disparity between Washington's need for an educated, innovative workforce, and its capacity to produce such talent domestically. While Washington has seen gross growth in educational attainment in the total degrees conferred and national rankings at every degree level, the competitive edge of this growth is reduced compared to the more substantial gains experienced by most of its peer states.

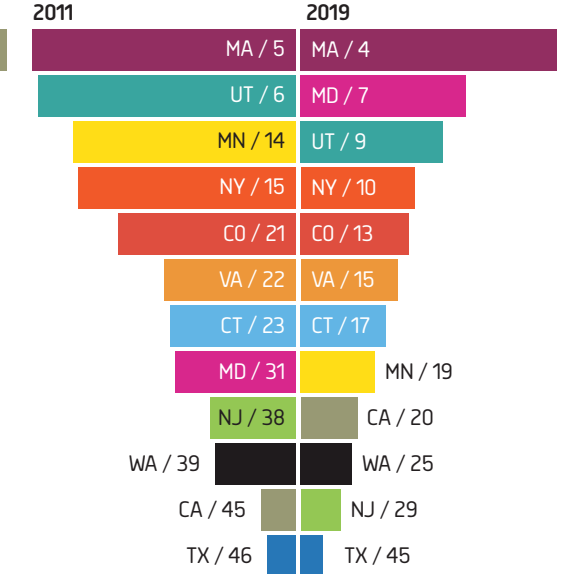
A relatively modest degree of growth in our higher education system compared to other states, combined with an increasingly mobile workforce (highlighted by the pandemic) may have negative implications for students as they compete against a nation-wide pool of jobseekers. Failing to prepare our own students for the innovation economy not only disadvantages them but poses a challenge to our innovation-based companies. Not addressing this problem compromises Washington's long-term competitiveness and economic stability.

