WASHINGTON STATE OPPORTUNITY SCHOLARSHIP

Supporting the next generation of STEM & health care leaders

BOARD MEETING AGENDA
MONDAY, NOVEMBER 1, 2016 | 1:00-3:30 P.M.
MICROSOFT CAMPUS

I.	Meeting Called to Order		Brad Smith, Chair	1:00-1:05p
II.	Approval June 22, 2016 Board Meeting Minutes	[Tab A]	Brad Smith	1:05-1:10p
III.	Proposed Expansion of WSOS to Prof/Tech Programs	[Tab B]		
	A. Presentation of Research		Kimber Connors	1:10-1:25p
	B. Panel of Experts from the field		Various	1:25-1:55p
	C. Board Discussion		WSOS Board	1:55-2:05p
IV.	WSOS Staff Report		Naria K. Santa Lucia	2:05-2:15p
	A. Program Update	[Tab C]		
	B. Development (OpportunityTalks, Geeks Give Back, MSFT Give Campaign)			
V.	Finance & Investment Report	[Tab D]	Mack Hogans, F&I Chair Darrell Powell, CSF CFO	
VI.	Executive Session		WSOS Board Members	2:15-3:30p
VII.	Adjourn			3:30p

2016 Upcoming Meeting Date (1:00-3:00p on the Microsoft campus): Wednesday, December 14, 2016

2017 Proposed Meeting Dates:

Thursday, April 13
Thursday, June 29
Tuesday, September 26
Thursday, December 7

Tab A

Minutes from the June 22, 2016 Board Meeting

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WASHINGTON STATE OPPORTUNITY SCHOLARSHIP BOARD MEETING
JUNE 22, 2016, 12:00 - 3:00 P.M., MICROSOFT CAMPUS
MINUTES

The Board of Directors of the Washington State Opportunity Scholarship (WSOS) met on June 22, 2016 at the Microsoft headquarters in Redmond, Washington.

Board members: Brad Smith (Board Chair), Miller Adams, Antony Chiang, Mack Hogans, Gary Rubens, Julie Sandler, and Jim Sinegal present.

Additional attendees: Naria Santa Lucia, Terrie Ashby-Scott, Erin Ashley, John Bowden, Theresa Britschgi, Jane Broom, Kimber Connors, Karyl Gregory, Caroline Maillard, Joanna Moznette, Megan Nelson, Darrell Powell, Juliette Schindler Kelly, Andy Shouse, Caitlin Spence, and Dave Stolier; Jeff Knudsen, Olivia Thurmond, Vickie Rekow, and Brandon Yu by phone.

Meeting Called to Order

Having a quorum of the Board, Brad Smith, Board Chair of WSOS, welcomed everyone and called the Board meeting to order at 12:06 pm.

All those participating in the board meeting introduced themselves. Smith introduced Julie Sandler as a new WSOS board member.

Mack Hogans moved that the minutes of the April 12, 2016 meeting be approved. Gary Rubens seconded the motion. The motion carried unanimously. Mack Hogans also moved to amend the December 15, 2015 WSOS Board meeting minutes from “fiscal year 2016” to “calendar year 2015” in reference to the WSOS Executive Director’s compensation.

Landscape of Financial Aid Funding in Washington State

Rachelle Sharpe, Executive Director of the Washington Student Achievement Council, presented on the affordability of college for Washington students. Going forward, Sharpe will advise the Board on what is most actionable for WSOS.

Opportunity Expansion Grant Proposals

Smith reported that the Opportunity Expansion Grant expands the number of seats at colleges/universities to provide high-demand STEM degrees. Jane Broom reported that the Opportunity Expansion Grant was formed as a result of companies who could donate high-tech, research and development tax credits. Microsoft was the only company who donated their tax credits which totaled $6M.

Smith reported that a decision was made to allow the Opportunity Expansion Grant money to accumulate so more could be accomplished with it. A follow-up decision was made to spend the money on something the WA Legislature could not; something that would stimulate innovation.

Andy Shouse, WA STEM’s Chief Program Officer, presented three proposals for the Board’s consideration: CWU UTeach - $2,189,801; University of Washington-Seattle STARS Program - $2,189,987; Western Washington University - $1,620,212. Total - $6M. All three proposals promised sustainability and their success is dependent on this grant.

Miller Adams made a motion to approve all three proposals. Mack Hogans seconded the motion and it carried unanimously.

Following the vote, Smith noted three things about this Opportunity Expansion Fund program. First, this grant will help provide more opportunities for students in our state, especially in the areas of computer science and math. Second, the program will help lower-income students get into college and strengthen pathways for these students in high-demand areas. Third, Smith noted that this program shows the importance of innovation and how we can use innovation to solve important problems – including the lack of capacity at our state's colleges and universities. Finally, since the tax credit which funded the Opportunity Expansion Fund has been phased out, Smith noted that while this is the end of a chapter, it may not be the end of the book.

Presentation of Post-Graduation Survey

Kimber Connors, former CSF staff member, presented the post-graduation survey for 2015 WSOS graduates. Connors reported that this is the third year the survey has been administered. The results show great success for WSOS Scholars with landing jobs, seeking further education, and receiving high salaries. The Board requested that the next survey include a comparison of WSOS Scholars versus all students in the US in reflecting those employed within their field of study, or outside, or still searching for employment.

New Ideas Discussion & Brainstorm

Next, the WSOS Board and attendees engaged in a brainstorming session on expanding the WSOS Statute to include professional and technical degree programs and marketing strategies.

WSOS Staff Report

Theresa Britschgi, WSOS Director of Programs reported on the WSOS program update. Erin Ashley, WSOS Director of Corporate Relations & Special Events, reported on the WSOS development update. Megan Nelson, WSOS External Affairs Manager, provided a media update.

Finance & Investment Update

Darrell Powell, CSF CFO, reported that the WSOS Finance & Investment Committee met and confirmed a strong financial base for WSOS funds.

2016-18 WSOS Program Administrator Contract & FY17 Budget

The 2016-18 WSOS Program Administrator Contract with the College Success Foundation includes Core Services (Human Resources, Finance, Operations, and Information Technology) for two years - $335,656; separate additional services (Scholarship Services, Data Management, and Advocacy) for one year - $350,786. The contract is in process and should be completed by end of the week or early next week.

Resolution: Provide the Board Chair the ability to continue negotiations and finalize the FY17-18 Program Administrator Contract.

Adams made a motion to approve the Resolution which was seconded by Hogans. The motion carried unanimously.

Santa Lucia presented the FY17 Budget which reflects higher expenses due to an increase in the number of Scholars and staff as well as the expansion of program offerings.

Hogans made a motion to approve the budget and Antony Chiang seconded the motion. The motion carried unanimously.

The meeting adjourned at 2:50 pm and went into Executive Session.

Respectfully submitted,
Karyl Gregory

Tab B

Proposed Expansion of WSOS to Professional/Technical Programs

WSOS EXPANSION:

WA High-Demand Needs

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THE QUESTION

Could the impact of WSOS be amplified through expansion to include funding for students to study high demand fields that require lesser than a bachelor's degree?

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RECENT REPORTS

- A Skilled and Education Workforce:
  2015 Update
  - Washington Student Achievement Council, State Board for Community & Technical Colleges, Workforce Training & Education Coordinating Board

- Washington Kids 4 Washington Jobs:
  Pathways to Great Jobs in Washington State
  - Washington Roundtable, Boston Consulting Group, and Partnership for Learning

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MIDDLE-LEVEL SKILLS JOBS

- What Are Middle-Level Skills Jobs?
  - Require more than a high school diploma, less than a bachelor's degree
  - Certification programs, trade programs, associate's degrees, apprenticeship, other work-based training that results in credential

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SKILLS GAP

- The Need for Middle-Skill Workers
  - By 2022, **about half** of U.S. job openings are expected to require middle-skill level workers.
  - **Nearly a third** (32%) of job openings 2018-2023 in Washington State will require mid-level educational attainment.

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SKILLS GAP

- 2014 Employer Survey revealed:
  - **Nearly three-quarters** (73%) of employers **anticipated growing need** for middle-skill workers.
  - **More than half** (56%) reported that middle-skill **openings were difficult to fill**.

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SKILLS GAP

"The largest skills gap is seen at the mid-level. There were an estimated 35,713 completers entering the workforce in 2013 with middle-skills education. But an additional 10,019 workers will be needed annually to meet [Washington's] employer workforce needs."

- A Skilled & Educated Workforce, *p. 10*

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RECENT REPORTS

- Washington Kids 4 Washington Jobs:
  Pathways to Great Jobs in Washington State
  - Washington Roundtable, Boston Consulting Group, and Partnership for Learning

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ENTRY, PATHWAY, CAREER

- **Entry** Jobs
  - "Jobs that build basic employment skills"
- **Pathway** Jobs
  - "Higher skill with potential path to Career Job"
- **Career** Jobs
  - "Higher skill, higher compensation jobs"

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ENTRY, PATHWAY, CAREER

- **Entry** Jobs
  - 150,000 openings
- **Pathway** Jobs
  - 330,000 openings
- **Career** Jobs
  - 260,000 openings

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ROLE OF WSOS

"GET MORE WASHINGTON STUDENTS IN POST-SECONDARY EDUCATION, with a focus on delivering degrees, certificates, and other credential in fields that will be high demand."

- Washington Kids 4 Washington Jobs
presentation, p. 7

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A Skilled and Educated Workforce

2015 Update

An analysis of postsecondary education, workforce preparation, and employer demand in Washington

A Skilled and Educated Workforce: 2015 Update

Joint Agency Report

Washington Student Achievement Council

Daryl Monear, Ph.D., Associate Director, Academic Affairs and Policy

Randy Spaulding, Ph.D., Director of Academic Affairs and Policy

Mark Lundgren, M.A., Associate Director for Research

Lexi Shankster, Ph.D., Assistant Director for Research

State Board for Community and Technical Colleges

Tina Bloomer, Policy Research Associate

David Prince, Senior Research Manager

Workforce Training and Education Coordinating Board

David Pavelchek, M.A., Acting Deputy Director

David Wallace, M.A., Research Unit Manager

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Summary

Employment projections in Washington for 2018–2023 show a robust demand for workers with postsecondary education. As businesses, industries, and workplaces become increasingly complex, employers need workers with skills and education that allow them to adapt and excel in evolving environments. More than three-quarters of all projected job openings will require at least some education beyond high school, with two-thirds requiring mid-level education or higher.*

Key Results

At the mid-level, overall degree production in health care is generally keeping pace with demand, but gaps are still present in specific occupations, including dental hygienists, emergency medical technicians, EMTs and paramedics, radiologic technologists, and opticians (dispensing). Supply-demand gaps are seen in production and trades fields, such as auto and diesel mechanics and machine tool technicians; business, management, and sales occupations; and service occupations, where there is demand for workers with management skills in a range of fields, such as the culinary and hospitality industries.

At the baccalaureate level, degree production in computer science, engineering, health, and other STEM fields has been increasing steadily. Computer and information science degree completions increased by nearly 38 percent from 2007 to 2013. Degree production in the fields of engineering and related technology (27 percent), health (29 percent), and all other STEM fields as a group (44 percent) also grew substantially. However, gaps between degree production and employer demand at the baccalaureate level still persist in key fields. In computer and information science, the projected demand gap exceeds the current rate of degree production by 94 percent. Demand in this field is fairly strong across the spectrum, but some occupations stand out. Jobs for software developers represent 42 percent of projected openings, followed by computer programmers (17 percent) and systems analysts (10 percent). Demand in engineering also remains fairly high across all areas of specialization.

At the graduate level, the largest gaps are in computer science and health occupations. In computer science, the same occupations are driving demand that are seen at the baccalaureate level. In the top group, job openings for software developers represent 59 percent of the total, followed by openings for computer programmers (12 percent) and systems analysts (10 percent). In the health professions, 36 percent of projected openings are for physicians, surgeons, dentists, and pharmacists, while 48 percent are for advanced practice registered nurses, physical and occupational therapists, and medical technicians.

In K-12 education, Washington is facing a challenging teacher shortage, driven by a wave of teachers leaving the profession, a downward trend in teacher program enrollment and completions in the state, and pressures calling for class size reductions, among other factors.

*Mid-level includes individuals with at least a year of college but less than a bachelor's degree. The category includes associate degrees, long term certificates, and apprenticeship completers.

Background

Purpose of the Report

The purpose of this report is to provide an overview of the current status of workforce preparation in Washington; to identify high employer demand occupations, as well as fields in which academic degree production is failing to keep pace with demand; and to highlight occupation fields in which students may find expanding employment opportunities. This report focuses on projected workforce needs from 2018 to 2023.

The Washington Student Achievement Council (WSAC) prepares this analysis in collaboration with the State Board for Community and Technical Colleges (SBCTC) and the Workforce Training and Education Coordinating Board (Workforce Board), in accordance with statutory responsibilities specified in RCW 28B.77.080. This 2012 statute directs these agencies, as part of a broader educational needs assessment process, to analyze "the number of forecasted net job openings at each level of higher education and training, and the number of credentials needed to match the forecast of net job openings."

The report is also used in the state's broader educational planning. In 2013, WSAC issued *The Roadmap*, a ten-year guide for the development of a coordinated, long-term strategy to increase educational attainment in the state. It identified key challenges and priorities the state must address in the development of the plan. Among these key challenges were closing existing workforce skills gaps and meeting the demand for an educated workforce to complement Washington's modern, dynamic economy. A complementary strategic action plan is updated biyearly to monitor progress, adjust to changes in the landscape, and maximize success.

Similarly, SBCTC and the Workforce Board use the report in their strategic planning, focusing on meeting Washington's needs for mid-level education. This includes meeting employer demand for graduates with middle-skills credentials through apprenticeships, certificate programs, and associate degrees.

Current Context

Overview of National Workforce Trends

Recent reports have commented on the ongoing economic recovery and its effect on employer demand, as well as national trends associated with the preparedness of college graduates for the workplace.

In the wake of a more robust economic recovery, waves of high-paying jobs with benefits are beginning to return. A new report from the Georgetown Center on Education and the Workforce highlights the fact that, after several years of slow growth following the Great Recession, we are now seeing a surge in openings for good, high-paying jobs with benefits.[1]

The national unemployment rate is currently about 5.3 percent, a marked improvement since 2009, when the rate peaked at nearly 10 percent. The economy added 250,000 jobs per month in 2014, the best year in job growth since the beginning of the millennium. Job growth had fallen off slightly by the end of 2015, but has continued to advance steadily, adding more than 200,000 jobs per month on average.

Although many of the new jobs created in the early years of the recovery were at the low-wage level, the recent surge is for "good jobs" concentrated at the other end of the scale.

Georgetown Center on Education and the Workforce

The authors stress that, although many of the new jobs created in the early years of the recovery were at the low-wage level, the recent surge is for "good jobs" concentrated at the other end of the scale. They define good jobs as those that are in the upper-third by median wages of occupations in which they are classified. A majority of these jobs are full-time (86 percent), offer health insurance (68 percent), and provide an employer-sponsored retirement plan (61 percent). High-wage jobs have grown the most in this recent surge. Overall, of the 6.6 million jobs added during the recovery, 2.9 million were good jobs, compared to 1.8 million low-wage jobs and 1.9 million middle-wage jobs.

Almost all of these good jobs have gone to college graduates. This is good news for students working toward degrees, but this study also shows that most of these new job openings have been in a relatively narrow range of fields. Out of the 2.9 million good jobs created since the recovery, 2.8 million (97 percent) have been filled by workers with at least a bachelor's degree. Jobs for managers; science, technology, engineering, and mathematics (STEM) workers; and healthcare professionals account for the majority of good jobs in the recovery. In contrast, middle-wage jobs have not fully recovered from the recession. In spite of the 1.9 million middle-wage jobs added in the recovery, middle-wage occupations remain 900,000 jobs below their prerecession employment levels. Low-wage jobs have recovered all recession-related job losses (800,000 jobs above their pre-recession employment), but in 2015 are still growing at a slower rate than good jobs as defined in the study.

These findings run counter to common media perceptions, which have been dominated by stories concluding that we are mired in a low-wage, part-time jobs recovery. The authors point out that the conclusions of their analysis differ from the picture portrayed in media stories mainly because, when grouping jobs, they focus on occupations rather than on industries. Occupational groupings yield a more accurate view. An industry refers primarily to the employers and the kinds of products and services they produce, whereas an occupation classifies a specific set of activities performed on the job. If only the industry average earnings are used to sort jobs, then everyone from the CEO to a janitor who works at the same firm is assigned the same average pay. Yet the skills required and the wages paid are vastly different among workers who are employed in different occupations within the same industry.

A recent national employer survey conducted by Michigan State University's College Employment Research Institute (CERI)[2] provides another view of this trend. The authors report that "employers are recruiting new college graduates at levels not seen since the dot-com frenzy of 1999-2000." The report shows that several drivers are influencing the college labor market. Sixty-six percent of employers indicated growth was very important for their hiring. Growth as an engine of change in both companies and the labor market has reached its highest level since 2008. Three years ago employers rarely talked about turnover; workers wanted to keep the jobs they had. But in 2015, 45 percent of employers reported turnover as an important consideration in the number of new graduates that they will seek. Twenty percent of employers indicated retirement influenced their hiring decisions. The percentage may seem small but represents employers that cannot tap easily into global labor markets (e.g., educational services, government, retail, transportation, and utilities.)

The demand for workers with postsecondary education is expanding as the country shifts to a post-industrial service economy. Another report by researchers at the Georgetown University Center on Education and the Workforce[3] analyzes the continuing national shift from an industrial and manufacturing economy to a high-skilled service economy. They track this trend over the last several decades. In the current environment, more college-educated workers are in demand but not enough are graduating. The report chronicles the changing dynamics of the workplace and the premium placed on education beyond high school, as we continue our push into a post-industrial service economy.

In 1947, nearly half of U.S. workers were employed in goods-producing industries (i.e., manufacturing, mining, agriculture, and construction). By 2007, that share had dropped to less than 19 percent of the workforce. Those numbers seem to prove that our economy is out of balance and to confirm fears that the good manufacturing jobs of the past are being replaced with low-paid, dead-end service jobs. But many of the findings in this report contradict those fears. The percentage of U.S. workers with high-skill, high-wage jobs is actually larger today than ever before. In addition, the education level of the American workforce has increased dramatically over the past four decades. In the 45 years between 1967 and 2012, the proportion of high school dropouts fell from 38 percent of working-age adults to just 10 percent, while workers with at least some postsecondary education went from one-quarter to 61 percent.

Perhaps the most telling evidence of the growing importance of college-educated workers is their rising contributions to total earnings relative to their share of the workforce. In 1967, people with Bachelor's or graduate degrees represented a little more than 10 percent of the workers and a little more than 20 percent of the wages. More than 70 percent of all workers had high school diplomas as their highest level of educational attainment and generated more than 60 percent of all earnings. By 2012, workers with a bachelor's degree or higher- grew to more than 30 percent of the workers and produced more than half the earnings in the economy. The share of high school workers had fallen below 40 percent of all workers and their share of earnings had fallen below 30 percent.

This is a remarkable upgrading in the skills and earnings share for employees with at least some college. Demand is high for these elevated levels of skill and employers are paying substantially more for workers with postsecondary education. The college wage premium – the difference between the average wages of college- and high school-educated workers – has increased substantially since the 1970s. In 1979 the wage premium was just 36 percent for both male and female workers. It has grown steadily until reaching its maximum level in 2007 with the male premium at 82 percent and the female premium at 75 percent.

In the country's ongoing shift from an industrial economy based on production to a more complex system that values variety, customization, technology, and innovation . . . college-intensive business services have replaced manufacturing as the U.S. economy's largest industry cluster.

Georgetown Center on Education and the Workforce

The authors emphasize that contrary to conventional wisdom, the good jobs in the middle haven't been "hollowed out" by the collapse in manufacturing. The labor market for middle-skill workers remains robust. The share of low-skill jobs in the economy, however, has been steadily declining. The U.S. economy's largest and fastest growing sectors – business services, finance, healthcare, and education – offer very few jobs for high school-educated workers. The increasing technological sophistication of our economy has only increased the demand for educated workers who can utilize that technology. As employers have bid up the price for college-educated workers, the real wages of high school-educated workers have fallen.

College-intensive business services have replaced manufacturing as the U.S. economy's largest industry cluster. This includes jobs in consulting, accounting, management, legal services, and finance. In 1967, manufacturing was responsible for 31 percent of all value added in the economy and now it is 16 percent, while the business services sector has expanded from 12 percent to 26 percent of the economy. The report outlines the fundamental shift from an industrial economy based on production to a more complex system that values variety, customization, technology, and innovation. This has driven demand for more educated workers, even those with some postsecondary training needed for middle-level jobs that often involve deeper and broader sets of skills.

Nearly half of all U.S. jobs are at the middle skill level. Although current trends reveal a strong surge in job openings for high-skilled positions at the bachelor's level or above, demand for skills at the mid-level remains robust. Middle-skill jobs, those that require more than a high school diploma but less than a four-year degree, now comprise about half of all U.S. jobs. They generally offer solid wages and pathways to advancement. But in many cases, employers are finding mid-level positions difficult to fill even when overall unemployment remains high. National reports have projected that nearly 50 percent of job openings will be at the middle-skill level through 2022. [4]

A 2015 report by the U.S. Department of Education on projected employment, skills gaps, and training needs within the transportation industry over the next 10 years provides an illustrative example.[5] According to this report, transportation industry employers will need to hire and train roughly 4.6 million workers, an equivalent of 1.2 times the current workforce, to meet the needs of growth, retirement, and turnover in the next decade. The greatest demand lies in semi-skilled and skilled jobs in operations and maintenance. The authors estimate that "for every future job opening in central services or construction in the transportation industry, there will be an estimated two jobs in maintenance and 21 in operations."

Technological advances are revolutionizing many industries, transforming the nature of employee tasks, the kind of activities they engage in, and their responsibilities.

In a 2014 employer survey conducted by Accenture, 73 percent of employers expected their need for middle-skills jobs to grow.[6] Among survey respondents, 56 percent found middle-skills jobs hard to fill, with finance and insurance (68 percent) and healthcare (54 percent) companies experiencing the greatest challenges. Fully 69 percent of the overall sample and over 70 percent of the largest companies (those with revenues greater than $2 billion) indicated that their inability to attract and retain middle-skills talent frequently affected their performance. Over one-third of respondents believed that inadequate availability of middle-skilled workers had undermined their productivity, with manufacturing (47 percent) and healthcare (35 percent) the hardest hit.

Employers remain concerned about deficiencies in the soft skills of college graduates. Consistent with previous studies in recent years, a 2014 survey of senior executives conducted by the Economist Intelligence Unit, sponsored by the Lumina Foundation, revealed continued widespread concern among employers about worker preparedness across the entire skill spectrum.[7] Employers consider both hard and soft skills to be valuable but consider the most important to be critical thinking and problem solving (72 percent of executives select this as one of their top three), collaboration and teamwork (63 percent), communication (54 percent), the technical skills associated with specific jobs (54 percent), and adaptability and the managing of multiple priorities (48 percent).

This study concludes that U.S. employers' concerns about these "soft skill" deficits are rising because these are the skills that are becoming increasingly necessary to flourish in our expanding post-industrial service-based economy. Technological advances are revolutionizing many industries, transforming the nature of employee tasks, the kind of activities they engage in, and their responsibilities. Manufacturing, once focused on the mass production of standardized goods, has come to be dominated by companies whose fortunes rest instead on variety and constant innovation. In many cases, the actual manufacture of goods, the one-time bedrock of the U.S. economy, now represents only a fraction of the cost of an item and is often outsourced abroad.

Amid the shift to a post-industrial, service-based economy, working environments are now requiring more and more collaboration, rather than the performance of repetitive tasks or the operation of machinery. Thus, we have seen the rise in both the necessity of and demand for skills in critical thinking and flexible problem-solving, collaboration and teamwork, and effective and timely communication. At all career levels, employees are increasingly required to integrate knowledge from a number of areas and work in teams to find innovative solutions to problems.

Washington ranks fourth among states in adapting to the demands of the new innovation economy. In a 2014 nationwide state comparison conducted by the Information Technology and Innovation Foundation—a nonprofit think tank focusing on the nexus of public policy and the emerging innovation economy—Washington ranked high in factors essential to vitality in the changing economic landscape.[8] The study examined how states compare in a wide range of economic and workforce characteristics, such as the percentage of knowledge-centered jobs, economic dynamism as reflected in numbers of new business startups and patents granted, use of digital technology in the workforce, numbers of jobs located in the technology sector, and the extent to which companies have a globalized export orientation for products and services.

Regionally, the leading states were clustered in the Northeast, the mid-Atlantic, the Mountain West, and the Pacific. All three states along the Pacific coast, four of five in the Mid-Atlantic, and four of six states in New England made the top 15. Washington ranked fourth overall, among the elite bracket that included Massachusetts, Delaware, California, and Maryland. Washington ranked second in information technology jobs; fifth in managerial, professional, and technical jobs; third in export focus of manufacturing and services; and seventh in fastest-growing firms.

Washington faces challenges related to its dynamic STEM-driven economy. Washington has the advantage of possessing a dynamic economy driven largely by its growing technology sector, with leading companies in fields such as aerospace, electronic commerce, information technology, clean energy, and biomedicine. This widespread and expanding technological environment poses special challenges in aligning the state's education and career training system with the workforce needs of its employers. It requires a focus on STEM education to effectively meet workforce demand.