AA Degrees Science & Engineering / Rank



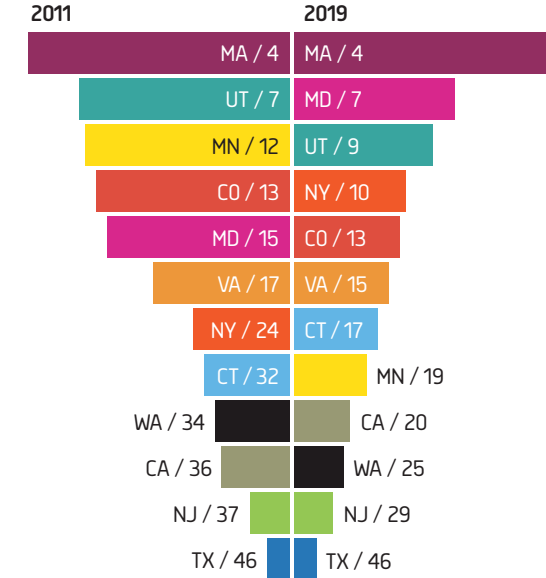
NSF SGE Indicators, 2019

Bachelor Degrees / Rank



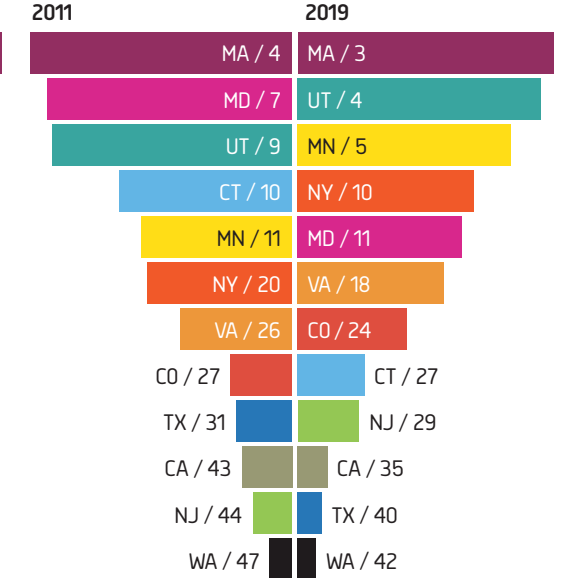
NSF SGE Indicators, 2019

Bachelor in Science & Engineering Degrees / Rank



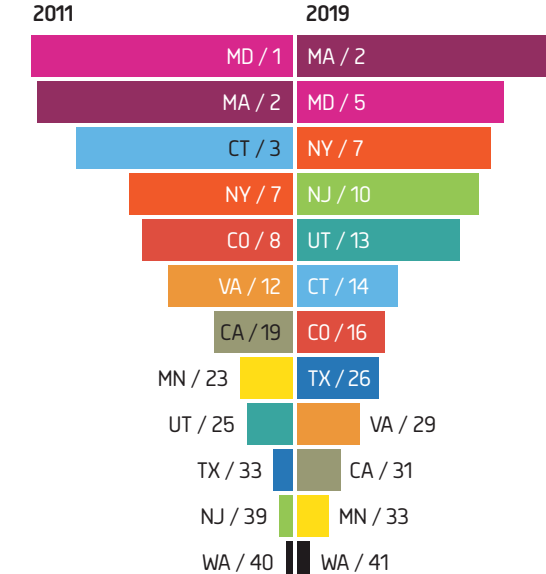
NSF SGE Indicators, 2019

Masters Degrees / Rank



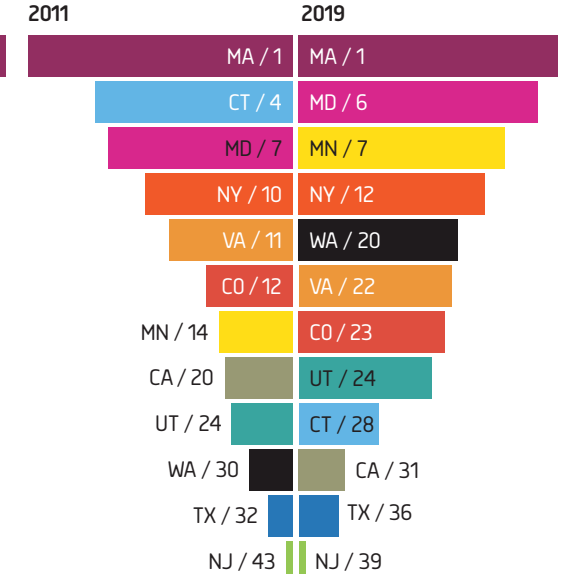
NSF SGE Indicators, 2019

Masters in Science & Engineering Degrees / Rank



NSF SGE Indicators, 2019

PhD Degrees / Rank



NSF SGE Indicators, 2019

Washington Undergraduate Degrees Awarded, per 1,000 Individuals 18-24

	2011	2019
AA Degrees in Science & Engineering	2.42	3.96
Bachelor Degrees	47	52.1
Bachelor Degrees in Science & Engineering	17.6	24.09

NSF State Indicators, and NSF SGE Indicators. 2019

Washington Graduate Degrees Awarded, per 10,000 Individuals 25-34

	2011	2019
Masters Degrees	65.5	88.25
Masters Degrees in Science & Engineering	15.7	16.12
PhD Degrees (Research Scholarship)	6.2	9.48

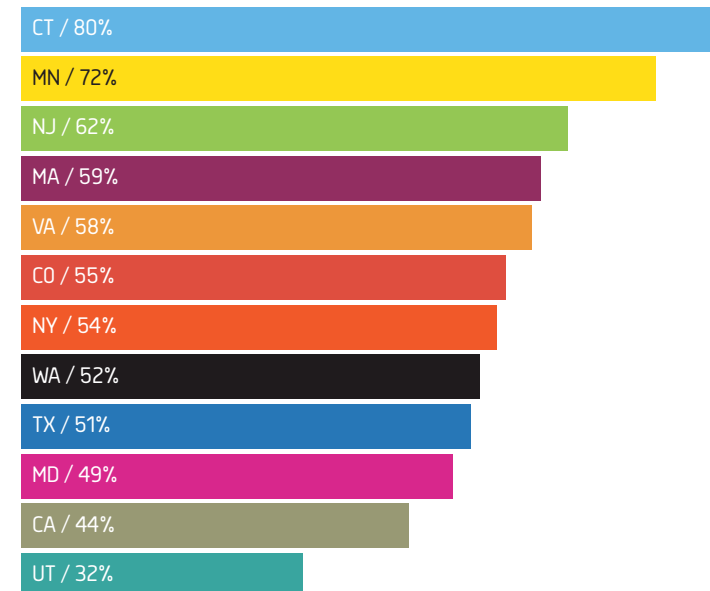
NSF State Indicators, and NSF SGE Indicators. 2019

Washington Undergraduate and Graduate Degrees Awarded, by Rank

	2011	2019
AA Degrees in Science & Engineering	11	7
Bachelor Degrees	39	25
Bachelor Degrees in Science & Engineering	34	25
Masters Degrees	47	42
Masters Degrees in STEM	40	41
PhD Degrees	30	20

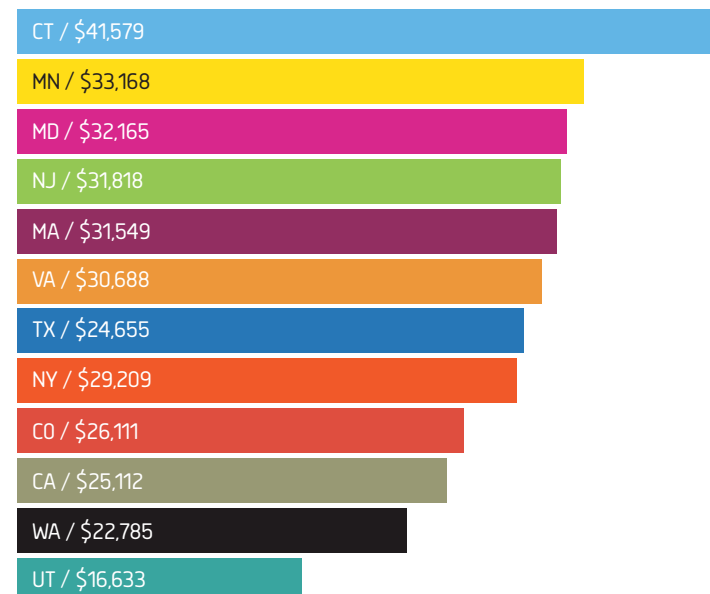
NSF State Indicators, and NSF SGE Indicators. 2019

Students Taking on Bachelor Degree Debt (percent)



Research and Scholarship

Average Bachelor Degree Debt (\$median)



US Census. 2020. "Educational Attainment in the United States."

Research Capacity A thriving technology-based economy rests on a strong foundation of research and development. Research and development by state, business, and higher education sectors serve as a strong basis for new knowledge, non-zero-sum growth, cutting edge innovations, and entrepreneurial spirit. Creating an environment that supports R&D across all sectors creates opportunities to diversify and spark new industries while facilitating specialization and expertise retention in existing companies. It is vital that both sides of the metric— research *and* development – are supported in Washington to ensure ideas are created *and* come to fruition.

State trends indicate that while Washington has a strong track record in patent filing and R&D investment by businesses, these do not translate into proportional economic impact.

This is one area in which it is important to remember that different sectors have very different needs. While it is possible to develop the next killer app in your garage in a year, developing the next lifechanging drug or medical device requires far more sophisticated lab space and a much longer time horizon. Of particular concern is that vacancy rates for suitable properties are at historic lows, driving fierce competition and higher facility rates.