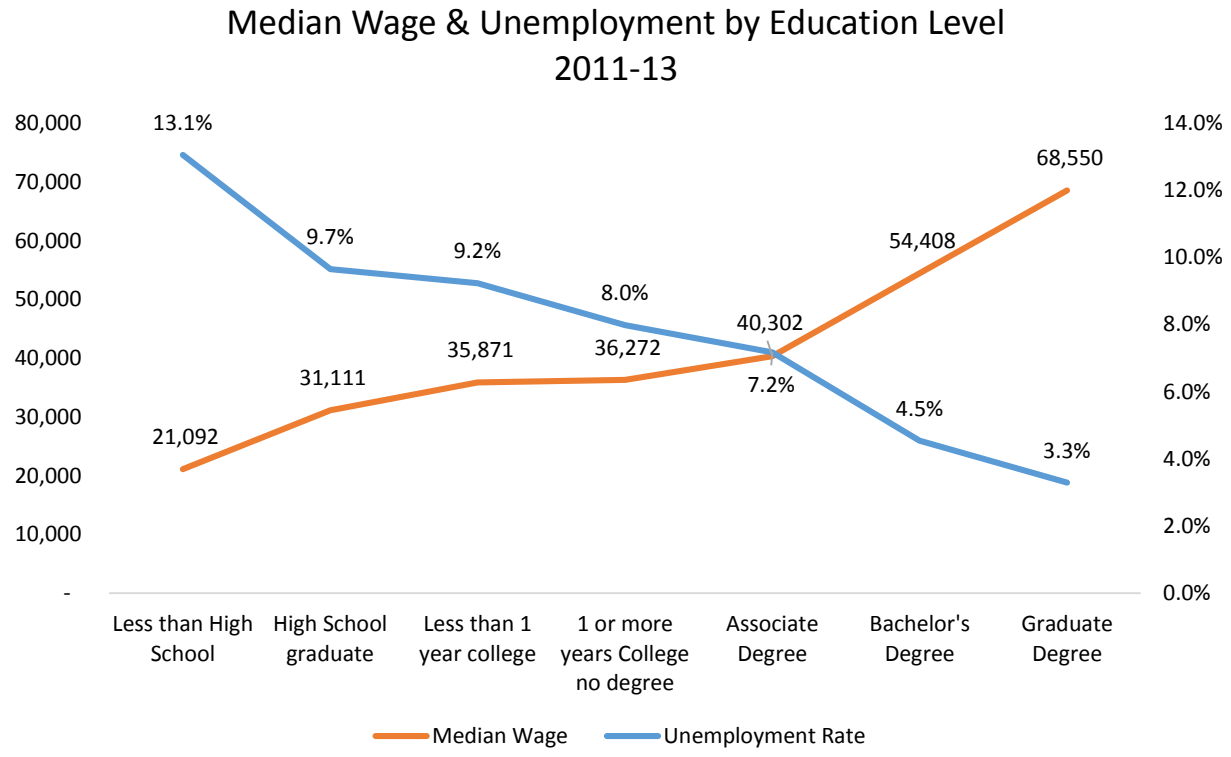
A recent report by the Washington STEM Education Innovation Alliance highlights these challenges.[9] The creation of the STEM Alliance was proposed by Governor Inslee and approved by the Legislature in 2013. The Alliance brings together leaders from a broad range of business, labor, industry, education, and nonprofit organizations to build effective industry-education partnerships and to advise on strategic planning STEM education initiatives. The report notes that Washington is among the elite states in the areas of innovation and research development, has one of the highest proportions of STEM jobs in the nation, and is one of the largest importers of technology degrees as a proportion of the population. But the state also ranks low in the production of degrees in key technology fields, such as computer science and others.

The effects of this STEM education challenge will be seen in much of the following analysis. STEM plays an important role at all education levels, from middle-skills credentials through graduate degrees.

Key Indicators of Demand: Wage, Unemployment, and In-Migration Rates

Two important indicators of the demand for educated workers are 1) the effect of educational attainment levels on wages and unemployment rates and 2) the rate of in-migration of educated workers to Washington from other states and nations. In Washington, mirroring national trends, we see a stable and consistent relationship between these indicators and education level. On average, earnings tend to rise and unemployment rates decline with additional years of formal training and education (see Figure 1). With that said, both of these indicators also show significant variation by occupation and major field of study.

Figure 1

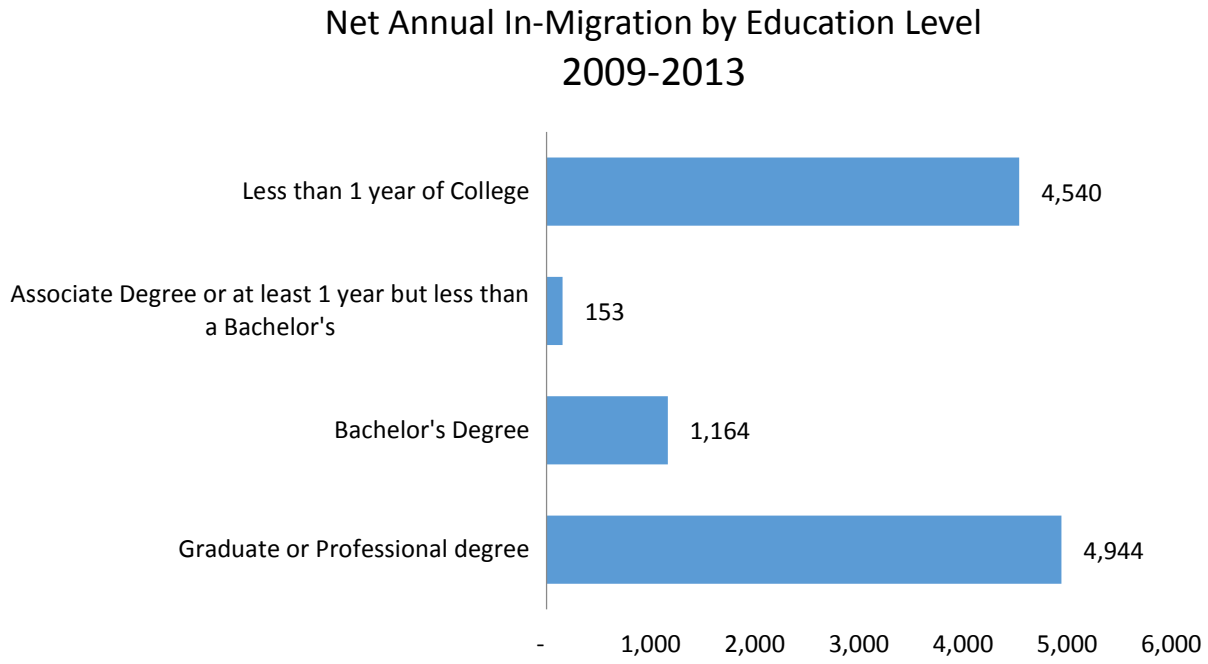


Source: 2013 American Community Survey. Wages Include civilian employed WA residents age 25-64. Unemployed rate reflects civilian labor force for WA residents age 25-64.

Washington is a growing state, so in-migration is generally expected. However, Washington continues to rely heavily on workers trained in other states and nations to meet the needs of the economy, particularly at the higher educational levels. Between 2009 and 2013, Washington annually attracted a net of almost 1,200 workers each year at the bachelor's level, and over 4,900 at the graduate level, from other states.

The results of a Washington State population survey showed that nearly two-thirds of working adults who moved to Washington did so for job-related reasons.[10] Moreover, analysis by the Workforce Board of H1-B visa petitions shows that, in 2010, Washington employed 17,800 H1-B visa holders. The majority of new visa activity (approximately 75 percent) was to meet demand for computer and mathematical occupations.

Figure 2



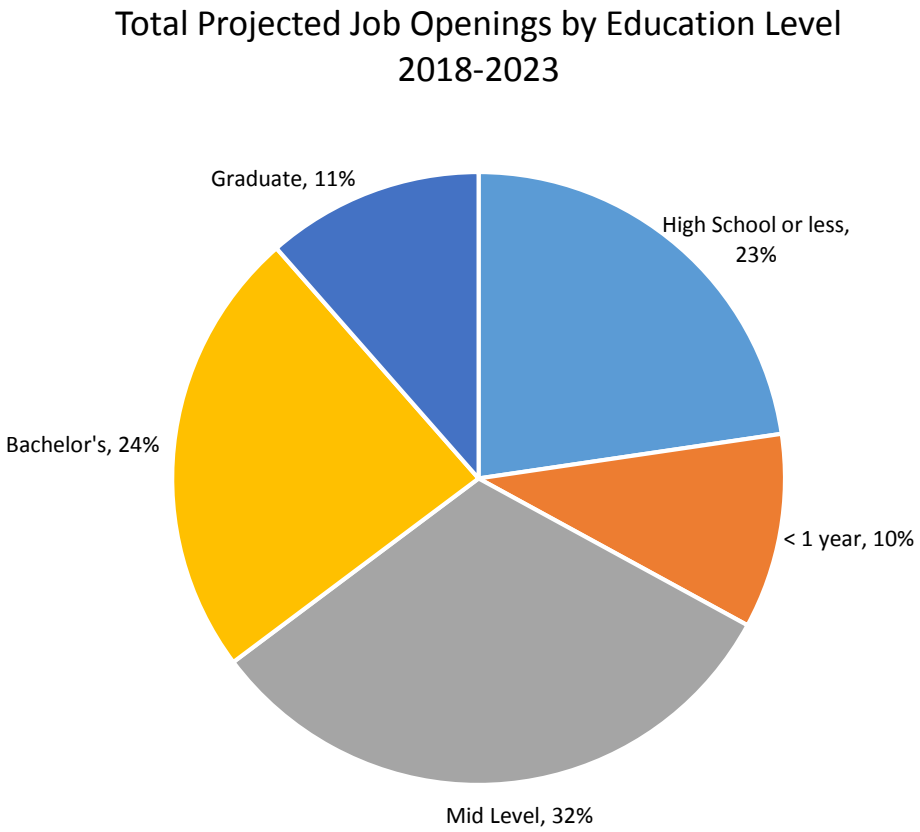
Source: WSAC Staff Analysis of 2009-2013 American Community Survey Data

These trends help set the context for the analysis of supply and demand of educated and trained workers in Washington. It should be noted, however, that although in-migration has been a key source of talent in Washington over the last two decades, in-migration was not included in the supply analysis for this report.

Overall Supply and Demand Outlook by Education Level

Employment projections in the state of Washington for the period from 2018 to 2023 show a robust demand for workers with postsecondary education. The trend toward increasing complexity in the workplace and the need for more skilled and educated workers that were observed in recent national studies are clearly reflected in Washington's employment outlook. The vast majority of all job openings (77 percent) will require at least some education beyond high school, with 67 percent requiring at least a year or more of postsecondary training.

Figure 3



Source: Washington State Employment Security Department, Long-Term Employment Forecast

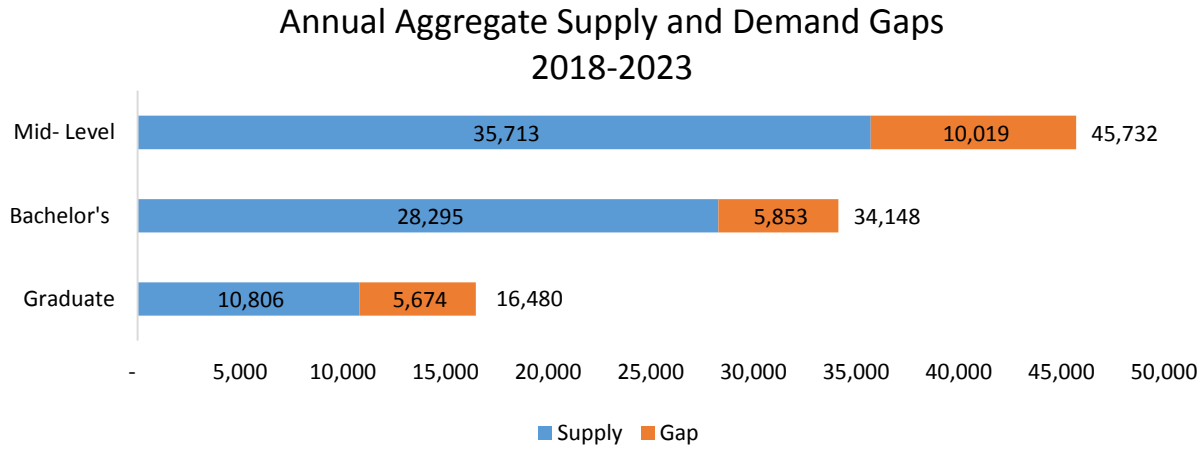
Thirty-two percent will call for workers educated at the mid-level. This category includes postsecondary education leading to an apprenticeship, one year or more of postsecondary education, training certification, or an associate degree.

Demand for workers with bachelor's and graduate degrees is also projected to be strong. Thirty-five percent of employment opportunities will be aimed at workers who have bachelor's degrees or above, with 24 percent of openings requiring a baccalaureate and 11 percent requiring graduate level education.

Overall Gaps Between Supply and Demand

To assess how well the state's higher education system is responding to employer workforce needs and how well it is preparing residents to compete for employment opportunities, we compare total supply at three levels of education against the projected demand for workers trained at those levels. For the years 2018–2023, Figure 4 below shows the estimated current annual supply of workers educated at each level in blue and the additional numbers of workers that will be needed to meet projected employer demand in orange.

Figure 4



Source: WSAC, WTECB, SBCTC joint analysis of 2015 Washington ESD long-term employment forecast; Bureau of Labor Statistics Training levels; IPEDS; 2014 Census PUMS data.

The supply figure was calculated by using the annual number of degrees completed at each level, adjusted to estimate the number of graduates expected to enter the workforce (See the appendix for more detail on the analytical methodology).

The largest skills gap is seen at the mid-level. There were an estimated 35,713 completers entering the workforce in 2013 with middle-skills education. But an additional 10,019 workers will be needed annually to meet the state's employer workforce needs. This number represents nearly 22 percent of anticipated mid-level demand.

Anticipated supply also falls short of projected workforce demand at the other education levels. At the baccalaureate level, over 17 percent of demand is anticipated to be unmet by the number of annual completers entering the workforce. For workers with graduate degrees, the percent of demand unmet by supply, at over 34 percent, is the highest of the three levels.

High Employer Demand Fields

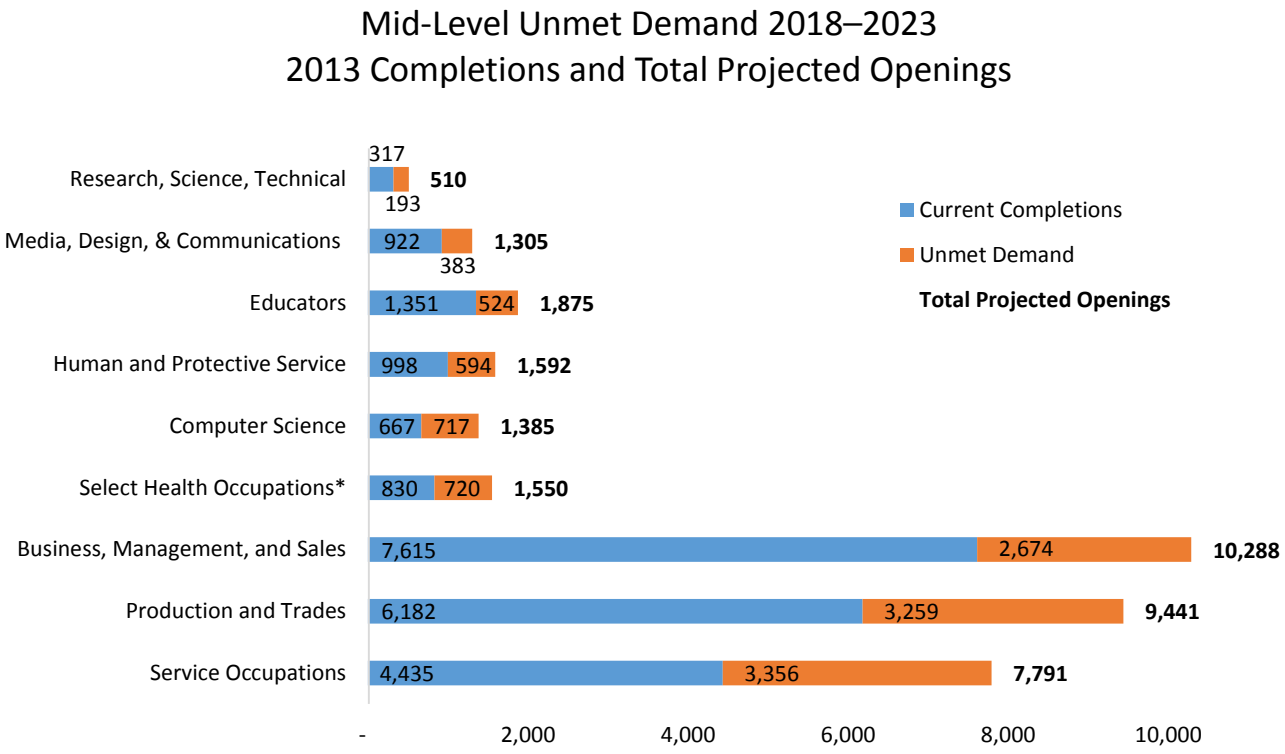
Mid-Level

The mid-level supply includes two-year degree graduates. It also includes completers of long-term certificates and apprenticeships from the community and technical colleges and private career schools.

Major occupational groups for which current supply will not meet projected demand are shown in Figure 5. Business, management, and sales occupations did not appear in the 2013 report. At the mid-level, they are led by jobs in accounting. The production and trades category includes jobs such as auto and diesel mechanics and machine tool technicians. Service occupations include management jobs in both culinary and hospitality industries. In the next tier, education includes training for teacher assistants and early childhood educators. Human protective services include firefighters, criminal justice, and law enforcement. Computer science encompasses graduates trained for jobs like database administrators and analysts.

In past reports, the mid-level analysis was focused on a subset of selected occupations that had been historically salient. For this 2015 update, the first comprehensive review of supply and demand at the mid-level was conducted. As a result, inclusion of mid-level occupations in this report is done at a group level with the exception of selected health occupation shortages. With this new approach, some groups highlighted in this report are different from those in the 2013 report.

Figure 5

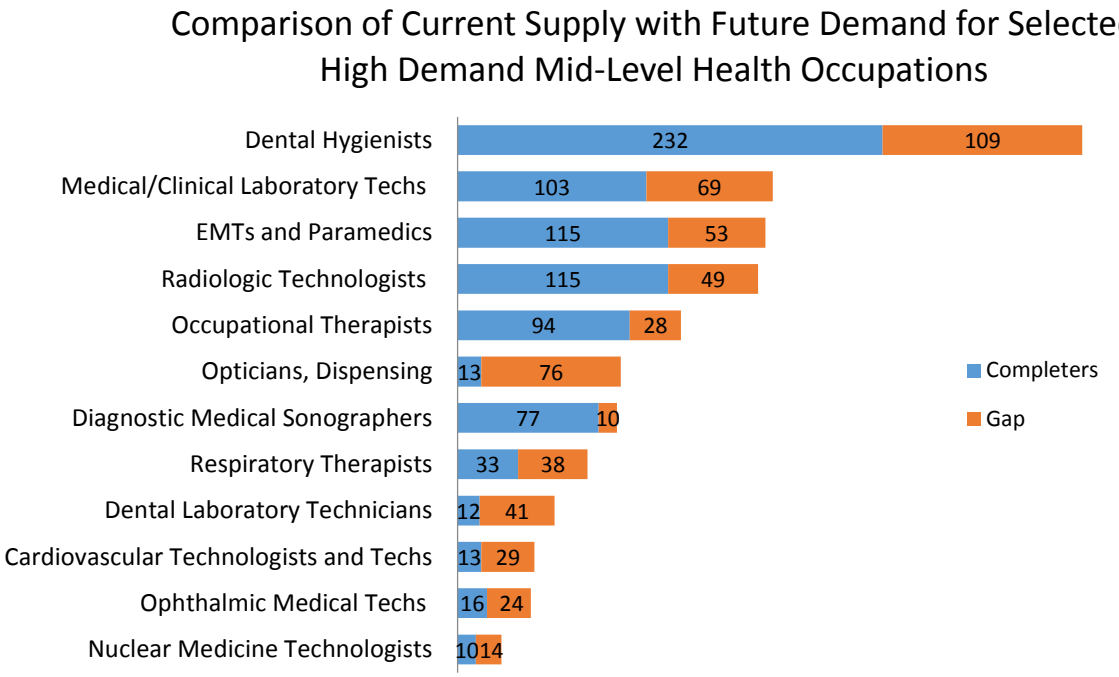


Source: WSAC, WTECB, SBCTC joint analysis of 2015 Washington ESD long-term employment forecast; Bureau of Labor Statistics Training levels; IPEDS; 2014 Census PUMS data.

Selected Health Occupation Shortages. Because most health occupations have specific qualifications, the analysis of supply and demand in most cases can be conducted at the individual occupation level. The Health Workforce Council—comprising leaders from a range of healthcare stakeholders—produces an annual report that identifies gaps in healthcare jobs. That report was the basis for inclusion of select healthcare shortages in the 2013 version of this report. The 2015 Annual Healthcare Report prepared by the staff of the Workforce Board on behalf of the Council was the source for identifying mid-level demand in this 2015 update.[†]

[†]The Healthcare Council's report can be found online at http://wtb.wa.gov/Documents/2015HealthWorkforceCouncilReport-Final.pdf

Figure 6



Source: WSAC, WTECB, SBCTC joint analysis of 2015 Washington ESD long-term employment forecast; Bureau of Labor Statistics Training levels; IPEDS; 2014 Census PUMS data.

Overall, the healthcare field remains a focus of high demand at the mid-level in the 2015 report (see Figure 6). Registered nursing has the largest average annual openings from 2018 to 2023. This is consistent with past years where nursing has appeared on high demand lists. Like this report, the Health Workforce Council also relies on a gap analysis to identify healthcare shortages. One of the big successes of the past several years has been the ramp-up in nursing graduates to meet demand. In fact, the 2015 report shows that the gap between supply and demand appears to have closed for nurses.

While their gap analysis suggests there are sufficient graduates to meet demand, the Health Workforce Council also did a case study of registered nursing that pinpoints uncertainties not revealed in the data for retirements, changes due to the demands of the Affordable Care Act, and changes within nursing preparation. Based on this case study, the report concludes that it is too soon to ascertain whether the gap in the supply has been permanently closed and that the supply of registered nurses is sufficient. Registered nursing remains on the mid-level demand watch list.

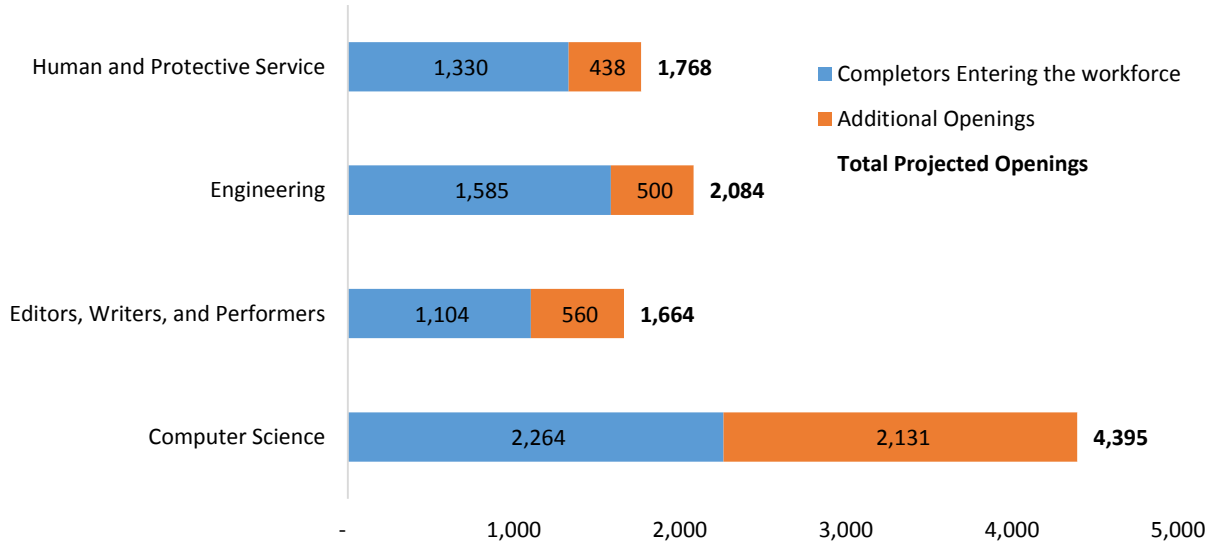
In addition to registered nursing, Figure 6 shows gaps in additional select healthcare occupations. Dental hygienist is the largest field, followed by medical/clinical laboratory techs, EMTS and paramedics, and radiological technologists. Shortages in these fields also appeared in the 2013 Skilled and Educated Workforce report, revealing a persistent trend.

Baccalaureate Level

The largest gaps at the baccalaureate level are in the fields of computer science, engineering, human and protective services, and for media, design, and communications specialists. Figure 7 shows the estimated number of completers annually entering the workforce in each of these fields in blue and the number of openings beyond this number representing additional graduates that will be needed to meet workforce demand in orange.

Figure 7

Baccalaureate Level Gaps – Estimated Completions and Projected Annual Openings 2018–2023



Source: WSAC, WTECB, SBCTC joint analysis of 2015 Washington ESD long-term employment forecast; Bureau of Labor Statistics Training levels; IPEDS; 2014 Census PUMS data.

Key Drivers of Demand. Consistent with previous reports on education and the workforce in Washington, the fields that figure most prominently in the supply and demand gap at the baccalaureate level are computer science and engineering. This reflects the prominent role that technology plays in the dynamic economic life of our state.

Computer Science. Growth and demand for computer science skills at the baccalaureate level are fairly robust across the spectrum. But some occupations stand out as especially strong drivers of demand. In the field of computer science, 49 percent of projected openings are for software developers, 17 percent are for computer programmers, and 10 percent are for computer systems analysts.

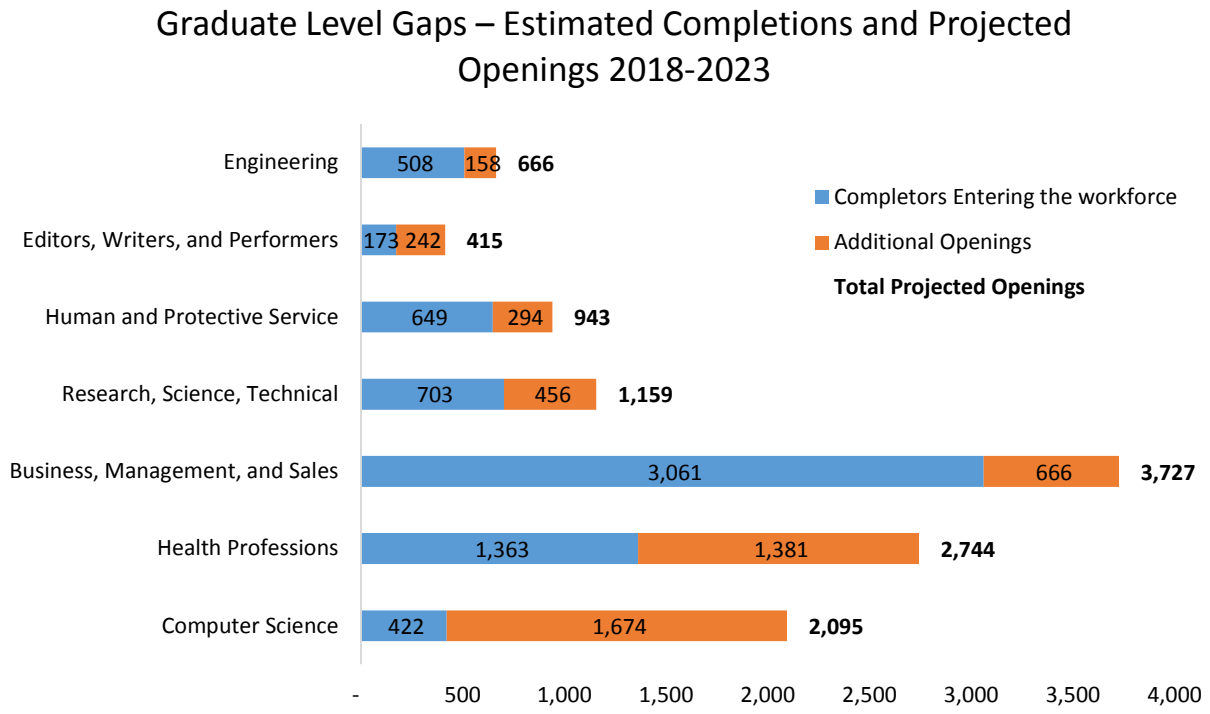
The deep demand for individuals with software development skills reflects the dynamic nature of Washington's computer and technology industries. Software developers analyze user needs and design software to perform a given range of required functions. This field includes systems software developers, who specialize in computer operating systems, and applications software developers, who focus on various applications, such as games, video editors, word processors, and databases. In general, computer programmers write code using the specifications that developers have designed. Thus, the healthy demand for software developers in the state reveals the strength of the underlying technical innovation that is driving the economy and the extent to which companies are incorporating digital technology in the workforce.

Engineering. Similarly, demand for engineers is fairly robust across all areas of specialization, but some areas stand out. Twenty-three percent of projected openings are for civil engineers. This, in part, is a reflection of the strong surge in construction the state is currently undergoing, accompanying a sustained upswing in the economic recovery. Rounding out the list of the occupations in the field with the highest employer demand at the baccalaureate level are mechanical engineering (13 percent), electrical and electronics engineering (12 percent), industrial engineering (11 percent), and aerospace engineering (9 percent).

Other Fields in Demand at the Baccalaureate Level. The projected gap in the human and protective services field is primarily driven by demand in a few key fields. In the top group, 20 percent of forecast job openings are for social workers, followed by counselors (14 percent) and social and human services assistants (13 percent). Employment growth in this field is primarily driven by increased demand for healthcare and social services. Social workers, for example, help people cope with a wide range of problems. They are employed in a variety of settings, including mental health clinics, schools, child welfare and human service agencies, and hospitals. One group of social workers—clinical social workers—also diagnose and treat mental, behavioral, and emotional issues.

Demand in the media, design, and communications occupational cluster is tied to the strength of Washington's technology sector as well as the expansion of business accompanying the ongoing economic recovery. Positions in the areas of multimedia art and animation, art direction, interpreting, translation, and technical writing account for the fastest growth in this field. Twenty-one percent of projected openings are for designers.

Figure 8



Source: WSAC, WTECB, SBCTC joint analysis of 2015 Washington ESD long-term employment forecast; Bureau of Labor Statistics Training levels; IPEDS; 2014 Census PUMS data.

Graduate Level

Key Drivers of Demand. By far the largest gaps at the graduate level are in computer science and the health professions, as shown in Figure 8. Other areas with substantial gaps are business, management, and sales; research, science, and technical; engineering; human and protective services; and editors, writers, and performers.

Computer Science. Computer science is also a prominent field among those showing skills gaps at the graduate level. Within this general field, the same occupations that predominate at the baccalaureate level lead the demand. At the graduate level, job openings for software developers stand in even higher relief, representing 59 percent of the total. Employment opportunities for computer programmers (12 percent) and computer systems analysts (10 percent) round out the top group.

The higher demand for software developers at the graduate level probably reflects the hierarchical nature of the profession. In general, software developers operate at a higher level. They design the software and computer programmers write code to their specifications. Given a strong need for individuals in this area, employers tend to prefer those with graduate-level training. However, even though a few specific occupations in the field tend to lead the pack, demand remains strong across the spectrum in computer science.

Health Professions. Consistent with analysis done in 2013, the current data show a fairly narrow supply-demand gap for the health professions at the baccalaureate level. Forty-nine percent of projected openings at the baccalaureate level are for registered nurses.

However, as shown in previous reports, persistent gaps remain at the graduate level for health professionals. Nearly 20 percent of projected openings are for physicians and surgeons. Other occupations that figure prominently in projected job openings include physical and occupational therapists (15 percent), pharmacists (9 percent), and dentists (7 percent).

Registered nurses and nurse practitioners are also in demand at the graduate level for positions with advanced practice responsibilities. Nurse practitioners are qualified to diagnose medical problems, order treatments, perform advanced procedures, prescribe medications, and make referrals for a wide range of acute and chronic medical conditions within their scope of practice. They perform vital functions that fill an important need for primary medical care as healthcare demand continues to expand in Washington.

A 2014 report by the University of Washington Center for Health Workforce Studies highlighted supply and demand gaps for physicians in the state, particularly in rural areas.[11] The report noted that Washington's overall physician supply, on a per capita basis, is generally comparable to national averages. But significant differences in distribution are apparent between urban and rural areas of the state. Rural areas, particularly in the eastern part of the state, are experiencing serious shortages of physicians, in both generalist and specialist fields. Compounding this difficulty is the fact that more than half the physicians in many rural communities are currently age 55 or older and are expected to retire in the near future.

The 2015 Annual Report by the Health Workforce Council emphasizes studies showing that the location where physicians complete their residency is the strongest predictor of where they will choose to practice.[12] For this reason, the Council stresses the importance of increasing slots for in-state residencies, with special attention paid to underserved areas in rural parts of the state.

Other Fields in Demand at the Graduate Level. Projected openings in the business, management, and sales field at the graduate level are highest for management analysts, accountants, and auditors. The gap in this area is likely due in part to currently steady economic growth and a steep rise in business activity after a prolonged period of stagnation and decline during the Great Recession. Projected openings for general and operations managers, accountants, and auditors represent 18 percent of the total. Openings for business operations specialists, general and operations managers, and market research analysts account for another 18 percent.

Moderate gaps in the research, science, and technical occupational cluster have been shown in previous analyses conducted over the last decade. Current analysis reveals that this trend persists. Forty-eight percent of projected openings are in the areas of life science, environmental and geoscience, and biological science. The demand in this area stems in part from the vitality of Washington's growing biotechnology industry.

Education and the Teacher Shortage: An Emerging High Demand Field at the Baccalaureate and Graduate Levels. Education does not appear as a high employer demand field in the above analysis, primarily because the methodology is based on historical trend data. For this reason, the effects of high-impact, short-term activity—such as decisions by large employers regarding expansion, contraction, or relocation of facilities, or recent major shifts in public policy—are not apparent.

One such effect is class size reduction in response to the Washington State Supreme Court's McCleary decision on public education funding and reform, which directed the state to address the implementation plan for K–3 class size reduction and full-day kindergarten outlined in Substitute House Bill (SHB) 2776. As a result of this decision and related legislation, sharply increased demand for more elementary school teachers is anticipated. Moreover, the decision fostered political pressures for further measures, such as voter-approved Initiative 1351, which reduces class sizes for all grades. So there is anticipation of increased demand for teachers at the middle school and high school levels down the road as well.

Compounding the pressure for more teachers caused by class size reduction is an anticipated need to replace a large wave of teachers who are in the process of leaving the system. A recent analysis conducted by the State of Washington Professional Educator Standards Board (PESB) reports that a large number of teachers are either currently leaving the profession or are anticipated to leave in the near future.[13] Many of those in the process of leaving are teachers who had postponed retirement or otherwise delayed plans to move, having stayed longer than intended in their positions for the duration of the recession. Adding to this challenge is a downward trend in teacher program enrollment and completions in the state.

PESB also produced a report assessing the state's capacity to meet the increased demand for elementary school teachers stemming from SHB 2776 and the McCleary Supreme Court decision.[14] Washington currently has 21 approved teacher preparation programs, and about 1,500 students complete programs in teaching at the elementary school level in a typical year. But only about 60 percent of those completers continue on to be hired in teaching positions in Washington during their first year. It is unknown how many are choosing not to enter the teaching workforce in Washington for some reason or how many are simply unable to find positions where they are willing to reside.

A 2015 teacher shortage survey[15] conducted jointly by the Office of Superintendent of Public Instruction and the Association of Washington School Principals highlighted teacher supply-demand gaps confronted by state school leaders. Ninety-three percent of principals reported that, even beyond the challenge posed by McCleary, they struggle to find and hire qualified teachers. Particular areas of concern are difficulties in: (1) filling vacancies in urban and economically disadvantaged schools and (2) finding qualified teachers in the areas of special education, elementary, math, and science. The survey also reports that there is currently a serious shortage of substitute teachers in the state, with a majority of school leaders describing the situation as a "crisis."

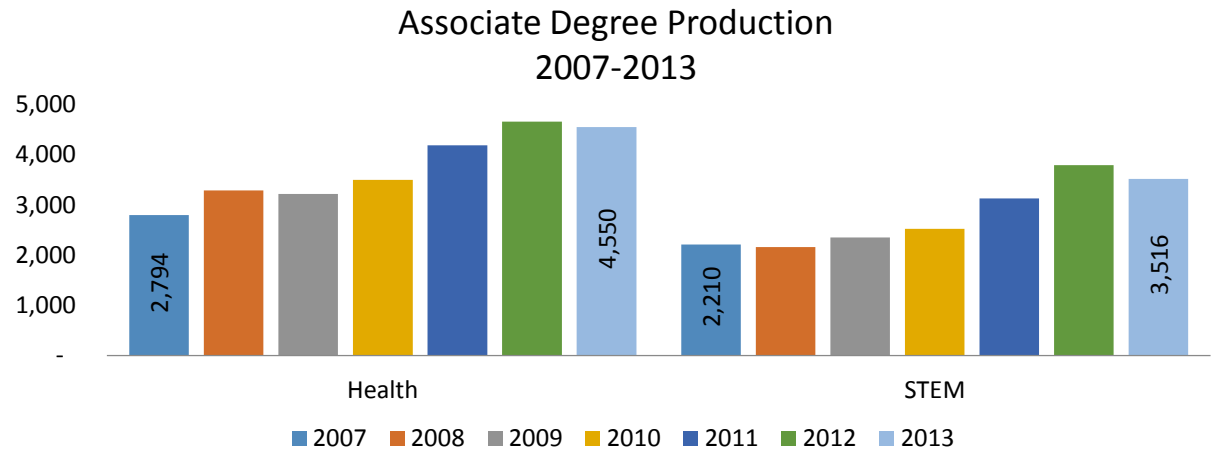
To address the teacher shortage challenge, PESB has recommended a multi-pronged approach. Several strategies could be pursued, including exploring ways to make the teaching profession more attractive, increasing the pipeline through recruitment efforts and scholarships, expanding alternative route programs for teacher certification, and broadening interstate teacher certification reciprocity agreements.

Closing the Gaps

Washington is home to many fine educational institutions that have laid the groundwork for postgraduate success for many students and prepared them for the opportunities and challenges of the state's dynamic economy and innovative employers. But the gaps between supply and demand in key occupational fields demonstrate that there is still room for improvement at all levels. Fortunately, our institutions provide a solid foundation on which further progress can be built.

Over the course of recent years, data indicate that continuous progress has been made in increasing degree and certificate production in high employer demand fields of study. Depending on the field and the educational level, progress in some areas has been more dramatic than others. But in all of these key fields degree production has moved in a positive direction during this time.

Figure 9



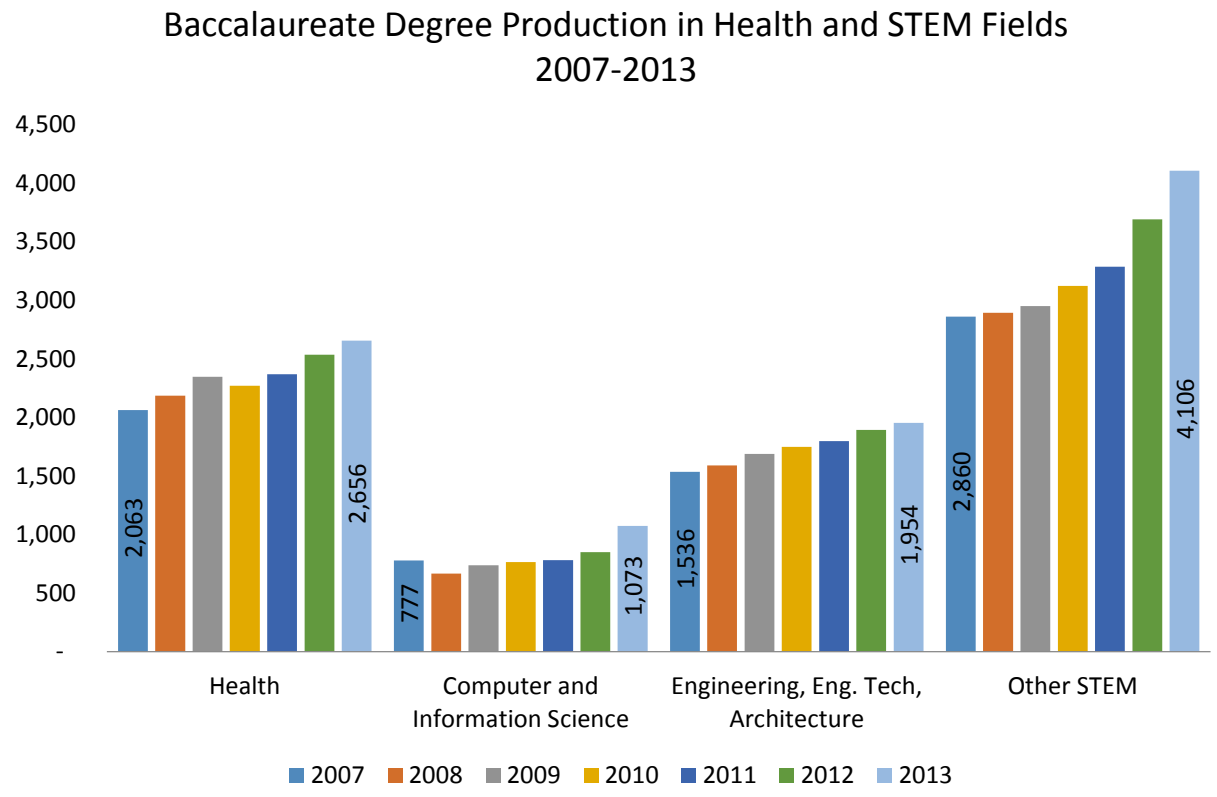
Source: Integrated Postsecondary Education Data System (IPEDS).

Mid-Level

At the mid-level, as shown in Figure 9, degree and certificate production in the health, computer science, engineering, and science and mathematics fields has increased fairly steadily from 2007 to 2013. The one exception is a slight dip in the year 2013. This is the result of enrollment increases during the recession years peaking in 2012. The following year saw a slight decline in enrollments as the economy was rebounding rapidly and large numbers of people were returning to work. Current indications show that enrollments are once again on the rise.

In the health occupations, production grew by 63 percent from 2007 to 2013. Progress in degrees and certificates granted in STEM fields overall also rose significantly, growing by 59 percent during this same period.

Figure 10



Source: Integrated Postsecondary Education Data System (IPEDS).

Baccalaureate Level

Figure 10 shows the trend at the baccalaureate level. Degree production in health, computer science, engineering, and other science and mathematics fields increased steadily over the last several years. In computer and information science, there has been consistent growth in degree completions, with a 38 percent increase from 2007 to 2013. Degree production saw gains in the fields of engineering and related technology (27 percent) and health (29 percent) during this period. Other STEM fields as a group grew by 44 percent.

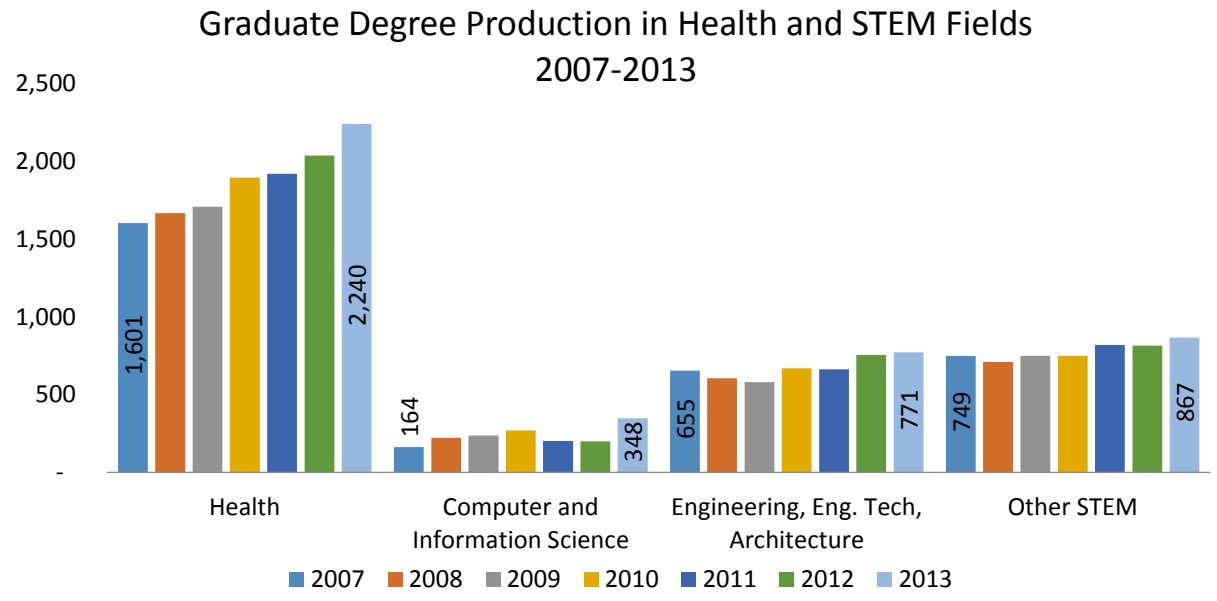
It should be noted that targeted funding for expanding STEM programs at Washington's public universities included in recent legislative budgets was instrumental in fueling successful gains in production. For example, in order to increase degree production in the STEM fields generally, the Legislature's 2012 budget reallocated over $9 million in targeted funding to the state's public universities and colleges. These funds were dedicated to expanding enrollments in engineering at the research universities and to expanding enrollments in science, technology, engineering, and mathematics fields at the regional institutions and the Evergreen State College.

A more recent example of this type of targeted allocation was a substantial increase in funding that was included in the 2013–15 operating appropriations for the express purpose of expanding enrollments in computer science and engineering. These funds, for fiscal years 2014 and 2015, were allocated to the University of Washington ($4,459,000 per year); Washington State University (2,856,000 per year); and Western Washington University ($1,497,000 per year). These expansions, however, tend to take time to develop. With these additional funds, the universities have been adding enrollments gradually over the past few years. Going forward, degree production will begin to increase as students move toward completion of program coursework.

Graduate Level

As shown in Figure 11, at the graduate level, the fastest growth in degree production occurred in the health sciences, with an increase of over 40 percent from 2007 to 2013. Steady growth occurred in computer and information science as well, with degree completions more than doubling during this period. Progress in engineering and related technology (18 percent) and the other STEM fields as a group (11.3 percent) experienced positive but more modest levels of expansion during this period.

Figure 11



Source: Integrated Postsecondary Education Data System (IPEDS).

Conclusion

Over the last several years, degree production in the health care professions has increased, largely due to a coordinated system-wide effort to invest in this field. However, substantial shortages still exist, particularly at the professional level. For example, rural areas, particularly in the eastern part of the state, are experiencing serious shortages of physicians, in both generalist and specialist fields. Adding to this challenge is the fact that many rural physicians in the state right now are 55 years of age or older and are expected to begin retiring in the near future. Studies have shown that the location where physicians complete their residency is the strongest predictor of where they will choose to practice. For this reason, action may need to be taken to increase slots for in-state residencies, with special attention paid to underserved areas in rural parts of the state. In 2015, in part to respond this challenge, the Legislature approved a budget that included funding to create a new Washington State University Medical School in Spokane. One of its primary missions will be to focus on training primary care physicians to work in rural and urban underserved areas. The medical school aims to begin enrolling students in 2017. Despite this ambitious effort, demand for health professionals, particularly at the graduate level, is likely to continue to warrant careful monitoring in the foreseeable future.

Current data show some progress in increased degree production in the computer science and engineering fields. Growth is seen at both the baccalaureate and graduate level. However, the rate of progress in these fields is still lagging behind surging demand. Workers with skills in this area are in demand at all education levels. More expansion will be required to meet the needs of our state's dynamic economy and provide more Washington residents with vital opportunities to compete for these high-skill, high-wage jobs.

Going forward, more detailed information from Washington's employers on the specific training and education levels they are actually seeking in applicants for various occupations could allow for more refined supply and demand gap analyses. Improved and expanded employer feedback mechanisms, through surveys and other available resources, could provide more in-depth understanding of precise employer needs in particular fields.

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Appendix A: Notes on the Analysis

The conclusions contained in this report were based on two primary measures: 1) *workforce supply*, estimates of the annual number of graduates entering the workforce by degree level and major field of study, and 2) *employer demand*, projections of the number of net annual job openings by sector and education level.

Workforce Supply

The analysis of workforce supply was grounded on degree production data from the Integrated Postsecondary Education Data System (IPEDS), which was adjusted to estimate the number of graduates expected to immediately enter the workforce. IPEDS compiles results from annual institutional surveys conducted by the National Center for Education Statistics. These surveys include data on enrollments and degree completions from every college, university, and technical and vocational institution that participates in federal student financial aid programs. Since not all graduates immediately enter the workforce, these completion figures must be adjusted to account for graduates who opt to continue their postsecondary education or postpone work for other reasons. These modified figures are necessary to arrive at realistic estimates of the number of graduates available to meet employer demand in a given period.

For the mid-level, IPEDS data was supplemented with administrative data from the Workforce Training and Education Coordinating Board to capture degrees and certificates awarded by schools operating in Washington but not reporting credentials in IPEDS for Washington, either because they do not participate in Title IV aid programs or because they are based out of state and report completions in their home state.

Workforce supply was adjusted using data from the 2011-2013 American Community Survey conducted by the U.S. Census Bureau, which includes the percentages of degree holders in this survey reporting that they were 1) enrolled and either unemployed or employed part-time, 2) enlisted in the military, or 3) not in the labor force. The data were used to estimate the percentage of degree completers that would not immediately be available to enter the workforce. For each degree level, the total number of completions was adjusted downward by the corresponding aggregate percentage.

Employer Demand

Employer demand was estimated using projected job openings from the Employment Security Department's long-term occupational forecast of total openings for 2016-2023, issued in May 2015. These employment outlook projections were matched against estimates of the training and education levels required for various occupational types, based on Washington Student Achievement Council staff analysis of U.S. Census Bureau data, reflecting actual education and training levels of survey respondents in various occupations, and adjusted based on Bureau of Labor Statistics education and training assignments by detailed occupation to establish a minimum training level.

Limitations of the Analysis

A few limitations of this analysis that could affect the gaps reported at each level should be noted. First, the report is not able to fully address the impact of new and emerging industries and occupations, due to restrictions in the methods of the Employment Security Department's long-range forecast. In addition, because of difficulties in obtaining accurate information in this area, the numbers do not reflect any adjustments to account for workers in jobs that may require more or less education than they currently possess.

In addition, because demand is based on openings and supply is based upon program completions, gaps may be understated in fields where a significant number of workers would complete a degree or certificate as a normal part of their ongoing professional development. For example, many practicing teachers will complete a master's degree and would therefore show up in supply; however, in most cases those teachers would not change occupations and therefore would not be available to fill an opening. This is further complicated by the fact that some teachers do receive their initial training at the master's level and are seeking to fill an opening in that occupation. We see similar issues in health care, particularly among practicing nurses who often train at the associate level but then later complete a bachelor's degree, and managers who may complete an MBA as part of their professional development for their current occupation.

Finally, the analysis is not intended to fully account for the overall dynamics of the current employment market for recent graduates as the economy recovers in the wake of the Great Recession. Instead, it is based on historical trends and a forward-looking perspective, with demand assessed upon projected future openings compared to current degree production and labor force participation rates.