Patents

We tend to focus on patents filed to evaluate R&D performance-- after all, Washington consistently files one of the highest rates per capita nationwide--but this doesn't necessarily translate to economic impact. Despite being 2nd nationally in patents filed, the economic value of R&D suffers compared to peer states in performance.^{vii} Other states are doing a far better job translating their patent filing to economic performance. In other words, Washington is 'heavy on the R, light on the D' when it comes to research and development. We need to translate the research into implementation to ensure our economy benefits fully from its effects. Patents don't stick technology to Washington; what sticks technology to a state is development opportunity. Outside of patent metrics, Washington has several areas for growth.

Funding for Research and Development

Contextualizing our R&D findings is the fact that Washington is the only state among its peers to not have an R&D tax credit (having ended the credit in 2014). In addition, R&D expenditures have been heavily dependent on sector. R&D funding for higher education, business, nonprofit organizations, and internal state operations increased since 2012. Business R&D funding drastically increased, more than doubling over six years. At the same time R&D expenditures for federal operations and Federally Funded Research and Development Centers (FFRDCs) fell over time.^{viii}

Federal obligations are another way through which we can measure R&D expenditures within states. While Washington has seen an increase in total federal obligations in most R&D sectors, it has fallen in rank in every category, receiving comparatively less than it did in 2011.^{ix}

R&D Performance⁹ value in business rose in total from 2011 to 2019, more than doubling (increasing from 14,494 to 30,305 \$millions). Washington went from 4th to 2nd place. But at the same time, academic and total R&D performance and spending ranks fell, even as total performance and

spending rose in these categories. Washington remained the 13th highest performer in academic R&D performance from 2011 to 2018, while state R&D spending ranking fell from 8th to 10th place. The ultimate result of these sector discrepancies is that while total R&D performance goes up from 2011 to 2019 (17,979 to 24,958 \$millions), our state ranking fell from 2011 to 2017 (from 6th to 14th).^x

R&D is fostered not only through funding, but also through ecosystem support. Commercialization and expansion of R&D output requires minimizing barriers for would-be entrepreneurs, and accelerators and incubators play an important role in opening doors. In 2007, Washington had one accelerator. This number spiked over the next seven years, with Washington having 20 incubators and accelerators in 2014. From 2014, Washington saw notable growth in these spaces, with increases in the number of accelerators, coworking spaces, and incubators statewide.^{xi} Critically, these spaces are dispersed across the state, though there is a concentration around and within King County. This is the 8th largest number of accelerators and incubators among its competitor states. On the other hand, there remains a critical shortage of facilities for life science companies

that need actual laboratory space and other resources as opposed to office and co-working space. This results in very real difficulties for life science start-ups.

R&D Performance Across Sectors

Overall, private technology industry spending provides a beneficial boost to our overall R&D expenditures. We should celebrate Washington's tremendous business R&D investment growth over the past decade, which has been robust *and* sustained. Washington has made tremendous growth even as many peer states have fallen in rank. The information and computing sector tends to emphasize the "D" step in research and development; this is very different from the life sciences sector where we struggle to translate research into products. Specific sectors may specialize in the former or latter step, which means there is a great need to bridge the 'valley of death': the gap between "R" and "D". Research institutions want to see their technology commercialized, but they do not necessarily have the in-house expertise or resources to commercialize.

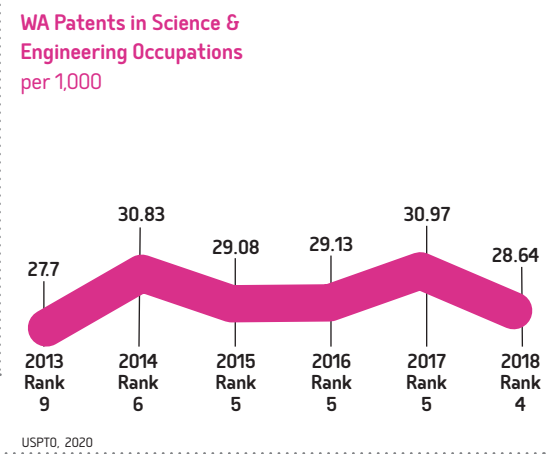
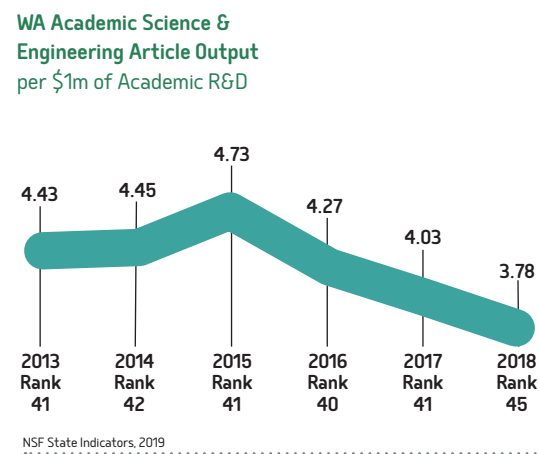
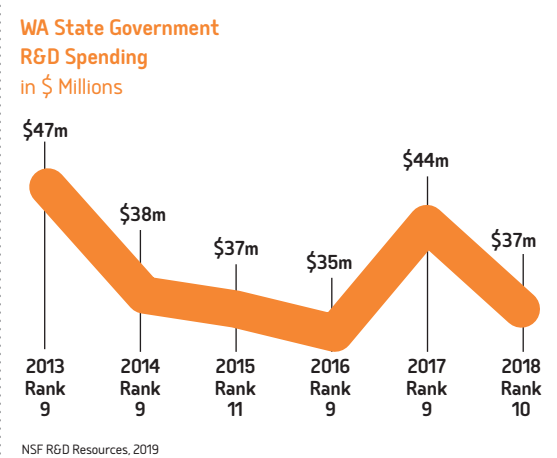
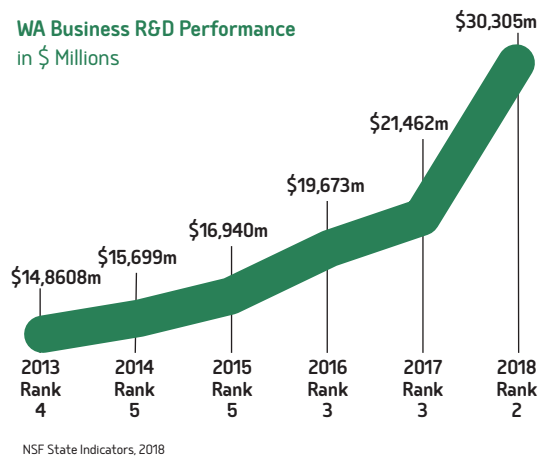
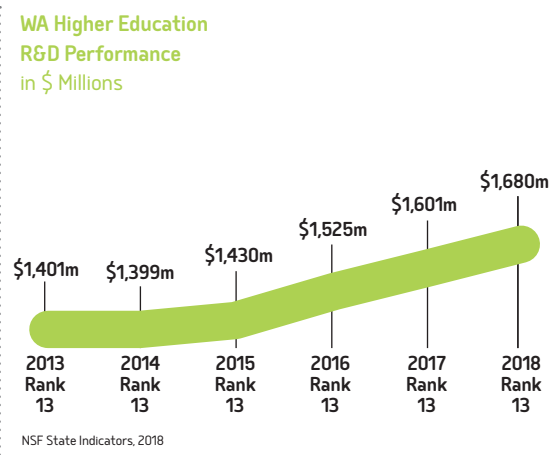
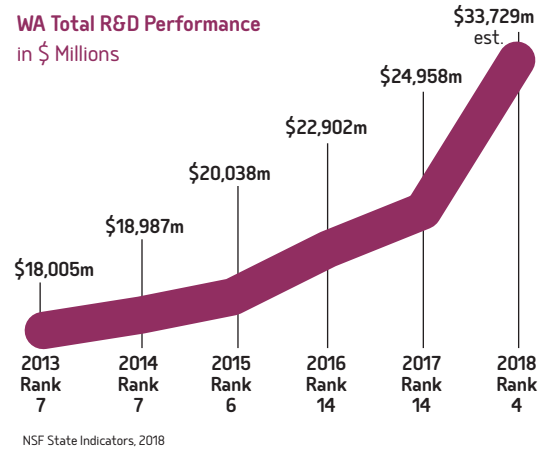
¹ R&D Performance is measured according to NSF Definitions of Research and Development: the value of "the creative and systemic work in basic research, applied research and experimental development", and the value of the "new or significantly improved knowledge, products, service, processes, and techniques". <https://www.nsf.gov/statistics/randdef/#chp16chp26chp3>



Consider Washington's potential, if our higher education R&D performance matched its business robustness and if the life sciences sector retained as much of their product development here as the information and computing sector. Our performance also benefits from the vast amount of research that takes place outside of higher education. FFRDCs and some specific state departments also conduct research critical in advancing industry knowledge, processes, products, and services.

Businesses can move, incentivized by financially attractive state economies and landscapes. Academic institutions cannot migrate, but an attractive workforce in higher education and research *does*. Washington's marginal growth in total R&D performance (which encompasses business, higher education, nonprofit, service, and technological sectors), benefits from our robust business growth, but is capped by both our lack of investment in academic research, as well as a potential lack of academic institution capacity, reflected by limits in research efficiency. Since 2011, Washington's academic research institutions' S&E research efficiency (measured by academic S&E article output per \$1 million of S&E R&D funding) fell from 38th to 40th, reflecting among the lowest research efficiencies in the nation (3.87 articles per \$1 million R&D funding).^{xii}

In addition to having among the lowest academic S&E efficiency nationwide, Washington has seen a negligible increase in academic research space (across all higher education institutions): less than 200 thousand square feet in nearly a decade. Several of our competitor states benefit from the presence of many large private research universities.^{xiii} By comparison, Washington's academic research is centered primarily on two public institutions: the University of Washington and Washington State University. Washington does not have nationally ranked private universities, so there is an additional



burden on our state schools -- and thus on state expenditures -- to compete with states with more heavily funded nationally ranked private schools for federal funds. Given the relative mobility of businesses compared to academic institutions, our reliance on corporate R&D puts our state in a more precarious position than states that are more diversified. Higher institution funding makes a meaningful contribution to our state's total R&D performance.

At a minimum, if we want to see the growth of the last two decades continue, we must prioritize and support the staying power of academia. Washington can experience more meaningful growth by critically examining its R&D investment and performance across sectors, evaluating where additional funding will contribute to better R&D output efficiency, and respecting and supporting the needs of diverse sectors.