Appendix B: Mid-Level Gaps – All Occupational Groups

Mid-Level	Completions	Supply	Demand	Gap
Administrative, Clerical	7,756	6,280.82	6,308	26.74
Business, Management, and Sales	9,404	7,614.68	10,288	2,673.73
Computer Science	824	667.50	1,385	717.13
Media, Design, and Communications	1,138	921.68	1,305	383.02
Educators	1,668	1,350.75	1,875	524.30
Engineering	791	640.84	388	(252.57)
Health Professions	7,155	5,793.56	4,664	(1,129.10)
Human and Protective Service	1,232	997.77	1,592	594.47
Legal	630	510.45	185	(325.88)
Production and Trades	7,634	6,181.97	9,441	3,258.93
Research, Science, Technical	392	317.20	510	192.80
Service Occupations	5,477	4,435.41	7,791	3,355.77
Total	**44,103**	**35,713**	**45,732**	**10,019**

Appendix C: Baccalaureate Gaps – All Occupational Groups

Bachelor's	Completions	Supply	Demand	Gap
Administrative, Clerical	3,378	2,857.82	3,138	280.00
Business, Management, and Sales	12,440	10,525.84	11,208	682.20
Computer Science	2,675	2,263.62	4,395	2,131.38
Media, Design, and Communications	1,304	1,103.52	1,664	560.37
Educators	2,408	2,037.26	2,212	175.04
Engineering	1,873	1,584.53	2,084	499.79
Health Professions	2,742	2,320.21	2,384	63.57
Human and Protective Service	1,572	1,329.88	1,768	437.87
Legal	268	226.36	109	(117.11)
Production and Trades	2,274	1,924.08	1,996	71.84
Research, Science, Technical	569	481.02	520	39.01
Service Occupations	1,940	1,641.12	2,670	1,029.00
Total	**33,442**	**28,295**	**34,148**	**5,853**

Appendix D: Graduate Gaps – All Occupational Groups

Graduate	Completions	Supply	Demand	Gap
Administrative, Clerical	261	227.16	566	338.39
Business, Management, and Sales	3,512	3,061.30	3,727	666.16
Computer Science	484	421.88	2,095	1,673.55
Media, Design, and Communications	199	173.08	415	241.83
Educators	3,152	2,747.60	3,001	253.60
Engineering	583	508.41	666	157.56
Health Professions	1,564	1,362.98	2,744	1,380.55
Human and Protective Service	745	649.04	943	294.22
Legal	856	746.39	606	(140.44)
Production and Trades	112	97.36	302	204.43
Research, Science, Technical	807	703.13	1,159	455.69
Service Occupations	124	108.17	256	148.10
Total	**12,399**	**10,806**	**16,480**	**5,674**

Links to relevant articles

1. Good Jobs Are Back: College Graduates Are First in Line – 2015
   By Anthony Carnevale, Tamara Jayasundera and Artem Gulish

https://cew.georgetown.edu/wp-content/uploads/Good-Jobs_Full_Final.pdf

2. Information & Communication Technology Economic and Fiscal Impact Study – February 2015
   By the Washington Technology Industry Association (WTIA)

http://washingtontechnology.org/wp-content/uploads/2015/04/ICT-Economic-Report.pdf

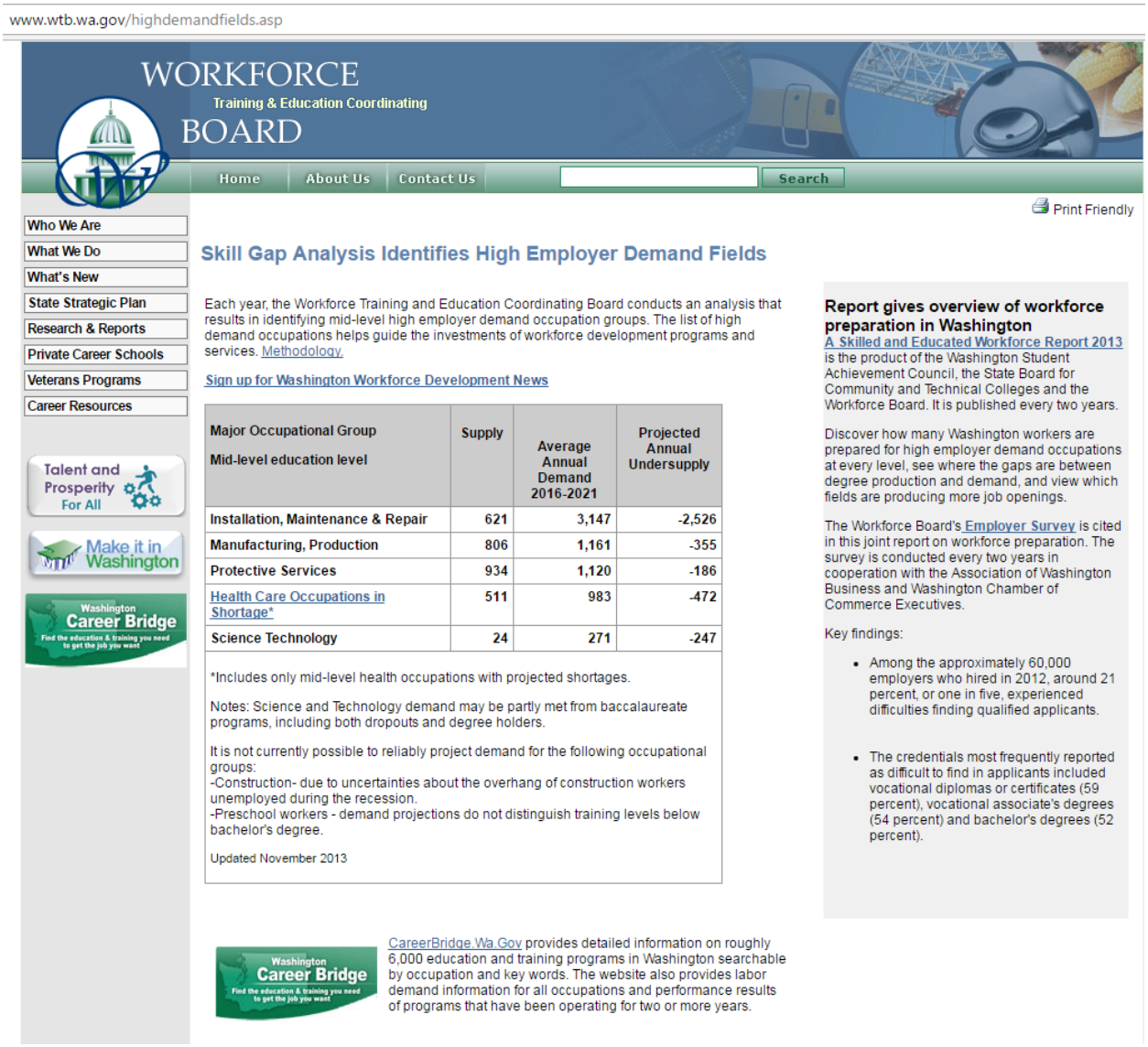
High Demand Jobs Which Require Lesser Than a BS/BA

The three links below provide reference information related to the existence of high demand jobs which require lesser than a BS/BA.

1. https://fortress.wa.gov/esd/employmentdata/reports-publications/occupational-reports/occupations-in-demand

   The Employment Security Department Washington State provides occupations which are in demand or not in demand. Using the link above, the user can select a specific occupational category and county to locate high demand jobs within Washington. The sample below features demand for Computer Science teachers in high schools across the state. The user can click on an occupation title to see a job description, wages, employment projections and educational requirements.

2. The Workforce Training & Education Coordinating Board provides an analysis on their website which results in identifying mid-level high employer demand occupation groups. See the snapshot below from this link to their website: http://www.wtb.wa.gov/highdemandfields.asp



www.wtb.wa.gov/highdemandfields.asp

WORKFORCE Training & Education Coordinating BOARD

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Talent and Prosperity For All

Make it in Washington

Washington Career Bridge — Find the education & training you need to get the job you want

Skill Gap Analysis Identifies High Employer Demand Fields

Each year, the Workforce Training and Education Coordinating Board conducts an analysis that results in identifying mid-level high employer demand occupation groups. The list of high demand occupations helps guide the investments of workforce development programs and services. Methodology.

Sign up for Washington Workforce Development News

Major Occupational Group Mid-level education level	Supply	Average Annual Demand 2016-2021	Projected Annual Undersupply
Installation, Maintenance & Repair	621	3,147	-2,526
Manufacturing, Production	806	1,161	-355
Protective Services	934	1,120	-186
Health Care Occupations in Shortage*	511	983	-472
Science Technology	24	271	-247

*Includes only mid-level health occupations with projected shortages.

Notes: Science and Technology demand may be partly met from baccalaureate programs, including both dropouts and degree holders.

It is not currently possible to reliably project demand for the following occupational groups:
-Construction- due to uncertainties about the overhang of construction workers unemployed during the recession.
-Preschool workers - demand projections do not distinguish training levels below bachelor's degree.

Updated November 2013

Washington Career Bridge — Find the education & training you need to get the job you want

CareerBridge.Wa.Gov provides detailed information on roughly 6,000 education and training programs in Washington searchable by occupation and key words. The website also provides labor demand information for all occupations and performance results of programs that have been operating for two or more years.

Report gives overview of workforce preparation in Washington

A Skilled and Educated Workforce Report 2013 is the product of the Washington Student Achievement Council, the State Board for Community and Technical Colleges and the Workforce Board. It is published every two years.

Discover how many Washington workers are prepared for high employer demand occupations at every level, see where the gaps are between degree production and demand, and view which fields are producing more job openings.

The Workforce Board's Employer Survey is cited in this joint report on workforce preparation. The survey is conducted every two years in cooperation with the Association of Washington Business and Washington Chamber of Commerce Executives.

Key findings:

- Among the approximately 60,000 employers who hired in 2012, around 21 percent, or one in five, experienced difficulties finding qualified applicants.
- The credentials most frequently reported as difficult to find in applicants included vocational diplomas or certificates (59 percent), vocational associate's degrees (54 percent) and bachelor's degrees (52 percent).

3. http://www.usawage.com/high-pay/jobs-state-washington.php

   USA Wage provides information on the top 200 highest paying jobs in Washington using the link above. The top 35 of those 200 highest paying jobs are noted below.

The top 200 highest paying jobs in Washington (ranked by annual average salary) are listed in Table 1. The entry level salary (as measured by the salary of the lowest 10% paid workers) and the number of employment of each job in Washington are also shown. We note from the table that the highest paying profession in Washington is *family and general practitioners* with an average annual salary of $182,140. The second highest paying job is *general pediatricians* (average salary $181,100). The salary and the employment information in Washington is computed from data published by U.S. Bureau of Labor Statistics in May 2015 [1].

Table 1. 200 Highest Paying Jobs in Washington

Rank	Job Description	Average Salary	Entry Level Salary	# of Empl
1	Family and General Practitioners	$182,140	$75,210	1,840
2	General Pediatricians	$181,100	$109,960	300
3	Psychiatrists	$178,340	$107,630	300
4	Other Specialists Dentists	$175,710	$127,920	130
5	General Dentists	$163,450	$67,800	2,250
6	Nurse Anesthetists	$161,800	$63,050	250
7	Architectural and Engineering Managers	$137,780	$95,940	0
8	Computer and Information Systems Managers	$137,570	$88,010	9,220
9	Petroleum Engineers	$130,410	$83,850	170
10	Marketing Managers	$129,680	$76,520	4,810
11	Natural Sciences Managers	$128,260	$84,700	1,770
12	Podiatrists	$127,870	$57,590	110
13	Postsecondary Health Specialties Teachers	$124,290	$64,530	3,360
14	Pharmacists	$121,110	$100,010	5,670
15	Purchasing Managers	$118,030	$67,440	1,850
16	Air Traffic Controllers	$116,990	$67,430	710
17	Computer Programmers	$116,190	$64,260	13,670
18	Applications Software Developers	$114,210	$73,530	48,890
19	Systems Software Developers	$113,490	$75,960	9,780
20	Compensation and Benefits Managers	$111,740	$67,200	290
21	Human Resources Managers	$109,470	$65,660	2,990
22	Advertising and Promotions Managers	$108,780	$51,250	650
23	Aerospace Engineers	$107,440	$71,170	8,540
24	Sales Engineers	$106,870	$61,430	1,220
25	Elevator Installers and Repairers	$106,720	$32,210	50
26	Environmental Science Teachers	$106,520	$51,430	70
27	Sales Managers	$106,430	$57,360	7,820
28	Physician Assistants	$106,090	$77,530	1,990
29	Elementary and Secondary School Education Administrators	$105,940	$79,750	4,220
30	Lawyers	$105,860	$60,530	10,690
31	Training and Development Managers	$104,270	$64,360	510
32	Optometrists	$104,240	$43,620	600
33	All Other Managers	$104,040	$58,880	7,370
34	Physicists	$103,970	$56,110	610
35	Electronics Engineers (Non Computer)	$103,600	$68,250	2,810

PATHWAYS TO GREAT JOBS IN WASHINGTON STATE

A REPORT FROM

WASHINGTON ROUNDTABLE

BCG THE BOSTON CONSULTING GROUP

Partnership for Learning
EDUCATION FOUNDATION of THE WASHINGTON ROUNDTABLE

WASHINGTON KiDS 4 WASHINGTON JOBS

INTRODUCTION:

The job market Washington students will enter in the coming years will be full of exciting opportunities. New technologies and globalization are leading to the creation of new jobs, new companies, and even new industries. They also are dramatically changing the way existing jobs get done and the skill requirements needed to be successful.

Amidst this environment of rapid change, Washington benefits from a strong and growing economy, the seventh-fastest growing in the nation, according to Kiplinger's. Our anchor employers are market leaders in information and communications technology, aerospace, health care, life sciences, online commerce, and precision manufacturing. Traditional stronghold sectors, such as trade, natural resources, agriculture, manufacturing, and services provide a vibrant and diverse employment mix.

The **Washington Roundtable** partnered with **The Boston Consulting Group** (BCG) to examine the state's five-year jobs outlook and shine a spotlight on the jobs that will be available and the pathways Washington students can take to pursue rewarding careers here.

There will be 740,000 job openings in Washington in the next five years. State job growth over this period is expected to be nearly three times the national average. The majority of job opportunities—particularly those that will support upward mobility and good quality of life—will be filled with workers who have postsecondary education or training. Recognizing the need to prepare our kids for these opportunities, the Washington Roundtable has set an ambitious goal: By 2030, 70 percent of Washington students will earn a postsecondary credential by the age of 26.

WE NEED TO MORE THAN DOUBLE THE POSTSECONDARY ATTAINMENT RATE FOR WASHINGTON KIDS

TODAY'S REALITY

31%

of Washington High School Students Go on to Earn a Postsecondary Credential

OUR GOAL: BY 2030

70%

of Washington Students Earn a Postsecondary Credential By Age 26

We are falling well short of that goal today. Only 31 percent of Washington high school students go on to attain a postsecondary credential by the age of 26. This is due to many factors, ranging from low high school graduation rates (particularly among historically underserved student groups) to insufficient preparation for college and a lack of student awareness about job opportunities and associated skill requirements.

Preparing less than a third of our kids for the best jobs of the future is not good enough. Not for our students, not for our state. Washington needs to more than double the postsecondary attainment rate for young people who grow up here to ensure they have access to jobs that will enable them to support families, take advantage of opportunities for upward mobility and provide good quality of life.

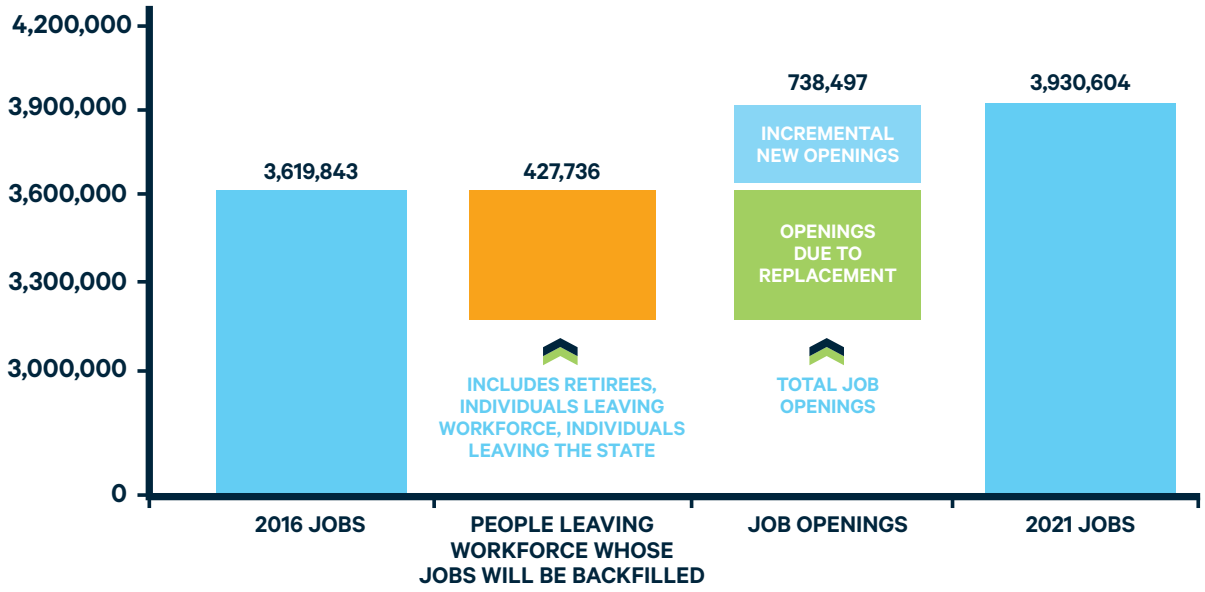
Reaching the 70 percent goal will take a concerted effort on the part of the private, public, and non-profit sectors. It will require a system-wide approach focused on enhancing school readiness, improving college and career readiness, increasing participation in postsecondary certification and degree programs, and building awareness of career pathways.

It is the sincere hope of Washington Roundtable members that, by demonstrating the great career opportunities Washington has to offer, this study will serve as a call to action for parents, educators, policymakers, and employers to work together to more effectively prepare our kids for the great opportunities available in our state.

THE FUTURE: DRAMATIC JOB GROWTH IN WASHINGTON STATE

Washington will have an unprecedented 740,000 job openings in the next five years. This growth rate (1.7 percent from 2016 to 2021) is nearly three times the projected national growth rate (2014–24), and well in excess of Washington's historical average.

740,000 Job Openings in Washington State Between 2016–2021
Growth to Outpace National Forward-Looking Average and Washington Historical Trends



Source: BCG estimates based on Washington Employment Security Department data.

A closer look at the types of jobs that will be available is required to fully understand the range of opportunities and their associated skill requirements. For comparison purposes, BCG has classified projected job openings into three categories based on current median salary and potential for upward mobility.

CAREER JOBS:

73% **OF WORKERS WILL HAVE A CREDENTIAL**

Higher skill, higher compensation jobs

Salary Range: $60,000-$100,000+
# of openings: 260,000

These jobs offer the best starting salaries and opportunities for increased compensation and responsibility. Career jobs require a higher level of skills, typically evidenced by some form of postsecondary degree, certification, or credential. More than 90 percent of workers filling these jobs will have a credential (73 percent) or some college (18 percent).

PATHWAY JOBS:

34% **OF WORKERS WILL HAVE A CREDENTIAL**

Higher skills jobs with potential path to career

Salary Range: $30,000-$45,000
# of openings: 330,000

Compared to entry-level positions, these jobs offer better pay and a clearer path to upward mobility and career jobs. Many require specific training or a postsecondary credential for applicants to be considered for employment. Nearly two-thirds of workers who fill pathway jobs will have a credential (34 percent) or some college (30 percent).

ENTRY-LEVEL JOBS:

20% **OF WORKERS WILL HAVE A CREDENTIAL**

Jobs that build basic employment skills

Salary Range: $20,000-$30,000
# of openings: 150,000

These jobs offer important opportunities to gain work experience and learn basic skills. They often do not require specific training or a postsecondary credential, though nearly half of workers who fill them will have a credential (20 percent) or some college (24 percent). Entry-level jobs offer lower compensation and limited opportunities for advancement as compared to jobs in the other two categories.

ENTRY-LEVEL JOBS:

Twenty percent of job openings in Washington in the next five years will be entry level (far less growth than is expected in the other two categories with occupations that require higher skill levels).

Common entry-level positions include unskilled laborers and workers in food service, janitorial services, landscaping, and childcare. These positions typically pay $20,000 to $30,000 annually, a level that falls below the state median salary.

Entry-level jobs play an important role in the overall economy by providing earning opportunities and teaching basic employment skills (such as time management, customer service, attention to detail, and teamwork) for those entering the workforce.

Of the 150,000 entry-level jobs that will be available, nearly half will be filled by workers with a postsecondary credential (20 percent) or some college (24 percent). Education or training after high school is even more important for those who want to move from an entry-level position to a pathway or career job. Without postsecondary education or training, workers are unlikely to progress to jobs that offer salaries above the state median and opportunity for advancement.

Innovative programs are available to help employees in entry-level jobs access postsecondary education or training and make the transition to positions that offer better pay and mobility. For example, the Starbucks College Achievement Plan provides all benefits-eligible U.S. employees the opportunity to pursue a bachelor's degree with 100 percent tuition coverage at Arizona State University (ASU). Participants can use their degrees to continue their careers at Starbucks or pursue any multitude of opportunities outside the company.

ENTRY LEVEL
150K JOBS OPEN IN THE NEXT 5 YEARS

TOP 10 OCCUPATIONS	TOTAL OPENINGS 2016–2021
FOOD PREP & SERVING	16,630
WAITER AND WAITRESS	15,471
FARMWORKER & LABORER CROP/NURSERY/GREENHOUSE	11,898
JANITORS & CLEANERS	9,866
MAIDS & HOUSEKEEPING	8,344
LANDSCAPING	8,069
CHILDCARE WORKER	7,987
PERSONAL CARE AIDE	5,654
COUNTER ATTENDANTS, CAFE/CONCESSION/COFFEE SHOP	4,940
FOOD PREPARATION WORKERS	4,795

PATHWAY JOBS:

Forty-five percent of openings in Washington over the next five years will be for pathway jobs. These positions typically offer an annual salary range of $30,000 to $45,000. The largest number of pathway job openings in the coming years will be in retail and customer service, freight processing and logistics, office administration, and carpentry.

These jobs offer potential for upward mobility, with a route to a career job. Accordingly, a higher skill level is typically required. Sixty-four percent of workers who fill pathway jobs will have a postsecondary credential (34 percent) or some college experience (30 percent).

A number of Washington companies work directly with partners in the education sector to support access to pathway, and eventually career, jobs. For example, Boeing and the Manufacturing Industrial Council are partnering with the Office of the Superintendent of Public Instruction to support CorePlus, a program that provides a two-year defined high school curriculum to teach the basic manufacturing skills needed to gain entry-level employment in multiple fields.

The healthcare and utilities industries also offer great examples of pathway opportunities, with jobs that start near the state median salary and, with additional postsecondary education or training, offer a route to career positions.

PATHWAY
330K JOBS OPEN IN THE NEXT 5 YEARS

TOP 10 OCCUPATIONS	TOTAL OPENINGS 2016–2021
RETAIL SALESPERSON	24,832
CASHIER	16,777
CUSTOMER SERVICE REP	11,604
LABORER, FREIGHT, STOCK, AND MATERIAL MOVER	11,557
GENERAL OFFICE CLERK	9,413
CARPENTER	9,043
CONSTRUCTION LABORER	8,453
TEACHER ASSISTANT	7,890
STOCK CLERKS	7,777
SECRETARIES & ADMIN ASST.	7,494

PATHWAY JOB PROFILE:
MEDICAL ASSISTANT

INDUSTRY: **HEALTHCARE**

STARTING SALARY: **$37,000/YEAR**

Primary care and specialty clinics anticipate hiring 3,000 medical assistants over the next five years. Success in this position begins with a career- and college-ready high school diploma, followed by postsecondary training and certification from an accredited medical assistant program. Experience with electronic medical records systems, front- and back-office skills, communications, and customer service are preferred. This is a gateway to career jobs such as medical administrative assistant, laboratory assistant, ophthalmic technician, and other positions that offer higher salaries and opportunity for upward mobility.

CLICK TO LEARN MORE

PATHWAY JOB PROFILE:
STUDENT ENGINEER

INDUSTRY: **UTILITIES**

STARTING SALARY: **$16-$20/HOUR**

Employers in the utilities industry anticipate hiring thousands of utility professionals in the next five years. Success in this career pathway begins with a college- and career-ready high school diploma followed by postsecondary education. Undergraduate students enrolled full-time and working toward a bachelor of science degree in electrical or civil engineering can participate in development programs, such as the Student Engineering Development Program at Avista Corp., which serve as a gateway to engineering careers.

CLICK TO LEARN MORE

CAREER JOBS: **Career jobs present a winning combination: higher starting salaries and the maximum potential for upward mobility.** With a median salary range of $60,000 to $100,000 and beyond, these jobs offer compensation well above the state median salary ($41,000), and most exceed Washington's median household income ($63,000).

Approximately 35 percent of the projected job growth in Washington over the next five years will be in the career category, with some of the fastest-growing occupations including software developers, registered nurses, accountants and auditors, and sales representatives.

CAREER
260K JOBS OPEN IN THE NEXT 5 YEARS

TOP 10 OCCUPATIONS	TOTAL OPENINGS 2016–2021
SOFTWARE APP DEVELOPER	14,791
REGISTERED NURSE	11,445
ACCOUNTANT & AUDITOR	8,546
SALES REP, WHOLESALE & MANUFACTURING	8,522
GENERAL & OPS MANAGER	7,259
ELEMENTARY SCHOOL TEACHER	6,010
COMPUTER PROGRAMMER	4,919
MANAGEMENT ANALYST	4,789
COMPUTER SYSTEMS ANALYST	4,457
ELECTRICIAN	3,899

The high degree of upward mobility found in these positions is primarily a function of the higher level of skills and credentials of the workers in them. More than nine in 10 workers who fill these jobs will have a postsecondary credential (73 percent) or some college experience (18 percent).