Investing, Commercialization, and Entrepreneurship

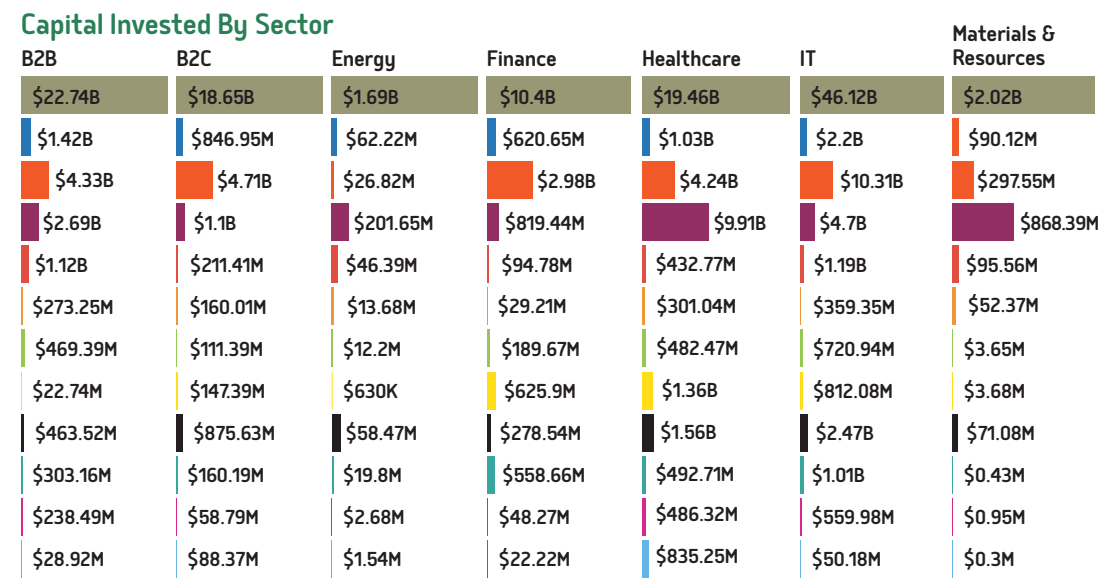
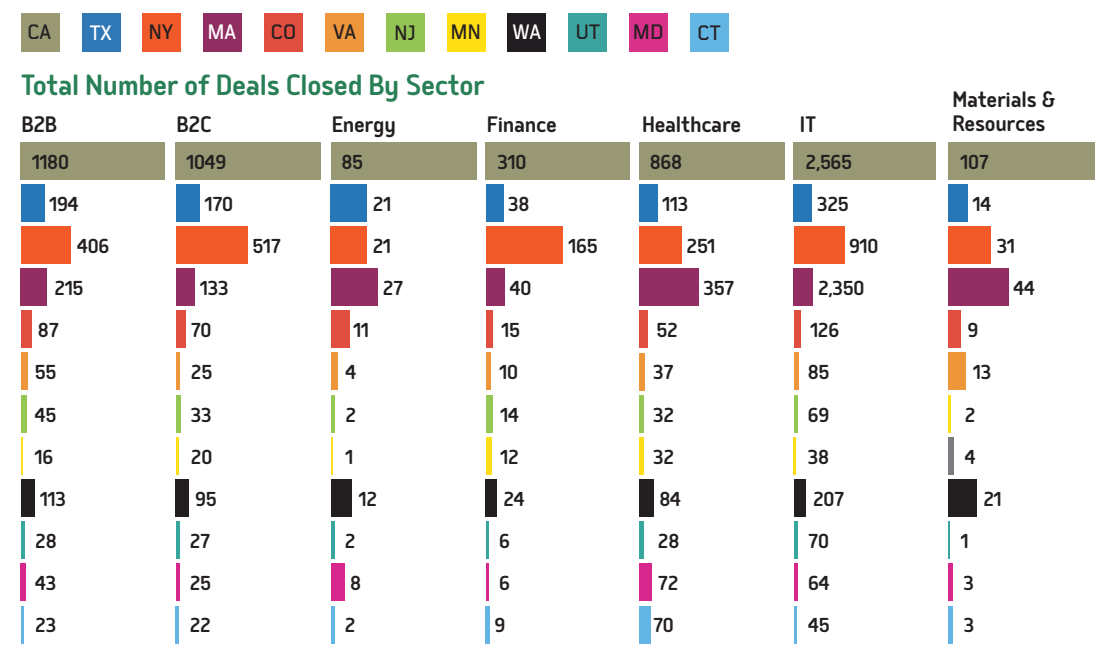
A healthy entrepreneurial ecosystem not only sets the stage for inventions that are a point of pride in the state, but also creates jobs for Washingtonians, a resilient economy, and the kind of wealth that can drive both public and private investment in creating the just society we all want to see.

While an entrepreneurial climate encompasses many factors, the most tangible and accessible metrics center on access to capital. While California has long dominated all rankings of venture capital investment, there is no reason that Washington state shouldn't be competitive given our rich history and current conditions. However, while Washington state has seen an increase in capital investment and closed more deals across all sectors since 2014, we have not moved up much in the relative rankings since then.

Venture Capital Investment

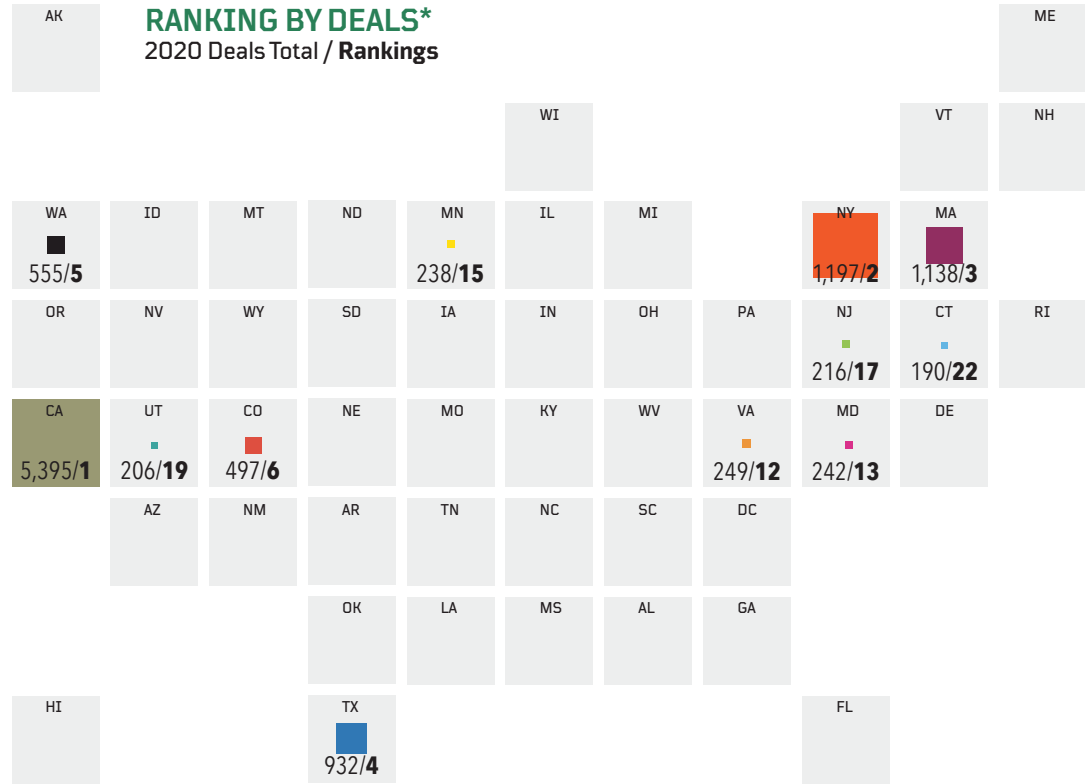
As it has been and may always be, the deployment of venture capital (VC) dollars in the U.S. is the highest in Silicon Valley with California dominating the charts in every sector. Looking at raw dollars, California companies see investments of more than \$86.53 billion which is 5 times more than Washington's \$4.98 billion.¹⁰ In number of deals, the gap narrows with only a 10x multiplier between Washington and California.

When we think of venture capital, we often think primarily of Seattle and associate this with the technology sector such as artificial intelligence or cloud-based companies. While these are large and significant sectors, the state also has a critical mass of startups in the other areas such as medical devices, aerospace, and drug development. While every sector needs an educated workforce and research capacity, these sectors can differ significantly in their needs in the entrepreneurial space. For Washington to begin to outpace our competitors and grow across each sector, we need to ensure that those differentiated needs are supported and have sufficient investment, in order to see our relative rankings increase.



10 Pitchbook, Search Items - Total Number of Deals Closed. Criteria: Washington based HQ only. Deal Date: 1/1/2020 - 12/31/2020. Deal Option: Search on Full Transaction. Deal Type: All VC Stages. Investor Types: Angel / Incubators, Venture Capital

Washington moved from 6th to 5th in venture rankings by deals nationally, but that did not change our position relative to our cohort states. The general trend is that states have grown significantly in deals and capital, but relative rankings have remained unchanged since the 2014 benchmarking report. As the home of M12 and the Alexa Fund, venture powerhouses ARCH Venture Partners, Ignition, and Madrona, strong angel networks, and widely thought of as the second best tech market in the nation, Washington should be in a strong position to improve.

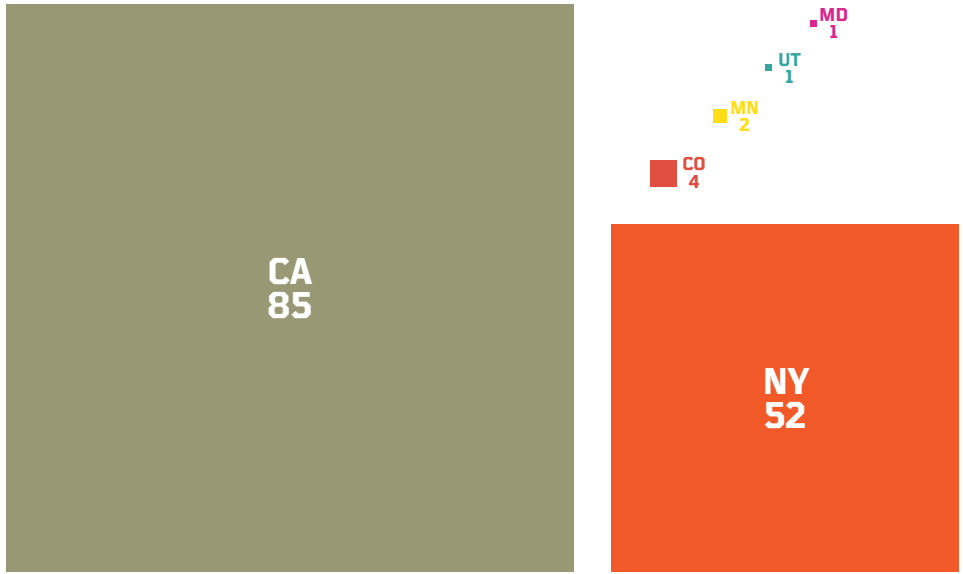


Pitchbook:
 *Criteria: Washington based, HQ only,
 Deal Date: 1/1/2020 - 12/31/2020,
 Deal Type: All VC Stages,
 Deal Options: Search on Full Transaction,
 Inclusive of Angel and CVC