The STEM (science, technology, engineering, and math) and professional services industries provide excellent examples of career job opportunities in Washington.

CAREER JOB PROFILE:
CYBERSECURITY PROFESSIONAL

INDUSTRY: TECHNOLOGY, COMPUTER SCIENCE, SECURITY, DEFENSE, ENERGY

SALARY RANGE: $60,000 TO $250,000

In the next five years, Washington companies anticipate hiring approximately 5,000 cybersecurity professionals. These employees will work to protect company networks, investigate cyber events, and triage potentially malicious activity. Success in these positions begins with a career- and college-ready diploma. Students will further benefit from high school coursework emphasizing computational problem-solving, abstract thinking, pattern recognition and coding. These positions require a bachelor's degree in computer science, engineering, or a related field. A master's degree is preferred but not required. Interested students should also pursue internships, apprenticeships, and hands-on experience.

CLICK TO LEARN MORE

CAREER JOB PROFILE:
APPLICATION DEVELOPER

INDUSTRY: PROFESSIONAL SERVICES, TECHNOLOGY

STARTING SALARY: $96,000/YEAR

In the next five years, Washington companies anticipate hiring approximately 15,000 application developers. These employees will develop software and mobile applications that interface with internal applications and provide new functionality. Success in this position begins with a career- and college-ready diploma. Students will further benefit from high school coursework emphasizing math, computer science, logic, and teamwork. Candidates must have a bachelor's degree in computer science or a related field, or equivalent work experience. Interested students are encouraged to join computer science clubs, participate in team-oriented competitions, and learn a variety of programming languages.

CLICK TO LEARN MORE

CAREER JOB PROFILE:
ELECTRICAL LINE WORKER

INDUSTRY: UTILITIES

SALARY RANGE: $62,900/YEAR

The utilities industry anticipates hiring approximately 1,000 electrical line workers over the next five years. Success in this position begins with a career- and college-ready high school diploma followed by postsecondary training at a utility line construction and maintenance school such as Avista's Pre-Apprentice Line Construction School at Spokane Community College. Successful candidates will have six months or more of utility ground worker experience, a demonstrated mechanical and electrical aptitude, and communications skills.

CLICK TO LEARN MORE

CAREER JOB PROFILE:
VIRTUAL DESIGN COORDINATOR

INDUSTRY: CONSTRUCTION

SALARY RANGE: $68,000 TO $70,000/YEAR

In the next five years, engineering firms and contractors anticipate hiring several hundred virtual design coordinators. Among many responsibilities, these workers will create models to demonstrate virtual engineering approaches for new projects and models for estimating and construction. Success in this occupation begins with a career- and college-ready diploma. Students will benefit from high school coursework emphasizing English and STEM studies. A bachelor's degree in construction management or software training plus a certificate or work experience is required. Interested students are encouraged to participate in internships and class projects that combine course study and software.

CLICK TO LEARN MORE

MORE GREAT CAREER OPPORTUNITIES

PAYROLL TAX SUPERVISOR:
STARTING SALARY: **$53,000/YEAR**

CHEMICAL ENGINEER:
STARTING SALARY: **$73,000/YEAR**

DATA ANALYST:
STARTING SALARY: **$60,000/YEAR**

ENERGY OPERATOR TECHNICIAN:
STARTING SALARY: **$65,000/YEAR**

Career job opportunities can be found in a wide range of industries and communities across our state. Students and families interested in learning more about job opportunities being created by Washington employers—and how they can prepare themselves to follow their interests into rewarding employment—should see the range of job vignettes created with the help of Washington Roundtable member companies. Whether students imagine themselves helping others as a medical assistant, protecting digital privacy in the rapidly evolving world of cybersecurity, or working in some other fast-moving field, we hope these job profiles will open students' eyes to opportunities they may not have realized were out there.

THE MANY PATHS TO CAREER JOBS:

There is no single "right" path for Washington students to prepare for satisfying and rewarding work lives. Young people have many routes for entering the workforce. Some will use an entry-level job as a springboard to acquire additional education and training. Others will launch their working lives in a pathway or a career job. No matter where the work-life journey begins, Washington students need to be better prepared to take advantage of the benefits that these positions offer.

Many Pathways to Career Jobs in Washington State

	ENTRY LEVEL	PATHWAY	CAREER
Starbucks	BARISTA $21,000/YEAR Earn a Bachelor's Degree from ASU while working as a part-time barista at Starbucks.	STORE MANAGER $50,000/YEAR Major in retail management and advance to store manager.	TRAINING SPECIALIST $65,000/YEAR Transition to headquarters as training specialist.
Avista		STUDENT ENGINEER $16-$20/HOUR Major in engineering and work as a student engineer at Avista.	ELECTRICAL ENGINEER $100,000/YEAR After graduation, return to Avista.
Group Health		MEDICAL ASSISTANT $35,000/YEAR Enroll in a 2-year medical assistant program. Join Group Health after graduation.	REGISTERED NURSE $78,000/YEAR With the support of Group Health pursue LPN or RN degree.
Pacific Northwest National Laboratory			CYBER SECURITY ANALYST $65,000/YEAR Major in computer science and intern with PNNL. After graduation, return to PNNL.

Note: Salaries displayed are WA state averages

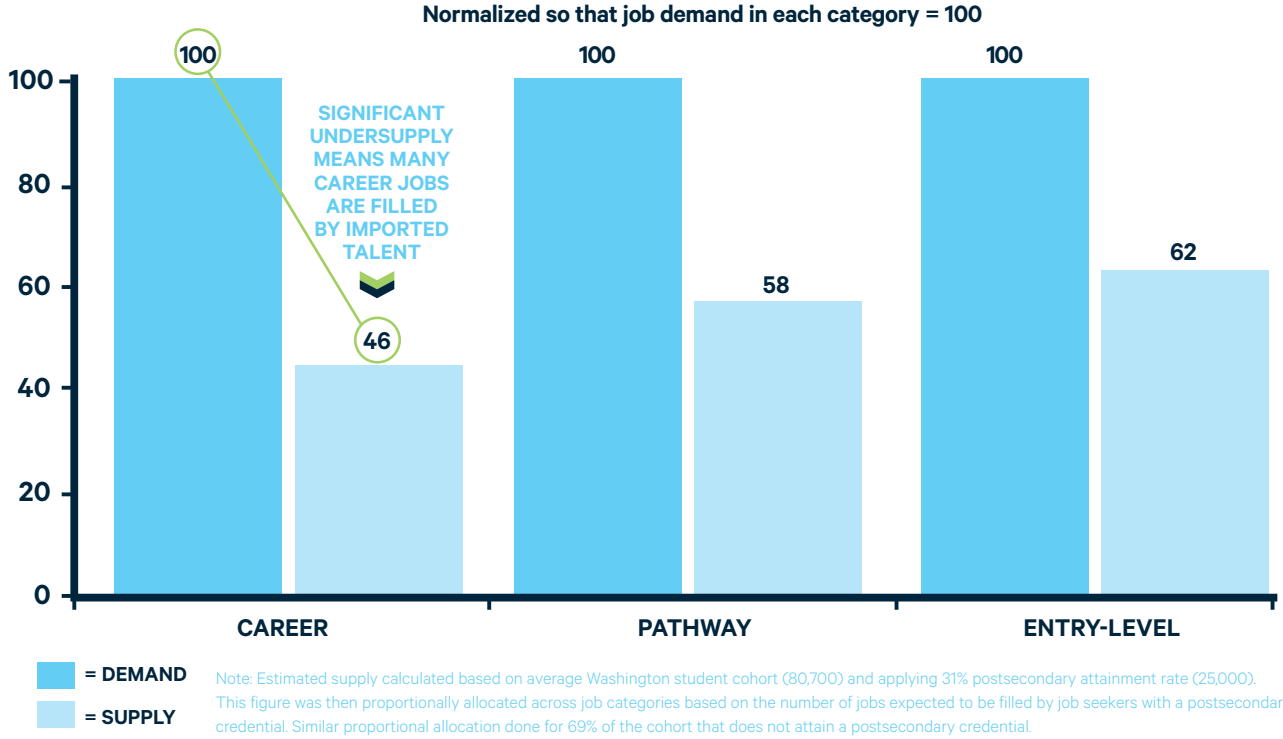
Source: Bureau of Labor of Statistics; Washington State Employment Security Department; BCG Analysis

SKILLS GAPS IN WASHINGTON STATE:

Previous BCG research, done in partnership with the Washington Roundtable, documented gaps between employer needs in our state and the skill levels of Washington job candidates. Our education system isn't producing enough qualified candidates for the jobs being created. Gaps are especially prevalent in the career jobs category, where the best wages and opportunities for upward mobility are found.

Annual Supply (Washington Students) vs. Demand (Washington Jobs)

Normalized so that job demand in each category = 100



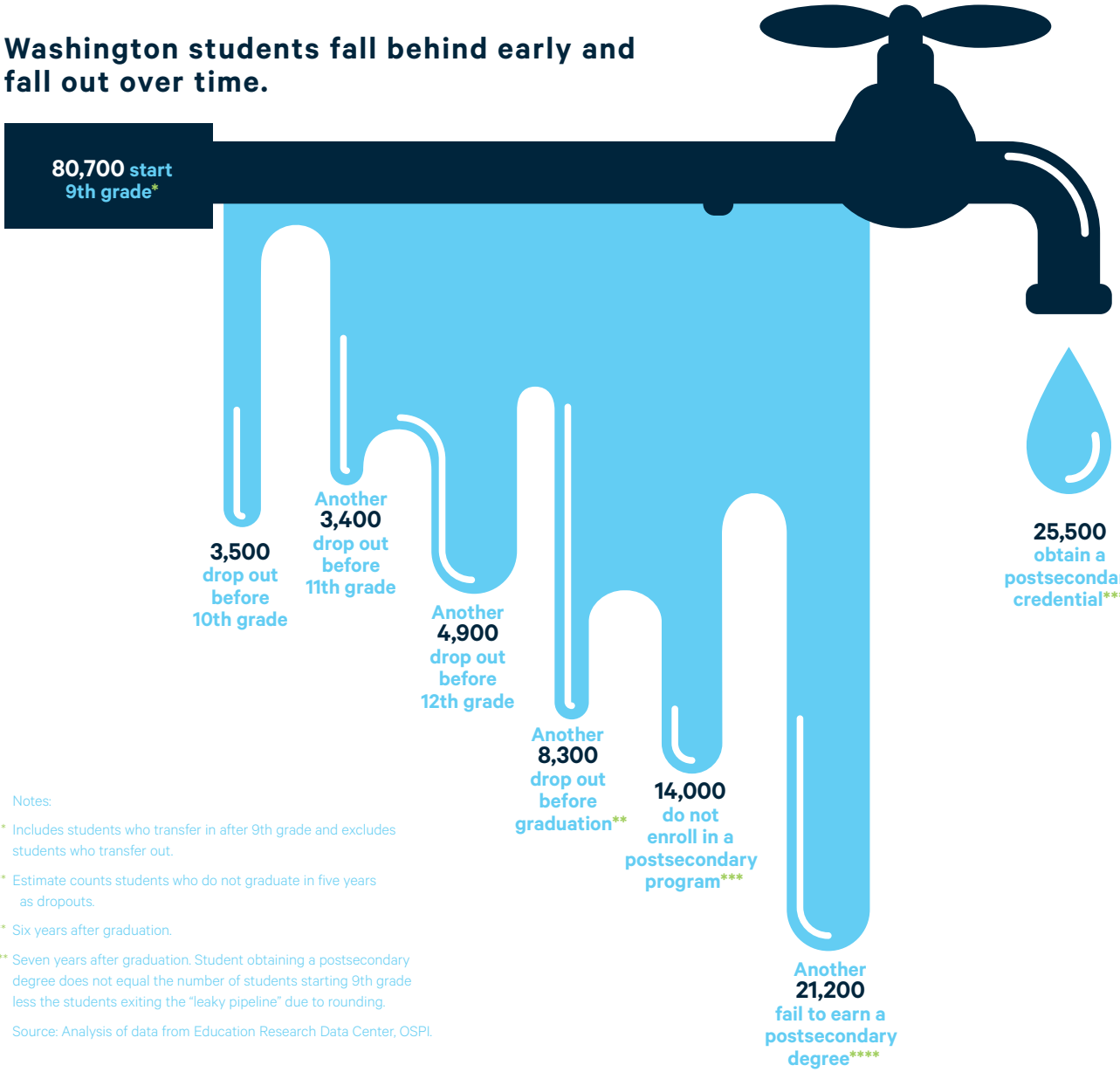
Note: Estimated supply calculated based on average Washington student cohort (80,700) and applying 31% postsecondary attainment rate (25,000). This figure was then proportionally allocated across job categories based on the number of jobs expected to be filled by job seekers with a postsecondary credential. Similar proportional allocation done for 69% of the cohort that does not attain a postsecondary credential.

Source: BCG analysis.

~38K CAREER JOB OPENINGS PER YEAR WILL BE FILLED BY A CREDENTIALED CANDIDATE
...BUT ONLY ~25K CREDENTIALED WASHINGTON STUDENTS PER COHORT

SKILLS GAPS IN WASHINGTON STATE (CONTINUED):

A look at what happens to Washington students as they move through high school and into postsecondary education illustrates the challenge.



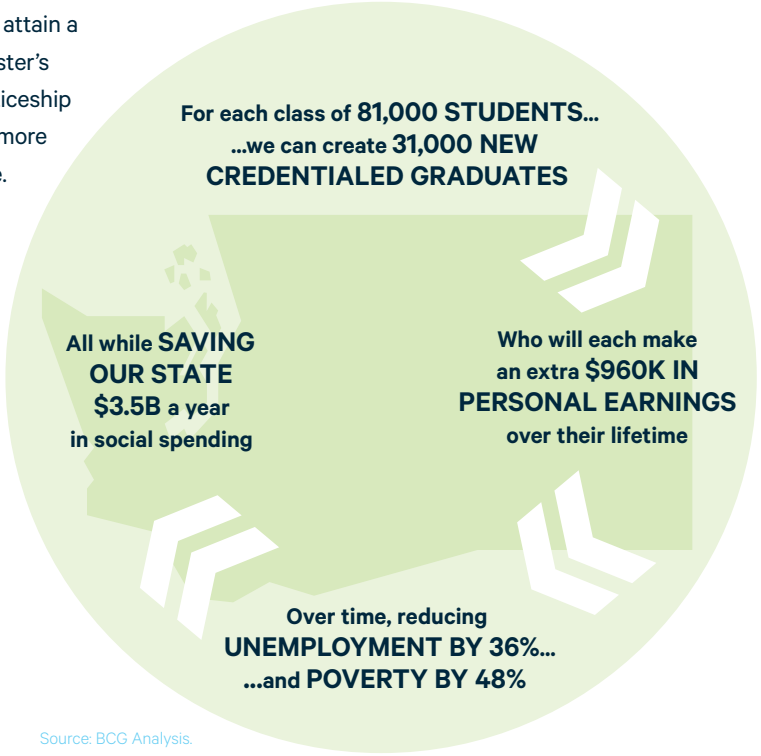
While this "leaky pipeline" results in a challenging skills gap—particularly for employers seeking to hire Washington students into technical or STEM-related career jobs—similar gaps exist for those who want to fill pathway and even entry-level jobs. In those cases, employers report struggling to find graduates with vocational experience and demonstrated readiness for the workforce, including basic work skills like time management, active listening, teamwork, critical thinking, math, and writing competency. If Washington students are adequately prepared, they will have a wide range of career opportunities to pursue.

CONCLUSION:

The members of the Washington Roundtable hope this study will catalyze a statewide effort to ensure more of our kids are prepared for jobs in our state. To do that, **we must significantly raise the postsecondary attainment rate for students going through Washington's K–12 system. Our goal: By 2030, 70 percent of Washington students will go on to attain a postsecondary credential by the age of 26.**

Today, only 31 percent of Washington high school students go on to attain a postsecondary credential (whether an associate's, bachelor's, or master's degree or some form of industry-recognized certification or apprenticeship program) within seven years of high school graduation. We need to more than double that number. If we do, the rewards will extend statewide.

IMPROVING WASHINGTON KIDS' **CREDENTIAL ATTAINMENT** TO 70% WILL YIELD SIGNIFICANT SOCIAL BENEFITS



Source: BCG Analysis.

Waiting until our kids are in high school, or even middle school, is too late to start this process. The state must take a "cradle to career" approach to raising the postsecondary attainment rate and preparing our students for job opportunities in our state.

Action is required in four areas:

- **Improve school readiness,** with an emphasis on low-income children and traditionally underserved student populations.
- **Improve the performance of our K–12 system to ensure more high school students graduate career- and college-ready,** with an emphasis on raising achievement among at-risk students and low-performing schools and students.
- **Increase participation of Washington students in postsecondary education,** with a focus on delivering degrees, certificates, and other credentials in fields that will be in high demand.
- **Help students, beginning in elementary school, develop better awareness of the careers that will be available,** inspiring them to think about their futures, the skills necessary for the jobs that interest them and the pathways to attaining those skills.

The time for action is now.

Washington employers are creating exciting job opportunities that offer excellent wages and strong potential for upward mobility. These jobs should go to students from Washington whenever possible. That will only happen if we all work together to ensure more of our students attain the credentials required for success in our state. Delaying this effort will mean that more of these great jobs end up being filled by talent imported from elsewhere, while students raised and educated here face a future of more limited opportunities.

Setting a postsecondary achievement goal of 70 percent for kids growing up in Washington is ambitious. The rewards are so clearly worth the effort.

METHODOLOGY & REFERENCES:

FORECAST OF JOB OPENINGS

Quantifying and classifying the job openings that will be available in Washington over the next five years was a major analytical focus of this study. To develop these estimates, BCG drew from publicly available data, primarily from the Washington State Employment Security Department and the Bureau of Labor Statistics, as well as hiring forecasts provided by some Washington Roundtable member companies.

For comparison purposes, BCG calculated a "job score" for each occupation on a scale of zero to 100.

- Fifty-percent of the job score is based on a comparison of the occupation's median salary to the Washington state median salary (which is approximately $41,000 per year). This comparison is used to capture the relative standard of living that the job provides.
- The other half of the job score is determined by the ratio of an occupation's 75th percentile salary compared to its 25th percentile salary. This captures the opportunity for upward mobility within a given occupation. Jobs that have a wider salary range imply more opportunity for upward mobility over time, and thus have a higher score.
- Overall, a job that provides a starting salary near or above the Washington state median and has a wide salary range will have a job score greater than 50.

Jobs were classified into one of three categories based on their job score and other qualitative considerations:

- Career jobs have a job score greater than 50, based on the methodology described above. Jobs that fall into the "Career" category have a salary range of $60,000 at the 25th percentile up to $100,000+ at the 75th percentile.
- Pathway jobs have a job score less than 50, reflecting lower salaries and mobility within a given occupation, but they offer a clear promotion path to a Career job. Jobs that fall into the "Pathway" category have a salary range of $30,000 at the 25th percentile up to $45,000 at the 75th percentile.
- Entry-level jobs have a job score less than 50, and they lack a clear promotion path to a Career job. These jobs have a salary range of $20,000 at the 25th percentile up to $30,000 at the 75th percentile.

Job salary ranges are based on BCG analysis of data provided by the Bureau of Labor Statistics, American Census Survey, and Washington State Employment Security Department.

JOB PROFILE VIGNETTES

BCG conducted in-depth interviews with executives and human resources staff at Washington Roundtable member companies to develop profile vignettes for select job opportunities, including associated skills requirements.

POSTSECONDARY ATTAINMENT

The Washington Roundtable used data published by the Education Research & Data Center (ERDC) and the Office of Superintendent of Public Instruction (OSPI) to determine the postsecondary attainment rate of students who were enrolled in a Washington high school and expected to graduate with the class of 2006. The determination that 31 percent of Washington students attained a postsecondary credential is based on reported credential attainment of those students within seven years of the expected year of high school graduation.

OSPI reported that there were 80,732 students in the class of 2006. This cohort is composed of students who started 9th grade in a Washington high school plus any student who transferred into a Washington high school between 2002 and 2006, minus any student who transferred out of the state over those same years. Of those 80,732 students in the class of 2006, the ERDC reported that 25,465 of them earned a postsecondary credential within seven years of their expected year of graduation.

SELECT SOURCES AND REFERENCES

Bureau of Labor Statistics. **"Education attainment for workers 25 years and older by detailed occupation"**

Bureau of Labor Statistics. **"Occupational Employment Statistics"**

Education Research & Data Center. **"Washington's Postsecondary Education Pipeline"**

Education Research & Data Center. **"A Credential by Age 26?"**

OSPI. **Graduation and Dropout Statistics, 2005-06**

Washington State Employment Security Database. **"Employment Projections"**

ABOUT THE BOSTON CONSULTING GROUP

The Boston Consulting Group (BCG) is a global management consulting firm and the world's leading advisor on business strategy. BCG partners with clients from the private, public, and not-for-profit sectors in all regions to identify their highest-value opportunities, address their most critical challenges, and transform their enterprises. A customized approach combines deep insight into the dynamics of companies and markets with close collaboration at all levels of the client organization. This ensures that our clients achieve sustainable competitive advantage, build more capable organizations, and secure lasting results. Founded in 1963, BCG is a private company with 85 offices in 48 countries. For more information, visit bcg.com.

ABOUT THE WASHINGTON ROUNDTABLE

The Washington Roundtable is a nonprofit organization composed of senior executives of major private sector employers in Washington state. Our members work together to effect positive change on public policy issues that they believe are most important to supporting state economic vitality and fostering opportunity for all Washingtonians. For more information, visit waroundtable.com.

ABOUT PARTNERSHIP FOR LEARNING

Partnership for Learning, the education foundation of the Washington Roundtable, is a statewide nonprofit organization that communicates the need for all Washington's students to graduate from high school ready for career and college. As a trusted source of information, Partnership for Learning makes complex education issues accessible. For more information, visit partnership4learning.org.

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PATHWAYS TO GREAT JOBS IN WASHINGTON STATE

WASHINGTON KIDS 4 JOBS WASHINGTON

The job market Washington students will enter in the coming years will be full of exciting opportunities. Washington state boasts the seventh-fastest growing economy in the nation. Our anchor employers are leaders in information and communications technology, aerospace, online commerce, and precision manufacturing. Traditional stronghold sectors – such as trade, natural resources, agriculture, manufacturing, and services – provide a vibrant and diverse employment mix.

The **Washington Roundtable** partnered with **The Boston Consulting Group** (BCG) to examine Washington state's five-year jobs outlook and shine a spotlight on the jobs that will be available and the pathways Washington students can take to pursue rewarding careers.

READ THE ENTIRE STUDY AT WAROUNDTABLE.COM

KEY FINDINGS:

There will be 740,000 job openings in Washington in the next five years. State job growth over this period is expected to be nearly three times the national average. The majority of job opportunities—particularly those that will support upward mobility and good quality of life—will be filled with workers who have postsecondary education or training. Recognizing the need to prepare our kids for these opportunities, the Washington Roundtable has set an ambitious goal: By 2030, 70 percent of Washington students will earn a postsecondary credential by the age of 26.

THE FUTURE: DRAMATIC JOB GROWTH IN WASHINGTON STATE

Job opportunities in Washington state over the coming years will span a broad spectrum of industries, with the vast majority of positions being filled by workers who have a postsecondary credential or some college. For comparison purposes, BCG classified projected job openings into three categories based on current median salary and potential for upward mobility.

CAREER JOBS:

73% OF WORKERS WILL HAVE A CREDENTIAL

Higher skill, higher compensation jobs

Salary Range: $60,000-$100,000+
# of openings: 260,000

These jobs offer the best starting salaries and opportunities for increased compensation and responsibility. Career jobs require a higher level of skills, typically evidenced by some form of postsecondary degree, certification, or credential. More than 90 percent of workers filling these jobs will have a credential (73 percent) or some college (18 percent).

PATHWAY JOBS:

34% OF WORKERS WILL HAVE A CREDENTIAL

Higher skill jobs with potential path to career

Salary Range: $30,000-$45,000
# of openings: 330,000

Compared to entry-level positions, these jobs offer better pay and a route to upward mobility and career jobs. Many pathway jobs require specific training or a postsecondary credential for applicants to be considered for employment. Nearly two-thirds of workers who fill pathway jobs will have a credential (34 percent) or some college (30 percent).

ENTRY-LEVEL JOBS:

20% OF WORKERS WILL HAVE A CREDENTIAL

Jobs that build basic employment skills

Salary Range: $20,000-$30,000
# of openings: 150,000

These jobs offer important opportunities to gain work experience and learn basic skills. They often do not require specific training or a postsecondary credential, though nearly half of workers who fill them will have a credential (20 percent) or some college (24 percent). Entry-level jobs offer lower compensation and limited opportunities for advancement as compared to jobs in the other two categories.

THE CHALLENGE: PREPARING WASHINGTON KIDS FOR WASHINGTON JOBS

Only 31 percent of Washington high school students go on to earn a postsecondary credential by the age of 26. In a class of 81,000 high school students, more than 20,000 drop out before graduation, another 14,000 fail to enroll in a postsecondary program, and 21,000 more fail to earn a postsecondary credential. Preparing less than a third of our kids for the jobs of the future isn't good enough.

WE NEED TO MORE THAN DOUBLE THE POSTSECONDARY ATTAINMENT RATE FOR WASHINGTON KIDS

TODAY'S REALITY

31%

of Washington High School Students Go on to Earn a Postsecondary Credential

OUR GOAL: BY 2030

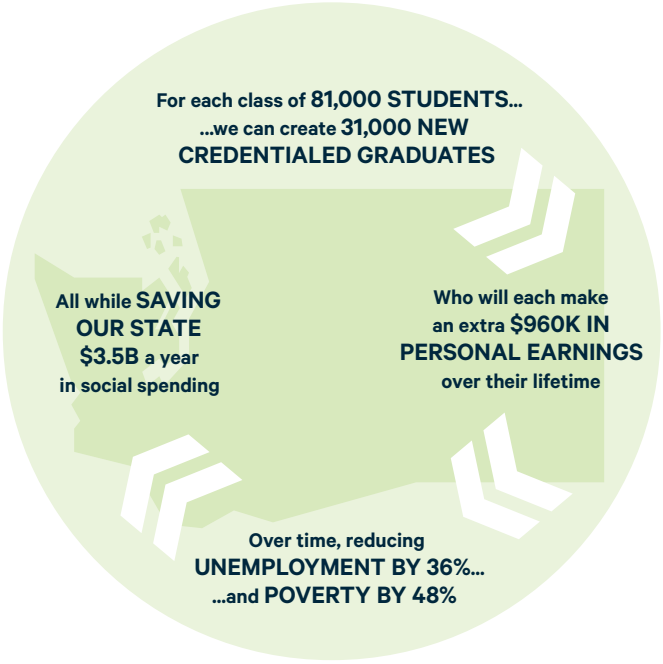
70%

of Washington Students Earn a Postsecondary Credential By Age 26

THE TIME FOR ACTION IS NOW

IMPROVING WASHINGTON KIDS' **CREDENTIAL-ATTAINMENT** TO 70% WILL YIELD SIGNIFICANT SOCIAL BENEFITS

Waiting until our kids are in high school, or even middle school, is too late to start this process. The state must take a "cradle to career" approach to raising the postsecondary attainment rate and preparing our students for job opportunities in our state.



Source: BCG Analysis.

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JOIN THE CONVERSATION: **@waroundtable** **@washingtonroundtable** READ THE ENTIRE STUDY AT WAROUNDTABLE.COM

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RCW 28B.145.005

Finding—Intent.

The legislature finds that, despite increases in degree production, there remain acute shortages in high employer demand programs of study, particularly in the science, technology, engineering, and mathematics (STEM) and health care fields of study. According to the workforce training and education coordinating board, seventeen percent of Washington businesses had difficulty finding job applicants in 2010. Eleven thousand employers did not fill a vacancy because they lacked qualified job applicants. Fifty-nine percent of projected job openings in Washington state from now until 2017 will require some form of postsecondary education and training.

It is the intent of the legislature to provide jobs and opportunity by making Washington the place where the world's most productive companies find the world's most talented people. The legislature intends to accomplish this through the creation of the opportunity scholarship and the opportunity expansion programs to help mitigate the impact of tuition increases, increase the number of professional-technical certificates, professional-technical degrees, or baccalaureate degrees in high employer demand and other programs, and invest in programs and students to meet market demands for a knowledge-based economy while filling middle-income jobs with a sufficient supply of skilled workers.

RCW 28B.145.010

Definitions.

The definitions in this section apply throughout this chapter unless the context clearly requires otherwise.

(1) "Board" means the opportunity scholarship board.

(2) "Council" means the student achievement council.

(3) "Eligible education programs" means high employer demand and other programs of study as determined by the board.

(4) "Eligible expenses" means reasonable expenses associated with the costs of acquiring an education such as tuition, books, equipment, fees, room and board, and other expenses as determined by the program administrator in consultation with the council and the state board ~~for community and technical colleges~~.

(5) "Eligible student" means a resident student who received his or her high school diploma or high school equivalency certificate as provided in RCW 28B.50.536 in Washington and who:

(a)(i) Has been accepted at a four-year institution of higher education into an eligible education program leading to a baccalaureate degree; ~~or~~

(ii) Will attend a two-year institution of higher education and intends to transfer to an eligible education program at a four-year institution of higher education;

(iii) Has been accepted at an institution of higher education into a professional-technical degree in an eligible education program; or

(iv) Has been accepted at an institution of higher education into a professional-technical certificate program in an eligible education program.

(b) Declares an intention to obtain a professional-technical certificate, professional-technical degree, or a baccalaureate degree; and

(c) Has a family income at or below one hundred twenty-five percent of the state median family income at the time the student applies for an opportunity scholarship.

(6) "High employer demand program of study" has the same meaning as provided in RCW 28B.50.030.

(7) "Participant" means an eligible student who has received a scholarship under the opportunity scholarship program.

(8) “Professional-technical certificate” means a program as approved by the state board under RCW 28B.50.090(7)(c), and is offered by a public institution.

(9) “Professional-technical degree” means a program as approved by the state board under RCW 28B.50.090(7)(c), and is offered by a public institution.

(9) "Program administrator" means a college scholarship organization that is a private nonprofit corporation registered under Title 24 RCW and qualified as a tax-exempt entity under section 501(c)(3) of the federal internal revenue code, with expertise in managing scholarships and college advising.

(~~9~~)(10) "Resident student" has the same meaning as provided in RCW 28B.15.012.

(11) “State board” means the state board for community and technical colleges.

RCW 28B.145.020

Opportunity scholarship board.

(1) The opportunity scholarship board is created. The board consists of eleven members:

(a) Six members appointed by the governor. For three of the six appointments, the governor shall consider names from a list provided by the president of the senate and the speaker of the house of representatives; and

(b) Five foundation or business and industry representatives appointed by the governor from among the state's most productive industries such as aerospace, manufacturing, health care, information technology, engineering, agriculture, and others, as well as philanthropy. The foundation or business and industry representatives shall be selected from among nominations provided by the private sector donors to the opportunity scholarship and opportunity expansion programs. However, the governor may request, and the private sector donors shall provide, an additional list or lists from which the governor shall select these representatives.

(2) Board members shall hold their offices for a term of four years from the first day of September and until their successors are appointed. No more than the terms of two members may expire simultaneously on the last day of August in any one year.

(3) The members of the board shall elect one of the business and industry representatives to serve as chair.

(4) Seven members of the board constitute a quorum for the transaction of business. In case of a vacancy, or when an appointment is made after the date of expiration of the term, the governor or the president of the senate or the speaker of the house of representatives, depending upon which made the initial appointment to that position, shall fill the vacancy for the remainder of the term of the board member whose office has become vacant or expired.

(5) The board shall be staffed by the program administrator.

(6) The purpose of the board is to provide oversight and guidance for the opportunity expansion and the opportunity scholarship programs in light of established legislative priorities and to fulfill the duties and responsibilities under this chapter, including but not limited to determining eligible education programs for purposes of the opportunity scholarship program.

Duties, exercised jointly with the program administrator, include soliciting funds and setting annual fund-raising goals.

(7) The board may report to the governor and the appropriate committees of the legislature with recommendations as to:

(a) Whether some or all of the scholarships should be changed to conditional scholarships that must be repaid in the event the participant does not complete the eligible education program; and

(b) A source or sources of funds for the opportunity expansion program in addition to the voluntary contributions of the high technology research and development tax credit under RCW 82.32.800.

RCW 28B.145.030

Program administrator—Duties—Scholarship account—Endowment account.

(1) The program administrator, under contract with the council, shall staff the board and shall have the duties and responsibilities provided in this chapter, including but not limited to publicizing the program, selecting participants for the opportunity scholarship award, distributing opportunity scholarship awards, and achieving the maximum possible rate of return on investment of the accounts in subsection (2) of this section, while ensuring transparency in the investment decisions and processes. Duties, exercised jointly with the board, include soliciting funds and setting annual fund-raising goals. The program administrator shall be paid an administrative fee as determined by the board.

(2) With respect to the opportunity scholarship program, the program administrator shall:

(a) Establish and manage two separate accounts into which to receive grants and contributions from private sources as well as state matching funds, and from which to disburse scholarship funds to participants;

(b) Solicit and accept grants and contributions from private sources, via direct payment, pledge agreement, or escrow account, of private sources for deposit into one or both of the two accounts created in this subsection (2)(b) in accordance with this subsection (2)(b):

(i) The "scholarship account," whose principal may be invaded, and from which scholarships must be disbursed beginning no later than December 1, 2011, if, by that date, state matching funds in the amount of five million dollars or more have been received. Thereafter, scholarships shall be disbursed on an annual basis beginning no later than May 1, 2012, and every October 1st thereafter;

(ii) The "endowment account," from which scholarship moneys may be disbursed from earnings only in years when:

(A) The state match has been made into both the scholarship and the endowment account;

(B) The state appropriations for the state need grant under RCW 28B.92.010 meet or exceed state appropriations for the state need grant made in the 2011-2013 biennium, adjusted for inflation, and eligibility for state need grant recipients is at least seventy percent of state median family income; and

(C) The state has demonstrated progress toward the goal of total per-student funding levels, from state appropriations plus tuition and fees, of at least the sixtieth percentile of total per-student funding at similar public institutions of higher education in the global challenge states, as defined, measured, and reported in *RCW 28B.15.068. In any year in which the office of financial management reports that the state has not made progress toward this goal, no new

scholarships may be awarded. In any year in which the office of financial management reports that the percentile of total per-student funding is less than the sixtieth percentile and at least five percent less than the prior year, pledges of future grants and contributions may, at the request of the donor, be released and grants and contributions already received refunded to the extent that opportunity scholarship awards already made can be fulfilled from the funds remaining in the endowment account. In fulfilling the requirements of this subsection, the office of financial management shall use resources that facilitate measurement and comparisons of the most recently completed academic year. These resources may include, but are not limited to, the data provided in a uniform dashboard format under RCW 28B.77.090 as the statewide public four-year dashboard and academic year reports prepared by the state board for community and technical colleges;

(iii) An amount equal to at least fifty percent of all grants and contributions must be deposited into the scholarship account until such time as twenty million dollars have been deposited into the account, after which time the private donors may designate whether their contributions must be deposited to the scholarship or the endowment account. The board and the program administrator must work to maximize private sector contributions to both the scholarship account and the endowment account, to maintain a robust scholarship program while simultaneously building the endowment, and to determine the division between the two accounts in the case of undesignated grants and contributions, taking into account the need for a long-term funding mechanism and the short-term needs of families and students in Washington. The first five million dollars in state match, as provided in RCW 28B.145.040, shall be deposited into the scholarship account and thereafter the state match shall be deposited into the two accounts in equal proportion to the private funds deposited in each account; and

(iv) Once moneys in the opportunity scholarship match transfer account are subject to an agreement under RCW 28B.145.050(5) and are deposited in the scholarship account or endowment account under this section, the state acts in a fiduciary rather than ownership capacity with regard to those assets. Assets in the scholarship account and endowment account are not considered state money, common cash, or revenue to the state;

(c) Provide proof of receipt of grants and contributions from private sources to the council, identifying the amounts received by name of private source and date, and whether the amounts received were deposited into the scholarship or the endowment account;

(d) In consultation with the council and the state board for community and technical colleges, make an assessment of the reasonable annual eligible expenses associated with eligible education programs identified by the board;

(e) Determine the dollar difference between tuition fees charged by institutions of higher education in the 2008-09 academic year and the academic year for which an opportunity scholarship is being distributed;

(f) Develop and implement an application, selection, and notification process for awarding opportunity scholarships;

(g) Determine the annual amount of the opportunity scholarship for each selected participant. The annual amount shall be at least one thousand dollars or the amount determined under (e) of this subsection, but may be increased on an income-based, sliding scale basis up to the amount necessary to cover all reasonable annual eligible expenses as assessed pursuant to (d) of this subsection, or to encourage participation in professional-technical certificate programs, professional-technical degree programs, or baccalaureate degree programs identified by the board;

(h) Distribute scholarship funds to selected participants. Once awarded, and to the extent funds are available for distribution, an opportunity scholarship shall be automatically renewed as long as the participant annually submits documentation of filing both a free application for federal student aid and for available federal education tax credits, including but not limited to the American opportunity tax credit, or if ineligible to apply for federal student aid, the participant annually submits documentation of filing a state financial aid application as approved by the office of student financial assistance; and until the participant withdraws from or is no longer attending the program, completes the program, or has taken the credit or clock hour equivalent of one hundred twenty-five percent of the published length of time of the participant's program, whichever occurs first~~, and as long as the participant annually submits documentation of filing both a free application for federal student aid and for available federal education tax credits, including but not limited to the American opportunity tax credit~~; and

(i) Notify institutions of scholarship recipients who will attend their institutions and inform them of the terms of the students' eligibility.

(3) With respect to the opportunity expansion program, the program administrator shall:

(a) Assist the board in developing and implementing an application, selection, and notification process for making opportunity expansion awards; and

(b) Solicit and accept grants and contributions from private sources for opportunity expansion awards.

RCW 28B.145.040

Opportunity scholarship program.

(1) The opportunity scholarship program is established.

(2) The purpose of this scholarship program is to provide scholarships that will help low and middle-income Washington residents earn professional-technical certificates or degrees, or baccalaureate degrees in high employer demand and other programs of study and encourage them to remain in the state to work. The program must be designed for ~~both~~ students starting professional-technical certificate or degree programs, students starting at two-year institutions of higher education and intending to transfer to four-year institutions of higher education, ~~and~~ or students starting at four-year institutions of higher education.

(3) The opportunity scholarship board shall determine which programs of study, including but not limited to high employer demand programs, are eligible for purposes of the opportunity scholarship.

(4) The source of funds for the program shall be a combination of private grants and contributions and state matching funds. A state match may be earned under this section for private contributions made on or after June 6, 2011. A state match, up to a maximum of fifty million dollars annually, shall be provided beginning the later of January 1, 2014, or January 1st next following the end of the fiscal year in which collections of state retail sales and use tax, state business and occupation tax, and state public utility tax exceed, by ten percent the amounts collected from these tax resources in the fiscal year that ended June 30, 2008, as determined by the department of revenue.

RCW 28B.145.050

Opportunity scholarship match transfer account.

(1) The opportunity scholarship match transfer account is created in the custody of the state treasurer as a nonappropriated account to be used solely and exclusively for the opportunity scholarship program created in RCW 28B.145.040. The purpose of the account is to provide matching funds for the opportunity scholarship program.

(2) Revenues to the account shall consist of appropriations by the legislature into the account and any gifts, grants, or donations received by the executive director of the council for this purpose.

(3) No expenditures from the account may be made except upon receipt of proof, by the executive director of the council from the program administrator, of private contributions to the opportunity scholarship program. Expenditures, in the form of matching funds, may not exceed the total amount of private contributions.

(4) Only the executive director of the council or the executive director's designee may authorize expenditures from the opportunity scholarship match transfer account. Such authorization must be made as soon as practicable following receipt of proof as required under subsection (3) of this section.

(5) The council shall enter into an appropriate agreement with the program administrator to demonstrate exchange of consideration for the matching funds.

RCW 28B.145.060

Opportunity expansion program—Generally—Reports.

(1) The opportunity expansion program is established.

(2) The board shall select institutions of higher education to receive opportunity expansion awards. In so doing, the board must:

(a) Solicit, receive, and evaluate proposals from institutions of higher education that are designed to directly increase the number of professional-technical certificates or degrees, and baccalaureate degrees produced in high employer demand and other programs of study, and that include annual numerical targets for the number of such degrees, with a strong emphasis on serving students who received their high school diploma or high school equivalency certificate as provided in RCW 28B.50.536 in Washington or are adult Washington residents who are returning to school to gain a professional-technical certificate, professional-technical degree, or baccalaureate degree;

(b) Develop criteria for evaluating proposals and awarding funds to the proposals deemed most likely to increase the number of professional-technical certificates, professional-technical degrees, or baccalaureate degrees, and degrees produced in high employer demand and other programs of study;

(c) Give priority to proposals that include a partnership between public and private partnership entities that leverage additional private funds;

(d) Give priority to proposals that are innovative, efficient, and cost-effective, given the nature and cost of the particular program of study;

(e) Consult and operate in consultation with existing higher education stakeholders, including but not limited to: Faculty, labor, student organizations, and relevant higher education agencies; and

(f) Determine which proposals to improve and accelerate the production of professional-technical certificates, professional-technical degrees, or baccalaureate degrees in high employer demand and other programs of study will receive opportunity expansion awards for the following state fiscal year, notify the state treasurer, and announce the awards.

(3) The state treasurer, at the direction of the board, must distribute the funds that have been awarded to the institutions of higher education from the opportunity expansion account.

(4) Institutions of higher education receiving awards under this section may not supplant existing general fund state revenues with opportunity expansion awards.

(5) Annually, the office of financial management shall report to the board, the governor, and the relevant committees of the legislature regarding the percentage of Washington households with incomes in the middle-income bracket or higher. For purposes of this section, "middle-income bracket" means household incomes between two hundred and five hundred percent of the 2010 federal poverty level, as determined by the United States department of health and human services for a family of four, adjusted annually for inflation.

(6) Annually, the council must report to the board, the governor, and the relevant committees of the legislature regarding the increase in the number of degrees in high employer demand and other programs of study awarded by institutions of higher education over the average of the preceding ten academic years.

(7) In its comprehensive plan, the workforce training and education coordinating board shall include specific strategies to reach the goal of increasing the percentage of Washington households living in the middle-income bracket or higher, as calculated by the office of financial management and developed by the agency or education institution that will lead the strategy.

RCW 28B.145.070

Reports—Review for legislative action.

(1) Annually each December 1st, the board, together with the program administrator, shall report to the council, the governor, and the appropriate committees of the legislature regarding the opportunity scholarship and opportunity expansion programs, including but not limited to:

(a) Which education programs the board determined were eligible for purposes of the opportunity scholarship;

(b) The number of applicants for the opportunity scholarship, disaggregated, to the extent possible, by race, ethnicity, gender, county of origin, age, and median family income;

(c) The number of participants in the opportunity scholarship program, disaggregated, to the extent possible, by race, ethnicity, gender, county of origin, age, and median family income;

(d) The number and amount of the scholarships actually awarded, and whether the scholarships were paid from the scholarship account or the endowment account;

(e) The institutions and eligible education programs in which opportunity scholarship participants enrolled, together with data regarding participants' completion and graduation;

(f) The total amount of private contributions and state match moneys received for the opportunity scholarship program, how the funds were distributed between the scholarship and endowment accounts, the interest or other earnings on the accounts, and the amount of any administrative fee paid to the program administrator; and

(g) Identification of the programs the board selected to receive opportunity expansion awards and the amount of such awards.

(2) In the next succeeding legislative session following receipt of a report required under subsection (1) of this section, the appropriate committees of the legislature shall review the report and consider whether any legislative action is necessary with respect to either the opportunity scholarship program or the opportunity expansion program, including but not limited to consideration of whether any legislative action is necessary with respect to the nature and level of focus on high employer demand fields and the number and amount of scholarships.

RCW 28B.145.080

Evaluation of opportunity scholarship and opportunity expansion programs by joint legislative audit and review committee.

(1) Beginning in 2018, the joint legislative audit and review committee shall evaluate the opportunity scholarship and opportunity expansion programs, and submit a report to the appropriate committees of the legislature by December 1, 2018. The committee's evaluation shall include, but not be limited to:

(a) The number and type of eligible education programs as determined by the opportunity scholarship board;

(b) The number of participants in the opportunity scholarship program in relation to the number of participants who completed a professional-technical certificate, professional-technical degree, or baccalaureate degree;

(c) The total cumulative number of students who received opportunity scholarships, and the total cumulative number of students who gained a professional-technical certificates, professional-technical degrees, or baccalaureate degree after receiving an opportunity scholarship and the types of professional-technical certificates, professional-technical degrees, or baccalaureate degrees awarded;

(d) The amount of private contributions to the opportunity scholarship program, annually and in total;

(e) The amount of state match moneys to the opportunity scholarship program, annually and in total;

(f) The amount of any administrative fees paid to the program administrator, annually and in total;

(g) The source and amount of funding, annually and cumulatively, for the opportunity expansion program;

(h) The number and type of proposals submitted by institutions for opportunity expansion awards, the number and type of proposals that received an award of opportunity expansion funds, and the amount of such awards;

(i) The total cumulative number of additional high employer demand degrees produced in Washington state due to the opportunity expansion program, including both the initial opportunity expansion awards and the subsequent inclusion in base funding; and

(j) Evidence that the existence of the opportunity scholarship and opportunity expansion programs have contributed to the achievement of the public policy objectives of helping to mitigate the impact of tuition increases, increasing the number of professional-technical certificates, professional-technical degrees, or baccalaureate degrees in high employer demand and other programs, and investing in programs and students to meet market demands for a knowledge-based economy while filling middle-income jobs with a sufficient supply of skilled workers.

(2) In the event that the joint legislative audit and review committee is charged with completing an evaluation of other aspects of degree production, funding, or other aspects of higher education in 2018, and to the extent that it is economical and feasible to do so, the committee shall combine the multiple evaluations and submit a single report.

RCW 28B.145.090

Investments by the state investment board.

(1) The board may elect to have the state investment board invest the funds in the scholarship account and endowment account described under RCW 28B.145.030(2)(b). If the board so elects, the state investment board has the full power to invest, reinvest, manage, contract, sell, or exchange investment money in the two accounts. All investment and operating costs associated with the investment of money shall be paid under RCW 43.33A.160 and 43.84.160. With the exception of these expenses, the earnings from the investment of the money shall be retained by the accounts.

(2) All investments made by the state investment board shall be made with the exercise of that degree of judgment and care under RCW 43.33A.140 and the investment policy established by the state investment board.

(3) As deemed appropriate by the state investment board, money in the scholarship and endowment accounts may be commingled for investment with other funds subject to investment by the state investment board.

(4) Members of the state investment board shall not be considered an insurer of the funds or assets and are not liable for any action or inaction.

(5) Members of the state investment board are not liable to the state, to the fund, or to any other person as a result of their activities as members, whether ministerial or discretionary, except for willful dishonesty or intentional violations of law. The state investment board in its discretion may purchase liability insurance for members.

(6) The authority to establish all policies relating to the scholarship account and the endowment account, other than the investment policies as provided in subsections (1) through (3) of this section, resides with the board and program administrator acting in accordance with the principles set forth in this chapter. With the exception of expenses of the state investment board in subsection (1) of this section, disbursements from the scholarship account and endowment account shall be made only on the authorization of the opportunity scholarship board or its designee, and moneys in the accounts may be spent only for the purposes specified in this chapter.

(7) The state investment board shall routinely consult and communicate with the board on the investment policy, earnings of the accounts, and related needs of the program.

Tab C

WSOS Staff Report

WASHINGTON STATE OPPORTUNITY SCHOLARSHIP

Supporting the next generation of STEM & health care leaders

QUARTERLY PROGRAM & ACTIVITIES UPDATE | NOVEMBER 2016

The following report highlights WSOS program and activities since our June 2016 Board Meeting.

I. PROGRAM UPDATE

COHORT 5 ORIENTATION

Cohort 5 Outreach | Over the summer, the Program Officers contacted our 1450 Cohort 5 Scholars. These conversations allowed us to introduce ourselves as their Program Officer, give a brief summary of WSOS context, requirements and program elements, and provide our team with critical updates on Scholars' contact and school information.

Opportunity Launch 2016 | For the first time in program history, WSOS offered a centralized orientation/welcome for new awardees. The goal of the Opportunity Launch program (OL) was to increase cohort cohesiveness, improve Scholar awareness and use of WSOS program opportunities in the future years, and ultimately enhance Scholar retention and placement. Nearly 200 Cohort 5 Scholars gathered from 68 cities from across the state at the UW Seattle campus in early August to attend workshops presented by academic and industry partners.

Evaluation data collected at the end of the Conference indicated that Scholars appreciated hearing from industry professionals (including keynote speaker, Janet Phan, Founder of Thriving Elements) and learning from campus representatives about resources awaiting them at their 34 prospective campuses in the fall. The data supports strong achievement of all program goals. Participants in OL reported the extent to which they agreed with statements on a scale of 1 (not at all) to 4 (to a great extent). Scholars reported a strong sense of community and belief in WSOS as more than money for college. Ninety-five percent reported they agreed to a moderate or great extent that they are part of a community as a WSOS Scholar (mean score=3.5). Even more impressively, 98 percent reported they believed to a moderate or great extent that WSOS offers more than money to Scholars (mean score=3.8).

Nine out of ten participants report they are more likely to engage with WSOS because of OL:

- 99% of attendees say they are more likely to read WSOS emails.
- 99% of attendees say they are more likely to participate in a WSOS-sponsored, supported, or promoted event.
- 96% of attendees say they are more likely to speak with WSOS staff in person.

Given the objective of the program to increase awareness and use of WSOS program opportunities, these outcomes are promising.

Finally, participants noted the importance of OL as a networking opportunity with both professionals and peers. Ninety-seven percent of respondents (n=148) provided a response to an open-ended response item. Eight themes were identified. The most commonly identified theme was in praising OL as a networking opportunity (mentioned by 43%, n=63), followed closely by noting the opportunity to meet peers with common interests and build a Scholar community (mentioned by 39%, n=57). Respondents were asked: **What would you tell your friends about why they should come to WSOS Opportunity Launch?** Two sample responses are below:

- » "I already did. They need to apply because this program will change their lives."
- » "You should come because it is a great experience. You get to meet so many smart people and people who overcame obstacles to be where they are right now. Coming from a background of struggles, that really helped in realizing that I can do anything I set my mind to."

The strong reported satisfaction and alignment of responses with program goals indicate a successful implementation of OL in its inaugural year.

SCHOLAR RETENTION

The four program officers now specifically support Scholars in the NW, SW, Central and Eastern regions. The ~3000 enrolled Scholars have been notified with the contact information and office hour schedules of their specific case manager. Office hours are already underway with Scholars receiving personal attention regarding their scholarship, college success guidance and career readiness tips.