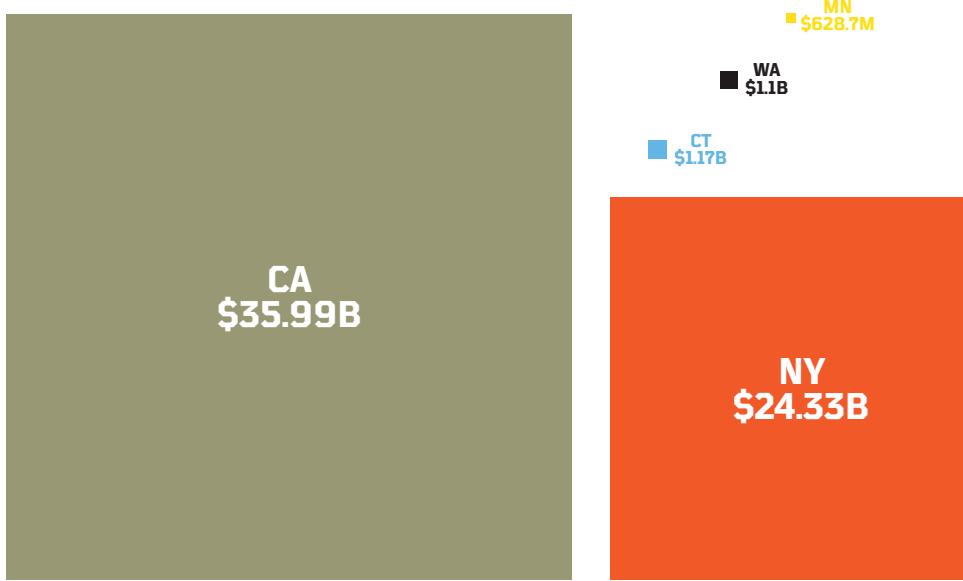
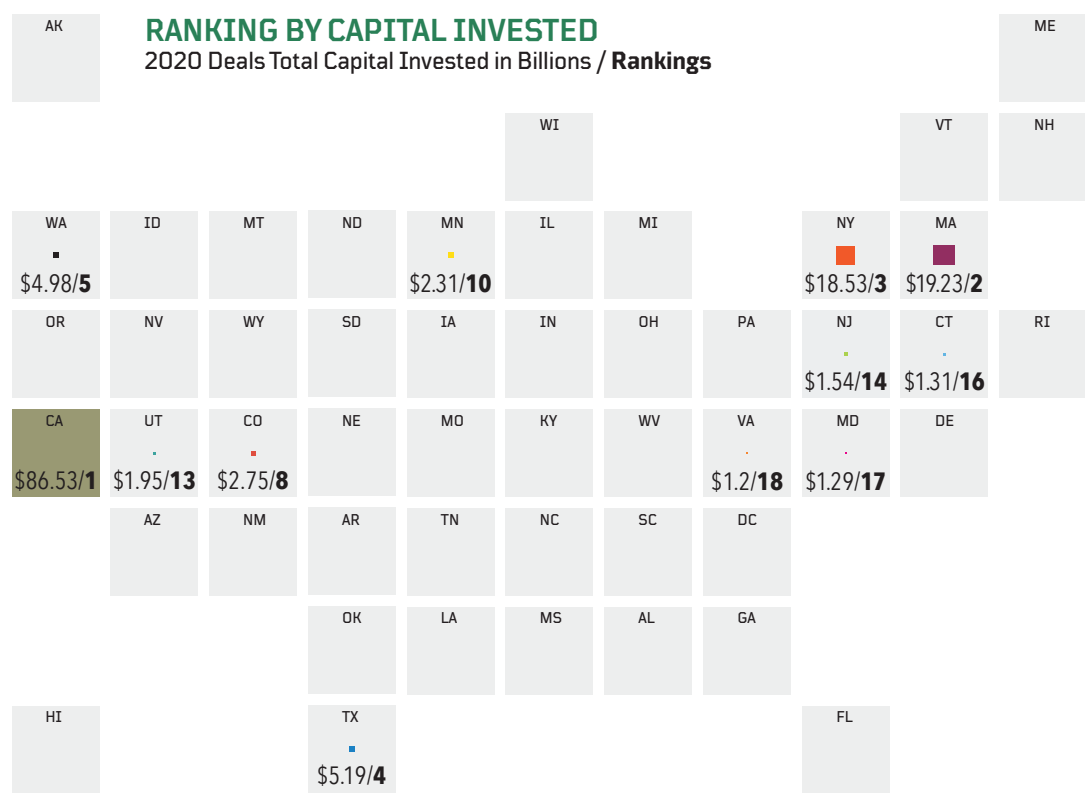
IPOS & Acquisitions

Initial public offerings (IPOs) help to represent the beginning of a period of increased hiring since it signals more spending in the community. IPOs benefit shareholders and create a better ecosystem for local economic growth. The value of Washington state IPOs has jumped from about \$700 million in 2014 to \$1.1 billion. Though we are still ranked 5th overall in this category, the fact that we have raised significantly more shows a positive shift in our growing startup ecosystem.

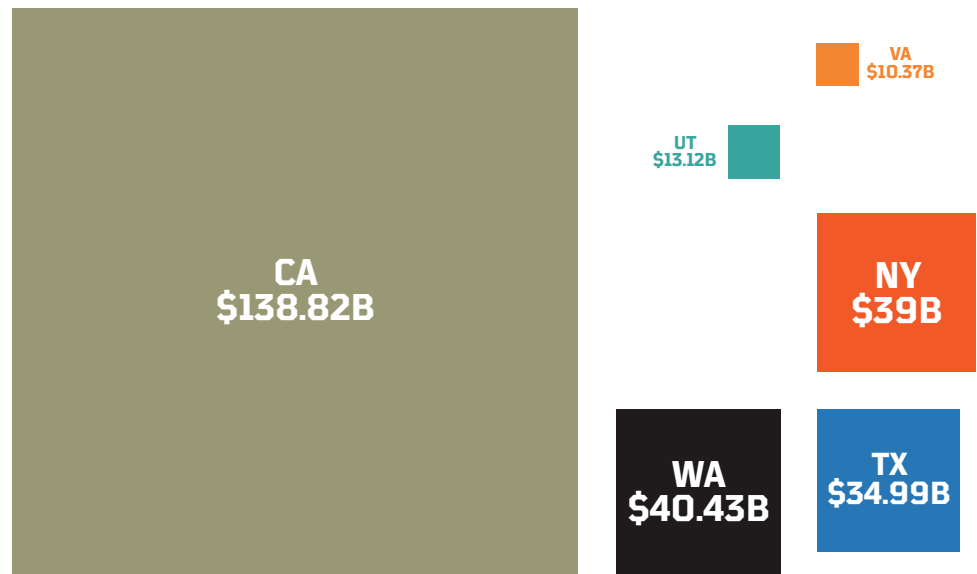
Acquisitions signal growing companies with increased talent needs for new business models. While Washington ranks low in the number of acquisitions, we are 2nd only to California in the value of those acquisitions, thanks in large part to the many high profile, strategic purchases of tech titans like Amazon and Microsoft.



Pitchbook:
 *Criteria: Location - Washington, HQ only,
 Exit Type: IPO, Exit Status: Completed,
 Deal Date: 1/1/2020 - 12/31/2020



Pitchbook:
 *Total Raised
 Criteria: Location - Washington, HQ only,
 Exit Type: IPO, Exit Status: Completed,
 Deal Date: 1/1/2020 - 12/31/2020



Cumulative Value of Acquisitions

Pitchbook:
 *Criteria: Location - Washington, HQ only.
 Exit Type: Acquisitions,
 Exit Status: Completed,
 Deal Date: 1/1/2020 - 12/31/2020



i NSF, 2019. "Science & Engineering Indicators."
 ii WACTC, 2019. "At a Glance."
 iii NSF, 2018. "Science and Engineering Indicators."
 iv US Census, 2020. "Educational Attainment in the United States."
 v NSF, 2019. "Science and Engineering State Profiles", US Census, 2019.
 vi NSF, 2019. "Science and Engineering State Profiles."
 vii US Patent and Trademark Office, 2019. "Calendar Year Patent Statistics."
 viii NSF, 2019. "National Patterns of R&D Resources."
 ix NSF, 2018. "Federal Obligations for S&E Research and Development."
 x NSF, 2018. "Science and Engineering State Profiles."
 xi NSF, 2018. "Science and Engineering State Profiles."
 xii Startup Washington, 2021. "Workspaces."
 xiii NSF, 2019. "Academic Science and Engineering Article Output."
 xiv NSF, 2019. "Science and Engineering Research Space."

Washington State Talent and Innovation Platform

Our 2015 Benchmarking Report identified a three-pronged platform that articulated priorities to support Washington's future competitiveness. Since then, Washington has improved in many of its rankings across the three sectors. Recent reports from Bloomberg, Reuters, and U.S. News and World Report rank Washington as a top state to live and work in, in large part due to its thriving tech and innovation economy. However, for Washington to maintain these gains, and remain competitive against the (more) rapid growth of peer states, we must strive for equitable and continued improvement.

2020 and 2021 have been defined by unprecedented challenges and disruption at the state, national, and global levels. These unexpected complications have hit Washington's people, companies, and institutions hard, and many short- and long-term consequences remain yet to be seen. Therefore, rather than propose new goals for Washington competitiveness, the Technology Alliance concludes this report by revising the goals identified in the 2015 report, recognizing gains already made, noticing sectors that have since become more complicated, and amending the wording to frame a holistic and equitable mission.

Goals for Washington Competitiveness

Education

Washington will have a robust public pre-K-12 system that holistically serves all its students' academic, mental, and social growth needs. The public-school system will continue its positive trends in preschool enrollment and on-time graduation rates, and work to reverse slides in reading and math proficiency, with a focus on reducing disparities across demographic sectors.

The school system will prepare students for their pursuit of higher education at all levels which will prepare them for 21st century careers. Washington's higher education system will maintain its effective emphasis on S&E degree production while expanding to prepare more students across all demographics for high impact career opportunities. This includes meeting the growing needs of in-state innovation economy employers through the production of more general and S&E master's, doctoral, and postdoctoral research students/graduates. This involves:

PROVIDING technology and connectivity as well as other support services to enhance K-12 learning and on-time graduation rates.

ATTRACTING college and career preparation staff that are familiar with varied funding and community resource opportunities that can advise students of all socioeconomic backgrounds in career preparedness.

EXPANDING research and degree completion capacity in high-demand, high-impact degree programs at Washington colleges and universities, including by attracting qualified faculty with full-time tenured positions, expanding graduate research opportunities, and providing graduate and postdoctoral living wages that meet or surpass inflation rates.

Research and Development

Washington will enable more companies to successfully commercialize new technologies in Washington through attractive economic, social, and physical environments. This means maintaining exceptional trajectory in patents filed per capita (especially by individuals in S&E occupations) while critically evaluating areas where the state has retracted its efforts (as it has with total and ranked state government R&D spending). This will involve:

BUILDING scale in life sciences and clean energy to support these critical industries while cultivating an environment of continued growth in information technology and aerospace industries.

ATTRACTING specialists and field experts with promising publication trajectories in higher education R&D positions to improve Washington's academic R&D efficiency and performance.

IDENTIFYING and meeting the differentiated needs of sectors within the innovation economy to develop their research, taking it from "R" to "D". Industries where the vacancy rate for labs is below 1%, such as the life sciences, can benefit from dedicated attention to building sectoral infrastructure needs.

Entrepreneurial Climate

Washington will be the most competitive location for attracting and retaining educated workers, growing young companies, and sustaining mature companies. This will involve:

ENABLING more companies, especially in the life sciences, to successfully commercialize new technologies in Washington state.

DEVELOPING programs to diversify venture capital networks.

INCREASING visibility of Washington state startups to investors from outside of Washington state.



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