SCHOLAR CAREER READINESS

Industry Explorations | As we roll out Industry Explorations across new settings in STEM and health care such as public schools and clinical medicine, we have identified the need to broaden our program framework. These opportunities will range from a one-time workplace visit with a group of Scholars to ongoing job shadows with individual Scholars. The goal remains the same: expose Scholars to employers, professionals, and career pathways in their field of study. Other program developments include new opportunities in Central and Eastern Washington and more robust Scholar communications such as post-event emails with tips to make the most of the experience. Summer Industry Explorations included medical education and cadaver labs at the Seattle Science Foundation, workplace and field visits with the King County Water and Land Resources Division, and a tour of Stemilt Growers' production facilities (see related article here: http://wenatchee.org/blog/2016/07/washington-state-opportunity-scholarship-recipients-tour-stemilt-growers/). Overall, more than 20 Scholars took part in Industry Explorations last summer. In less formal offerings, we facilitated the participation of Scholars in career-building programs offered by Liberty Mutual, Educurious and Seattle Pacific University (for rising teachers).

This fall, WSOS will offer Scholars the opportunity to shadow a PacMed physician on rounds and participate in visits to PACCAR's Kenworth Trucking company, the Bread Lab at the WSU Research Center in Skagit Valley) and multiple east side locations (e.g., Cycrest, 14Four, Eastern State Hospital, Deaconess Medical Center, Avista Corp, GeoEngineers, ITRON, Ptera, and St. Lukes Rehabilitation Institute).

Skills That Shine Mentorship | Through our network of employer partners and numerous lunch and learn presentations, WSOS has recruited nearly 200 STEM and healthcare professionals to serve as mentors in the Skills That Shine program this year. These mentors represent 60 companies across Washington state. The leading employer partners in this effort by employee participation are Juno Therapeutics, McKinstry, the Allen Institute, Washington STEM, GeoEngineers in Spokane, Atlas Infomatics, Expedia, Adaptive Biotechnologies, and Multicare Health System.

We are currently inviting Scholars to apply as mentees based on the available mentors' professional expertise and geographic location. We look forward to welcoming the pairs at the Skills That Shine Mentorship Kickoff events in November.

This year, the Battelle Memorial Institute is sponsoring four WSOS Scholars through a unique version of the Skills that Shine model. In addition to underwriting these Scholars' scholarship this year, these students will be explicitly mentored by Battelle staff. In early August, Battelle welcomed WSOS and the Association for Women in Science to their Seattle Research Center for an afternoon of networking and fun. Three of the WSOS Scholars that Battelle is sponsoring were in attendance. They appreciated learning about the many facets of Battelle's work – from national security solutions to public health innovations – and meeting many of the researchers themselves. Scholars Osman Salahuddin and Vlad Vlasenko even got the chance to experience some of that work first-hand when they got behind the wheel of the Battelle driving simulator!

Internships| WSOS encourages Scholars to gain hands-on experience, provides assistance with Scholars' application materials, and builds connections with companies looking for outstanding candidates. We appreciate that companies like the Boeing Company, Concur, the Center for Infectious Disease Research, and DevHub hosted Scholars this summer. In an effort to help Scholars connect with employers, we have revamped our online Job and Internship Resources Center with tips and advice to help Scholars launch the career of their dreams. It has been updated with new resources to assist at every step of the job or internship seeking process.

COHORT SIX PROMOTION

Early Promotion | This summer WSOS staff conducted early promotion efforts with targeted programs including GEAR UP, LASER, Washington STEM, Greater Spokane Incorporated, College Success Foundation's Achievers College Experience summer program at WSU, Goodwill, UW Nurse Camp, the Advanced Robotics STEM Camp (supported by WSU Scholar Grace Arbanas), Make It Happen, Future Farmers of America, the state 4-H Conference, Seattle MESA, Latino Expo (at Edmonds College), Spokane T-2-4 Circuit, and the Washington Space Grant Consortium.

Cohort 6 Promotion Strategy | The WSOS Scholarship recruitment goals for the 2016-17 school year are exciting. We are expected to select 1850 students in 2017 - up from 1450 this past year. The recruitment strategy is similar to the 2015-16 school year in that we will be doing direct promotion to target schools and indirect promotion through partners:

- **Champion Strategy**: Under the leadership of Theresa Britschgi and Terrie Ashby-Scott, WSOS again will be working with Washington STEM and their statewide networks in providing training and support to schools during the recruitment time period (January to the end of February). This

includes in person training to the networks, refresher training (via phone or SKYPE) to those trained last year, and general support as questions arise. Just as last year, school personnel are offered up to $200.00 if they provide an event at their school which assists with recruitment and supporting students to complete the application. Schools will also receive the names of students who have started (and completed the application) if their parents/guardian agreed to have their name shared with their home school.

- **Target Schools**: WSOS staff will be directly promoting the Scholarship to the 80 "target schools" Kimber Connors has identified based upon 2016 recruitment, school populations as well as new data sets prepared by UW mathematics undergraduates (senior project). Each school will be notified of the WSOS contact. In addition, they will be offered materials, a student or staff presentation or any other general support to assist the school in targeting, recruiting and successfully having students complete and submit the application. Let us know if there is a particular school you would like us to contact!

- **Other Partners**: Partners with similar audiences are also promoting the Scholarship including GEAR UP, Washington FIRST Robotics, Washington Student Achievement Council, WA STEM, College Access Now, UW Dream Project, Summer Search, and Friends of the Children.

II. DEVELOPMENT AND FUNDRAISING

MICROSOFT GIVE CAMPAIGN

We were fortunate enough to again participate in Microsoft's annual Give Campaign this year. In addition to procuring items for the company-wide online auction, WSOS was selected to be the beneficiary of a number of organizational fundraising events. We look forward to sharing totals from the Give Campaign at the December Board meeting.

GEEKS GIVE BACK

In the spring of 2016, the Washington State Opportunity Scholarship was again named the sole beneficiary of this year's GeekWire "Geeks Give Back" campaign, presented by Bank of America.

The Campaign kicked off in early October at the GeekWire Summit at the Sheraton in Seattle. Scholar Jordana Dahmen and WSOS Executive Director Naria Santa Lucia presented on the Opportunity Scholarship. This year, the Rubens Family Foundation has generously agreed (again) to provide matching funds of up to $250,000. Between the kick off the completion of the campaign in December 2016, the goal is to raise $1 million in scholarships, which we will likely surpass.

2016 OPPORTUNITY TALKS GRIT

Update will be provided at the WSOS Board Meeting.

III. MEDIA

We are thrilled and grateful for the strong earned media coverage we received to not only recognize and celebrate student success but to increase awareness and support of the program in communities across Washington.

EARNED MEDIA

Coverage Summary:

- With help of Opportunity Scholarship, man goes from homeless to UW master's degree program | ***Q13 Fox News***, October 25
- Genius vs. Grit: Psychologist Angela Duckworth tells Seattle crowd why hard work matters in football, business and life | ***Geekwire***, October 25
- Geeks Give Back: Meet Jordana Dahmen, stereotype-smashing researcher and biology student | ***Geekwire***, October 13
- Second annual Geeks Give Back launches to raise $1M for STEM education in Washington state | ***Geekwire***, October 4
- Boeing birthday bash gets its own special Alaska plane | ***The Seattle Times***, June 30

SOCIAL MEDIA

Social engagement continues to grow rapidly and remains a key channel through which we communicate with Scholars, community partners and the public.

Key social media growth and impressions June 13 - October 26, 2016:

Facebook

» 2,502 followers June 13, 2016
» 2,728 followers Oct. 26, 2016 **(+9%)**
» Total impressions (paid & organic): **179,486**

Twitter

» 1,305 followers June 13, 2016
» 1,431 followers Oct. 26, 2016 **(+9.7%)**
» Total impressions (paid & organic): **72,804**

WSOS OPPORTUNITY LAUNCH

KEY HIGHLIGHTS

WHAT IS OPPORTUNITY LAUNCH? From August 7th to 9th 2016, Washington State Opportunity Scholarship (WSOS) staff hosted 161 Scholars at the first Opportunity Launch (OL) conference. OL was intended to: provide Scholars with networking opportunities; build a WSOS Scholar community; educate Scholars about the supports WSOS provides; and prepare students for college and career through workshops, panels and discussions. In total, 153 participants (95%) completed the survey. These data provide information about the conference's perceived utility, learning outcomes and satisfaction. This report aims to provide evaluative feedback on the impact of the program and feedback to the WSOS team to strengthen future offerings to Scholars.

SCHOLARS REPORT A STRONG SENSE OF COMMUNITY & BELIEF IN WSOS AS MORE THAN MONEY FOR COLLEGE. Participants in OL reported the extent to which they agreed with statements on a scale of 1 (not at all) to 4 (to a great extent). Ninety-five percent reported they agreed to a moderate or great extent that they are part of a community as a WSOS Scholar (mean score=3.5). **Even more impressively, 98 percent reported they believed to a moderate or great extent that WSOS offers more than money to Scholars** (mean score=3.8).

NINE OUT OF TEN PARTICIPANTS REPORT THEY ARE MORE LIKELY TO ENGAGE WITH WSOS BECAUSE OF OPPORTUNITY LAUNCH. Because of their participation in OL, about nine out of ten Scholars report they are more likely to engage with WSOS throughout their undergraduate career:

- **99%** of attendees say they **are more likely to read WSOS emails.**
- **99%** of attendees say they **are more likely to participate in a WSOS-sponsored, supported, or promoted event.**
- **96%** of attendees say they **are more likely to speak with WSOS staff in person.**

PARTICIPANTS NOTE THE IMPORTANCE OF OPPORTUNITY LAUNCH AS A NETWORKING OPPORTUNITY WITH PROFESSIONALS AND PEERS. Ninety-seven percent of respondents (n=148) provided a response to an open-ended response item. Eight themes were identified. The most commonly identified theme was in praising OL as a networking opportunity (mentioned by 43%, n=63), followed closely by noting the opportunity to meet peers with common interests and build a Scholar community (mentioned by 39%, n=57). Respondents were asked: **What would you tell your friends about why they should come to WSOS Opportunity Launch?**

- "I already did. They need to apply because this program will change their lives."
- "You should come because it is a great experience. You get to meet so many smart people and people who overcame obstacles to be where they are right now. Coming from a background of struggles, that really helped in realizing that I can do anything I set my mind to."

OVERALL EVIDENCE POINTS TO STRONG SUCCESS OF FIRST-EVER OPPORTUNITY LAUNCH CONFERENCE. The strong reported satisfaction and alignment of responses with program goals of OL indicate successful implementation in the inaugural year. This is particularly clear in the alignment of the open-ended response item themes with the overall goals of the program.

Prepared by Kimber Connors

FULL REPORT

PROGRAM OUTLINE. From August 7th to 9th 2016, Washington State Opportunity Scholarship (WSOS) staff hosted 161 Scholars at the first Opportunity Launch (OL) conference. OL was intended to: provide Scholars with networking opportunities; build a WSOS Scholar community; educate Scholars about the supports WSOS provides; and prepare students for college and career through workshops, panels and discussions. In total, 153 participants (95%) completed the survey. These data provide information about the conference's perceived utility, learning outcomes and satisfaction. This report aims to provide evaluative feedback on the impact of the program and feedback to the WSOS team to strengthen future offerings to Scholars.

2016 PARTICIPANTS HIGHLY SATISFIED. Participants in OL were asked to provide feedback on four satisfaction question items by rating their experience on a scale from 1 (very unsatisfied) to 4 (very satisfied). Attendees rated their overall satisfaction highly with every item having a mean score of 3.5 or higher. The satisfaction item that received the highest mean score related to the utility of OL in helping attendees understand the WSOS program (mean score of 3.7 with 97% of attendees reporting being somewhat or very satisfied). The satisfaction item that received the lowest mean score related to the quality of college and career preparation activities and presentations (mean score of 3.5 with 93% of attendees reporting being somewhat or very satisfied). See **Table 1** for full details.

TABLE 1. High Satisfaction with Opportunity Launch

Satisfaction Item	Mean Score (out of 4)	% Reporting Somewhat or Very Satisfied
Overall, how useful was WSOS OL in helping you understand the WSOS Scholarship program?	3.7	97%
Overall, how satisfied are you with the WSOS Opportunity Launch in preparing you for college and ultimately for a career in a high- demand field?	3.6	97%
How satisfied are you with the quality of the college and career preparation information and resources provided at WSOS OL?	3.6	96%
How satisfied are you with the quality of the college and career preparation activities and presentations at WSOS OL?	3.5	93%

NINE OUT OF TEN PARTICIPANTS REPORT THEY ARE MORE LIKELY TO ENGAGE WITH WSOS BECAUSE OF OPPORTUNITY LAUNCH. Because of their participation in OL, about nine out of ten Scholars report they are more likely to engage with WSOS throughout their undergraduate career:

- 99% of attendees say they are more likely to read WSOS emails.
- 99% of attendees say they are more likely to participate in a WSOS-sponsored, supported, or promoted event.
- 96% of attendees say they are more likely to speak with WSOS staff in person.
- 95% of attendees say they are more likely to visit the WSOS website.
- 95% of attendees say they are more likely to call staff for scholarship or other support.
- 87% of attendees say they are more likely to follow WSOS on social media.

SCHOLARS REPORT STRONG SENSE OF COMMUNITY & BELIEF IN WSOS AS MORE THAN MONEY FOR COLLEGE. Participants in OL reported the extent to which they agreed with statements on a scale of 1 (not at all) to 4 (to a great extent). Ninety-five percent reported they agreed to a moderate or great extent that they are part of a community as a WSOS Scholar (mean score=3.5). Even more impressively, 98% reported they believed to a moderate or great extent that WSOS offers more than money to Scholars (mean score=3.8).

OPPORTUNITY LAUNCH ENHANCED SCHOLAR UNDERSTANDING OF WSOS. Participants in Opportunity Launch were asked to rate the extent to which they understand particular aspects of WSOS on a scale of 1 (not at all) to 4 (to a great extent). Respondents reported very high levels of awareness of all aspects of the WSOS program and its available supports for Scholars. See **Table 2** for full details.

TABLE 2. High Levels of Understanding of the Role & Function of WSOS

Understanding Item	Mean Score (out of 4)	% Reporting Moderate or Great Extent
I understand that the WSOS team tells me about offerings through email newsletters, the WSOS website and through social media websites (e.g., Facebook).	3.8	99%
I understand the year-to-year WSOS scholarship amount.	3.8	98%
I understand the benefits of WSOS programs and being an active Scholar.	3.7	99%
I understand the eligibility rules of WSOS.	3.7	98%
I understand the process for maintaining my WSOS scholarship (including renewal steps and requesting an increase).	3.6	95%
I understand how to access career programs and tools from my campus and WSOS along the undergraduate journey.	3.5	96%
I understand the roles of WSOS team members.	3.4	93%

PROMISING LEARNING OUTCOMES FROM WORKSHOPS. Workshop participants[1] were asked to rate the extent to which they understand the main learning objective of the session on a scale of 1 (not at all) to 4 (to a great extent). The workshop with the highest mean understanding score (3.7) was the Scientist Discussion Panel; 97 percent of respondents reported their understanding of the main learning outcome to a moderate or great extent. **Table 3** on the following page outlines the outcomes for the four workshops assessed.

[1] Respondents who indicated they did not attend a particular workshop are excluded from the analyses.

TABLE 3. High Learning Outcomes in Individual Workshops[2]

Workshop & Learning Outcome	Mean Score (out of 4)	% Reporting Moderate or Great Extent
Scientist Discussion Panel		
Learning outcome: I understand that many high-demand careers are achieved through diverse experiences and coursework (outside of major classes).	3.7	97%
Making the Most of Offerings at College		
Learning outcome: I understand how to discover the array of resources available at my campus.	3.6	97%
Community College Students		
Learning outcome: I understand what it means to be "major ready" versus "transfer ready".	3.5	90%
Money Management		
Learning outcome: I understand how to budget and be financially sound in college.	3.5	86%

PARTICIPANTS NOTE IMPORTANCE OF OPPORTUNITY LAUNCH AS A NETWORKING OPPORTUNITY WITH PROFESSIONALS AND PEERS. Ninety-seven percent of respondents (n=148) provided a response to an open-ended response item. Eight themes were identified. The most commonly identified theme was in praising OL as a networking opportunity (mentioned by 43%, n=63), followed closely by noting the opportunity to meet peers with common interests and build a Scholar community (mentioned by 39%, n=57). More than a third (36%) of responses noted that OL was a great learning experience which provided resources. **Table 4** on the following page outlines all eight themes identified and reports their frequency of mention. Respondents were asked:

What would you tell your friends about why they should come to WSOS Opportunity Launch?

» "I already did. They need to apply because this program will change their lives."

» "WSOS Opportunity Launch was very informative and helpful, especially as a first generation college student. It made me even more excited to begin college."

» "You should come because it is a great experience. You get to meet so many smart people and people who overcame obstacles to be where they are right now. Coming from a background of struggles, that really helped in realizing that I can do anything I set my mind to."

[2] It should be noted that ordering the scores in the table do not provide a relative rank order of workshop quality or effectiveness. Since the measurement tool only rated post-session understanding, the learning gains realized in each workshop cannot be measured. Therefore, it is possible that a workshop with a lesser overall mean score may have increased student understanding more than a workshop with a higher overall mean score but that overall beginning understanding may have been low.

TABLE 4. Themes from Open-Ended Responses

Theme	#	%
Networking Opportunity	63	43%
Meet Peers with Similar Interests	57	39%
Learning Experience & Resources	54	36%
Orientation to and Success in College Career	26	18%
Informative About WSOS	22	15%
Fun	21	14%
Planning for Career & Future	20	14%
Inspirational	9	6%

OVERALL EVIDENCE POINTS TO STRONG SUCCESS OF FIRST-EVER OPPORTUNITY LAUNCH CONFERENCE. The strong reported satisfaction and utility of OL indicates successful implementation in the inaugural year. This is particularly clear in the alignment of the open-ended response item themes with the overall goals of the program to: provide Scholars with networking opportunities; build a WSOS Scholar community; educate Scholars about the supports WSOS provides; and prepare students for college and career through workshops, panels and discussions.

Genius vs. Grit: Psychologist Angela Duckworth tells Seattle crowd why hard work matters in football, business and life

Published: Tuesday, October 25, 2016

Grits were on the menu Tuesday morning as the Washington State Opportunity Scholarship hosted their annual fundraising breakfast in downtown Seattle, drawing hundreds of leaders in business, politics and education to discuss how hard work, determination and perseverance oftentimes trumps raw skill.

The breakfast raises money for students in Washington state who are pursuing degrees in science, technology, engineering and math, the majority of whom are the first in their families to attend college and 57 percent of whom are women. (GeekWire is a partner with WSOS, raising money for the organization through our Geeks Give Back campaign this fall).

Delivering the message of grit — over grits — was none other than Angela Duckworth, the professor of psychology at the University of Pennsylvania and best-selling author of Grit. Duckworth offered some insights on grit, taking the stage after remarks from Gov. Jay Inslee and telling the more than 900 in attendance why hard-work is so darn important to human development.

“Talent and effort are not the same thing,” said Duckworth, who has advised politicians, CEOs and sports stars over the years, including Seattle Seahawks coach Pete Carroll who embodies the characteristics found in the psychologist’s research. “And you really do need both to create any complex human skill, be it acting, be it playing football, be it running a large global corporation. Talent times effort yields human skill.”

Emphasizing that point, Duckworth used a video of comedian and actor Will Smith, who said the only thing that makes him different is that he refuses to be “outworked.”

“I don’t care how talented you are, I don’t care how easily things come to you, in what you have chosen to do,” said Duckworth. “Talent does not immediately convert into skill, into mastering something, unless you summon forth high-quality, high-quantity effort.”

In other words, Duckworth noted that “effort, in my book, counts twice.”

So, how do you cultivate grit?

Duckworth offered this first piece of advice: “Children, and grown ups, don’t do anything with passion unless they are interested in it…. Interests are not discovered as much as developed with experience.”

In many cases, interests germinate over a number of years, and only develop when they come with real experience, she said.

Secondly, Duckworth said that young people need to learn the “science of practice.”

Kids often watch people effortlessly perform a skill on YouTube, thinking that they just naturally occurred. “What is hidden is the thousands of hours of clumsy, confused, one-step forward, two-steps backwards practice that is truly a hallmark of experts in every field that is studied,” she said.

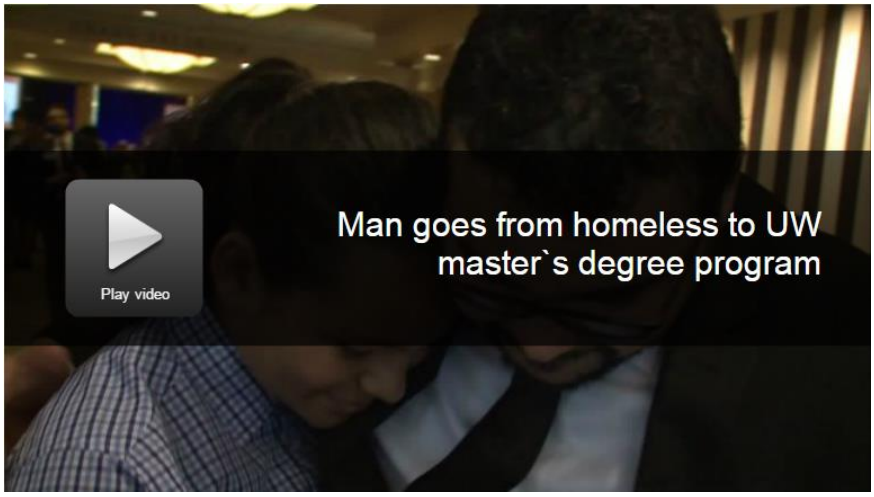
Those who excel in certain fields do not let frustration bog them down when they fail in practice, instead using that to analyze and adjust how to move forward. Frustration should not be used as a sign that you can’t do something — say math or sports or computer — but instead a signal that you’ve just not yet mastered a skill. “That’s exactly how experts get to be so fluent, so excellent, at whatever their chosen craft is,” Duckworth said.

Duckworth’s presentation was followed by an amazing 12-minute talk by Mark Bennett, a Washington State Opportunity Scholar who emerged from homelessness to study mathematics at the University of Washington.

Written by John Cook

With help of Opportunity Scholarship, man goes from homeless to UW master's degree program

Published: Tuesday, October 25, 2016



The economy is booming in Seattle right now thanks to high-tech jobs, and one local program is making sure those are filled with graduates from right here in Washington.

Leaders from major employers like Boeing, Microsoft, Alaska Airlines and Costco attended a fundraising breakfast at the downtown Sheraton for the Washington State Opportunity Scholarship.

However, it was Mark Bennett's story that left everyone empowered. At 18, Bennett was homeless in Seattle, battling addiction and without custody of his son.

"Everything I had fit into one green duffel bag," he told a packed room of about 900 people. Bennett sometimes stayed in the shelter near the UW.

"When I was out there drinking, I was full of guilt and shame of not being a good father, of not being the person I want to be," he said.

Now, he's getting a master's degree in applied mathematics from the UW and teaching other students.

He first enrolled at Seattle Central Community College and then received the Opportunity Scholarship.

"Because they were there for me and they helped guide me in the right direction, it just eventually started to happen. It was like, wow, this is happening," said Bennett.

Now, he is raising his son and epitomizing grit.

Mark is one of 6,800 students awarded the scholarship since the program started five years ago. The nonprofit private-public partnership is fundraising to pay tuition costs for another 3,100 students this year in science, technology engineering and math or STEM to drive homegrown students into those jobs first.

“When we have our students graduate from our program, we find that while their family made about $36,000 of income for a family of four, when they graduate, a majority of them are making between 40- and 70-thousand dollars,” said Executive Director Naria Santa Lucia.

Their goal for the breakfast was to raise $1 million.

“The WSOS program is important to me because that was me. I grew up poor. I didn`t have an opportunity to go to college,” said board member Gary Rubens.

The philanthropist and angel investor matched every donation, which was then matched by the state.

“This helps them break the cycle of poverty in their family and then they'll go help their siblings go to college, navigate the system,” said Rubens.

Fifty-nine percent of the scholarship recipients are the first in their family to go to college.

“The scholarship validated me at a time when I really needed that,” said Bennett.

For more information on the program, go to https://www.waopportunityscholarship.org/

Written by David Rose

Geeks Give Back: Meet Jordana Dahmen, stereotype-smashing researcher and biology student

Published: Tuesday, October 13, 2016

Jordana Dahmen isn't your typical biology student. She strode on stage during the 2016 GeekWire Summit in striking pink heels, and told the audience about her start in science — blowing up Barbie dolls with fireworks — and her passion for medical research.

Dahmen said her childhood forays into Barbie doll explosions were what first inspired her to study science in college. But reaching that dream would take more than just duct tape and a child's curiosity.

"Spring of my senior year, I stared at my acceptance letter to WSU," Dahmen said. "The harsh reality set in: there was no way that my family or I could afford for me to go to college. About a month later, I received an email saying that I had received the Washington State Opportunity Scholarship, and it was like I had found the golden ticket," she said.

Dahmen is one of hundreds of Washington students who receive aid from the WSOS every year to support their studies in science, technology, engineering and math — key areas which are driving the Pacific Northwest's economy forward. Since receiving the scholarship, she has become a leading figure in WSU's undergraduate research, and is currently applying to PhD programs in biomechanics.

Her speech at the GeekWire summit was part of the launch of the second annual Geeks Give Back campaign, a philanthropic program hosted by GeekWire and Bank of America, which raises money for the WSOS. This year, we're asking the technology community in Washington state to contribute in a big way, with the goal of raising $1 million to fund scholars in the state like Dahmen.

Written by Clare McGrane

Second annual Geeks Give Back launches to raise $1M for STEM education in Washington state

Published: Tuesday, October 4, 2016

Angel investor Gary Rubens and Washington State Opportunity Scholarship Executive Director Naria Santa Lucia announce the second annual Geeks Give Back campaign. (Photo by Dan DeLong)

Every year, Washington state's tech industry adds thousands of new jobs that require a computer science degree — but the state graduates only 500 people qualified to fill them. This bottleneck in the pipeline is creating huge tech talent shortages and stifling innovation in fields from cloud computing to healthcare, and everywhere in between.

That's why GeekWire teamed up with Bank of America to launch the Geeks Give Back program, which raises funds for the Washington State Opportunity Scholarship (WSOS), supporting students studying STEM in Washington state. Last year, our inaugural campaign raised over $500,000 thanks to the generosity of organizations and individuals in our community.

But this year we're going even bigger.

At the GeekWire Summit Tuesday, we launched the second annual Geeks Give Back campaign with the goal of raising $1 million to support STEM education in Washington state.

The campaign and the new goal were announced today at the GeekWire summit by Naria Santa Lucia, executive director of the WSOS, and Gary Rubens, a northwest entrepreneur and investor, representing the Rubens Family Foundation.

Seattle has a long legacy of philanthropy and investing in our community, and this year we are asking companies and individuals in our Seattle tech community to pitch in by donating to Geeks Give Back.

Rubens previewed the Rubens Family Foundation's gift during the announcement today.

“If we can raise $250,000 from the Geeks, I will match it,” Rubens said. All donations will also be matched by the state of Washington, meaning every dollar donated by our community will be quadrupled.

WSOS supports a diverse group of low- and middle-income students studying tech, science, math, and engineering in Washington state, like Rutha Nuguse, who shared her story at during last year’s kickoff, and Jordana Dahmen, who will speak about her experience as a WSOS scholar during the GeekWire Summit Wednesday.

Over half of the scholars that WSOS supports are students of color, almost 60 percent of all scholars are the first-generation college students, and 57 percent of the scholars are female.

Written by Clare McGrane

The Seattle Times

Boeing birthday bash gets its own special Alaska plane

Published: Thursday, June 30, 2016

Alaska Airlines, which maintains an all-Boeing fleet, helped the aerospace giant mark 100 years of plane building. A crowd of 700 business and government leaders joined the festivities.

Alaska Airlines and 700 local business and government leaders gathered Thursday to celebrate Boeing's 100th birthday at the Museum of Flight, unveiling a specially painted Alaska 737.

The new jet marks the 153rd Boeing 737 in Alaska's all-Boeing fleet and features a Boeing logo with "100 years strong" painted on both sides of the fuselage.

"This, for all of us here, is personal," said Brad Tilden, CEO of the Seattle-based air carrier. "Boeing is a fundamental part of the fabric of this community and we all are as well."

Boeing will officially celebrate its birthday July 15, with Thursday's event being one of many summer activities celebrating the aerospace company's 100th.

With Boeing Field as a backdrop and jets disappearing into the clouds above, local business leaders and government officials from across the state socialized and listened to music and speeches.

A performance by Global Connections High School's Jazz Band kicked off the day and set the jovial tone that marked the event.

Seattle Seahawks quarterback Russell Wilson, an ad spokesman for Alaska, arrived with the University of Washington marching band and cheer team.

While the Alaska 737's arrival was delayed, Wilson held an impromptu question-and-answer session with the audience, talking about everything from his preference in cars to his life advice for young people.

The jet arrived, bringing Tilden, Boeing Commercial Airplanes CEO Ray Conner, five Washington governors and a group of children.

Tilden gave Wilson a wedding blessing; the quarterback is engaged to singer Ciara. "May you always call the right audible, and when you call the wrong audible may you always apologize quickly," Tilden joked.

At the event, Alaska and the business community presented Boeing with a $100,000 donation to the Washington State Opportunity Scholarship. The fund aims to help low- and middle-income state residents earn degrees in science, technology, engineering and mathematics. Boeing matched the donation with a $100,000 donation.

Conner reflected on how the success of Boeing today is not only the product of Washington support, but also the product of the ingenuity and passion of its employees.

"We have great people today that do amazing things," said Conner, "but the only reason we are there is because of the amazing people that came before us."

Another highlight of the event was the appearance of five Washington governors: current Gov. Jay Inslee, and former governors Chris Gregoire, Gary Locke, Mike Lowry and Dan Evans.

Inslee recalled the first time he rode on a Boeing airplane as a child and shared an optimistic outlook.

"When you think of how far we've come since those days, imagine what the next 100 years can be," he said.

Written by Charles Clark

Tab D

Finance & Investment Report

Agenda

WSOS Investment & Finance Committee Meeting

October 17, 2016, 1:00pm - 2:00 pm

Call-in: 877.366.0711 – PIN: 819-453-48#
WSOS in CR-Executive

1.	Call to Order	Mack H.
2.	Approval of 06/14/16 Minutes	Mack H.
3.	WSIB Report	Chris P.
4.	Financial Update	Darrell P.
5.	Executive Session	Mack H.
6.	Adjourn	Mack H.

NEXT MEETING:
Date and Time TBD

WASHINGTON STATE OPPORTUNITY SCHOLARSHIP

Supporting the next generation of STEM & health care leaders

FINANCE & INVESTMENT COMMITTEE MEETING MINUTES | TUESDAY, JUNE 14, 2016

Members present: Mack Hogans, Chair; Naria Santa Lucia (WSOS Executive Director), Darrell Powell (CSF Chief Financial & Administration Officer), Karyl Gregory (WSOS Staff), and Debra Wilson (CSF Staff)

Others present via teleconference: Bob Moser, Peter Harvey, Carolyn Kelly, Allyson Tucker (Washington State Investment Board), Chris Phillips (Washington State Investment Board)

Mack Hogans, Committee Chair, called the meeting of the Washington State Opportunity Scholarship (WSOS) Finance and Investment Committee to order at 2:05 pm.

Approval of Minutes from April 5, 2016 Finance and Investment Committee

Carolyn Kelly made a motion and Peter Harvey seconded the motion to approve the minutes of the April 5, 2016 meeting. The motion carried.

WSIB Report

Allyson Tucker, CFA – Senior Investment Officer at the Washington State Investment Board (WSIB), provided a performance review of WSOS funds invested through April 30, 2016.

Tucker presented the WSIB portfolio review through April 30 including potential personnel turnover. The Treasurer is not running for re-election and there is a new Senate President appointee.

Tucker reported there is strong early growth in WSOS funds. The Scholarship account is within policy limits for the 60-40 split and requires no rebalancing. The Endowment account is also within targets/limits. We received two contributions for state match funds. All state match funds are held in cash because that is currently the only option which is offered for government funds.

Tucker will explore options for placing some of the state funds in a Treasury portfolio for the Endowment account (outside of WSIB) as well as a portion of the Scholarship account so cash flow is not detrimentally impacted. Tucker, Bob Moser, and Peter Harvey will discuss options and this subject will be covered at the September committee meeting. Darrell Powell reported that the Scholarship match funds are currently being used for the annual drawdown for scholarships.

At the last meeting, it was announced that the Attorney General's Office made its decision that investments in private equities are disallowed because those funds are considered to be state funds and therefore restrictions apply. Only a constitutional amendment can change that status.

Tucker reported that WSIB meets regularly with legislative staff members and the information is posted on their website.

WASHINGTON STATE OPPORTUNITY SCHOLARSHIP

Supporting the next generation of STEM & health care leaders

Financial Update

Powell provided an update on WSOS finances and investments through April 30, 2016. Powell noted that $20.3M of state match funds were received and invested with the Washington State Investment Board. Scholarship expense of $9.4M was under budget by $1.7M. Santa Lucia explained that the first cohort of students graduated at a much faster pace than originally projected. Net assets are $15M over budget largely as a result of the Ballmer Foundation gift of $11M earlier in the fiscal year.

The Committee asked that in the future the financial report consider removing the Scholarship Transfer Revenue from the Revenue/Expense Report and add a footnote instead to disclose it.

The meeting adjourned and the Committee went into Executive Session at 2:49 pm.

After a brief executive session, the meeting was adjourned.

Respectfully submitted,
Mack Hogans

Washington State Investment Board

WSOS Investment and Finance Committee

Performance Review

October 17, 2016



Chris Phillips
Director of Institutional Relations

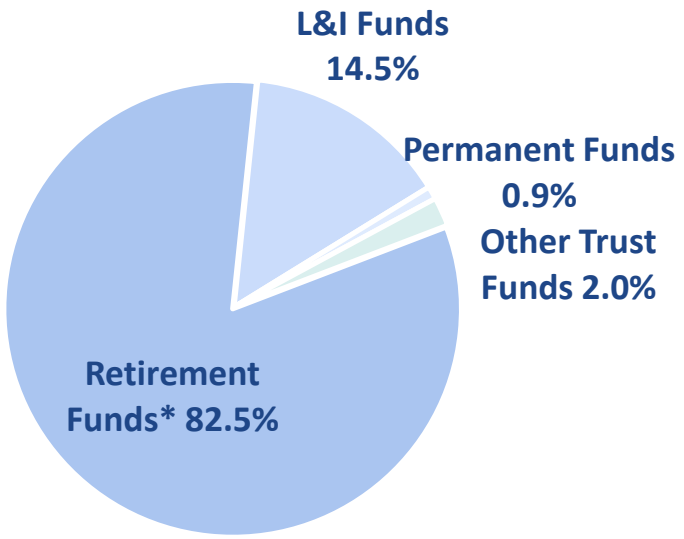
Overview of the Washington State Investment Board (WSIB)

The WSIB invests on behalf of 35 funds

- 17 Retirement Funds
- 5 State Insurance Funds
- 13 Permanent and Other Trust Funds

Assets Managed by the WSIB as of August 31, 2016
$111.8 Billion

Washington State Opportunity Scholarship program falls under Other Trust Funds



*Defined Benefit Fund, Defined Contribution Funds, and Higher Education Retirement Plan

WSIB – Board Membership

Board comprised of 15 members – a balance of elected officials, state agency leaders, representatives of beneficiary groups and independent investment professionals

This fall we will see several significant changes in Board membership/roles:

- Kelly Fox was elected WSIB Chair in September
- Department of Retirement Services – Tracy Guerin, Deputy Director of Office of Financial Management, has been appointed by the Governor to replace Marcie Frost, who was hired as Chief Executive Officer of CalPERS
- State Treasurer – November election will determine whether Duane Davidson (Benton County) or Michael Waite (Seattle area) fills this ex-officio seat
- Senator Mike Hewitt has retired; his replacement will be appointed this fall by the President of the Senate (Lieutenant Governor), based on majority membership of the Senate
- Representative Tim Ormsby will retain his existing board seat unless the GOP gains a majority in the House of Representatives in November

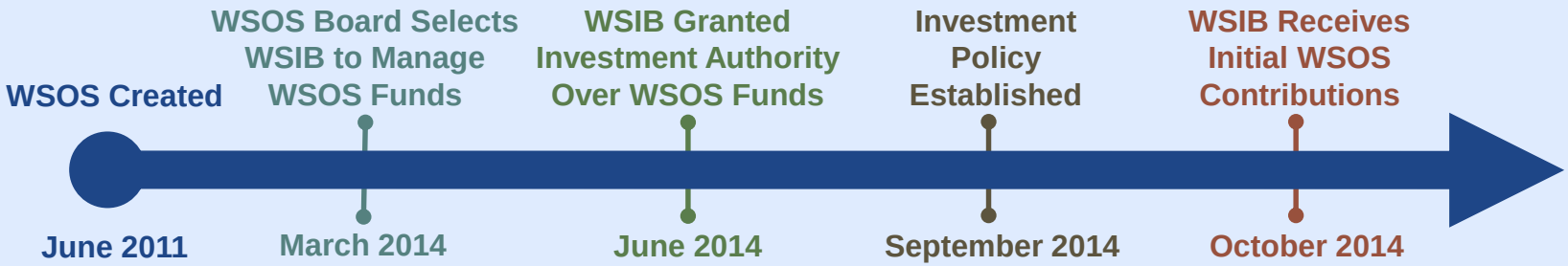
Overview of the Washington State Opportunity Scholarship Program (WSOS)

The WSOS was created by the Legislature in 2011. The WSOS board selected the WSIB to invest on its behalf in March 2014

Investment Objectives

- Maintain the financial stability of the program
- Ensure sufficient assets are available to fund the scholarship goals of the program over a 10-year time horizon
- Subject to one and two above, manage the assets to maximize return at a prudent level of risk
- Invest in a manner that will not compromise public confidence in the program

Time Line



Growth of WSOS Funds

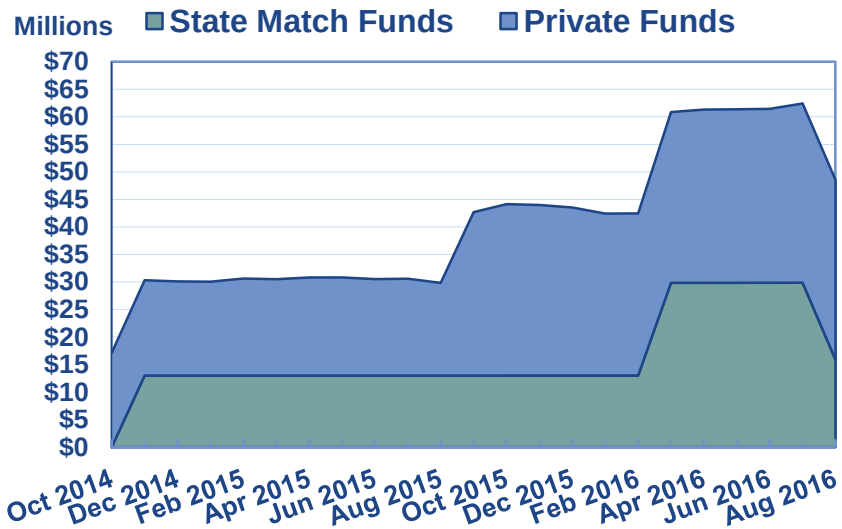
Scholarship Account

- Total assets as of August 31, 2016, were $48.5 million, comprised of 67% private funds and 33% state match funds; $14 million was withdrawn in August to fund WSOS scholarship and operating budgets

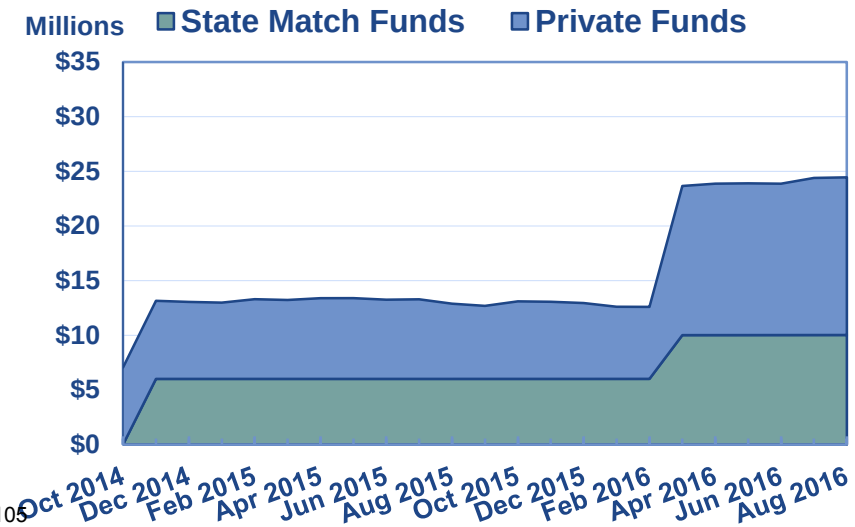
Endowment Account

- Total assets as of August 31, 2016, were $24.4 million, comprised of 59% private funds and 41% state match funds

Growth of Scholarship Account Assets



Growth of Endowment Account Assets

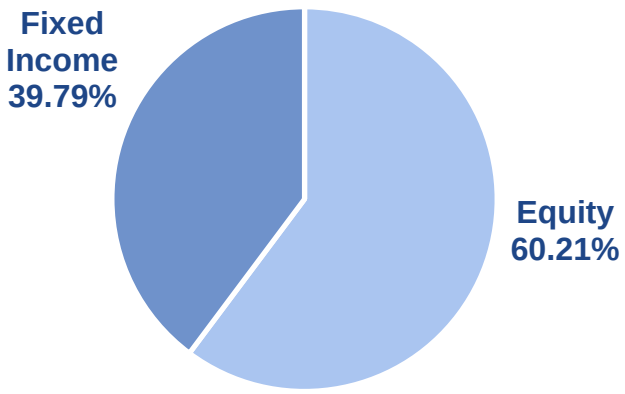


WSOS Scholarship Account

Private Funds

August 31, 2016 Allocation

Market Value $32,665,639



Current Targets

	Target	Range
Cash	0%	0% - 5%
Public Equity	60%	55% - 65%
Fixed Income	40%	35% - 45%

The Equity portfolio is passively managed by BlackRock and is expected to closely track the MSCI All Country World Investable Market Index

The Fixed Income portfolio is actively managed by WSIB staff and is expected to meet or exceed the Bloomberg Barclays U.S. Intermediate Credit Index

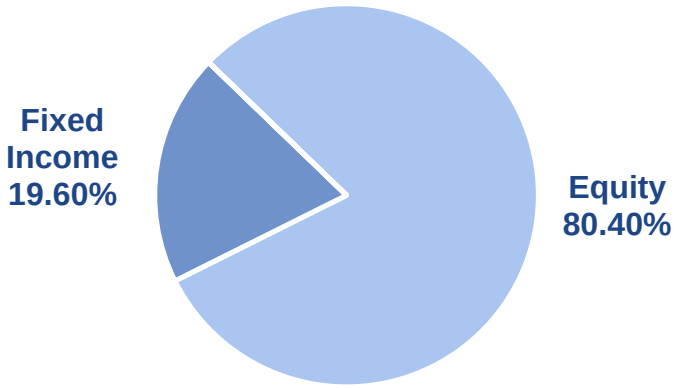
The Cash portfolio is invested in a money market fund managed by BlackRock

WSOS Endowment Account

Private Funds

August 31, 2016 Allocation

Market Value $14,419,360



Current Targets

	Target	Range
Cash	0%	0% - 5%
Public Equity	80%	75% - 85%
Fixed Income	20%	15% - 25%

The Equity portfolio is passively managed by BlackRock and is expected to closely track the MSCI All Country World Investable Market Index

The Fixed Income portfolio is actively managed by WSIB staff and is expected to meet or exceed the Bloomberg Barclays U.S. Intermediate Credit Index

The Cash portfolio is invested in a money market fund managed by BlackRock

WSOS Scholarship and Endowment Accounts

State Match Funds

August 31, 2016	
Scholarship Market Value	$15,869,054
Endowment Market Value	$10,016,239

State match funds are held in cash

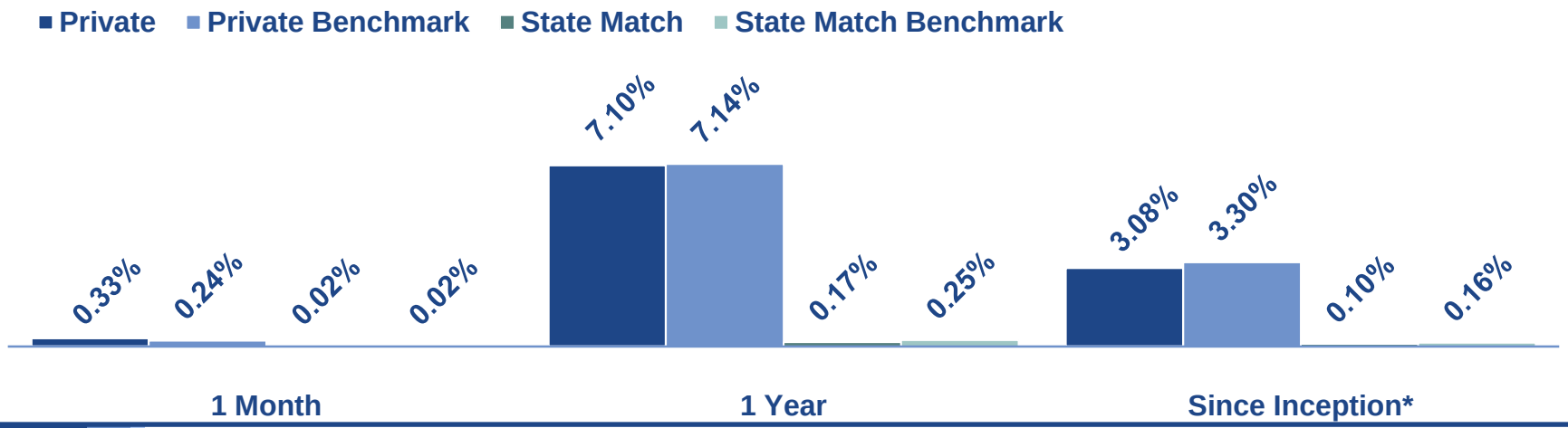
Both the target and current allocation are 100% cash

The cash portfolios are invested in a government and agency money market fund managed by BlackRock

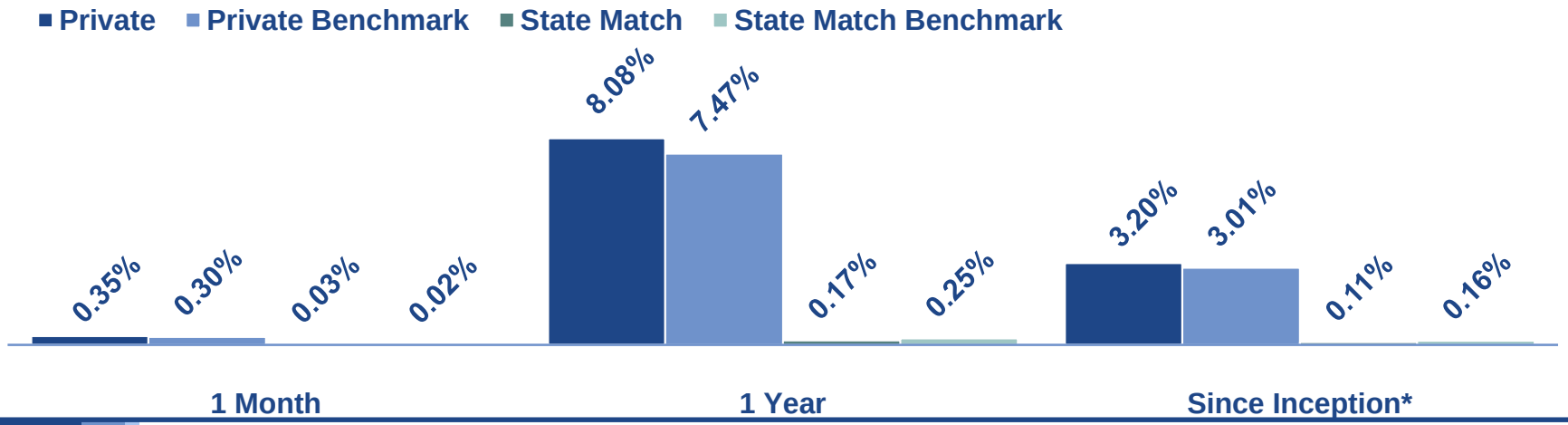
Early Account Returns

August 31, 2016

Private and State Match Scholarship



Private and State Match Endowment

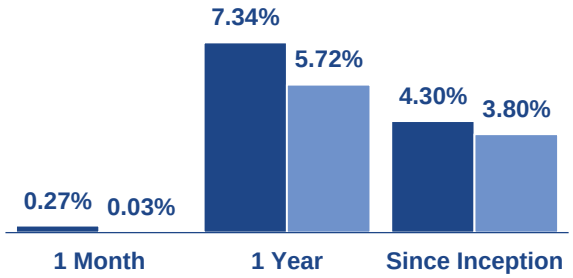


Scholarship Benchmarks: Private 60% MSCI ACWI IMI w/U.S. Gross & 40% Bloomberg Barclays Intermediate Credit, State Match 90 Day T-bill
Endowment Benchmarks: Private 80% MSCI ACWI IMI w/U.S. Gross & 20% Bloomberg Barclays Intermediate Credit, State Match 90 Day T-bill
* Since Inception: Private 10/1/14, State Match 11/25/14

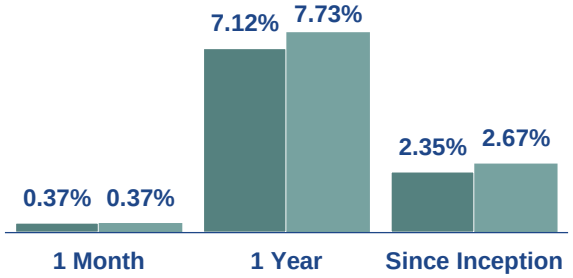
WSIB Fund Performance Compared to Market Indices

August 31, 2016

Private Scholarship

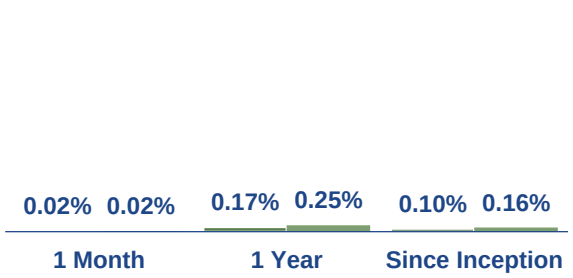


WSIB Fixed Income vs. Bloomberg Barclays Intermediate Credit



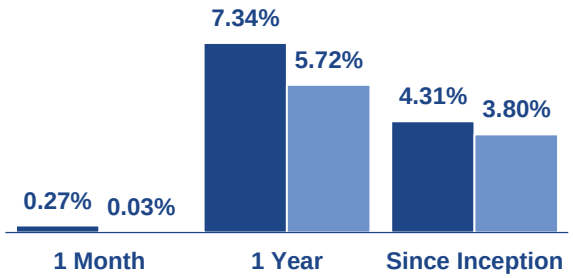
WSIB Global Equity vs. MSCI ACWI IMI w/ U.S. Gross

State Match Scholarship

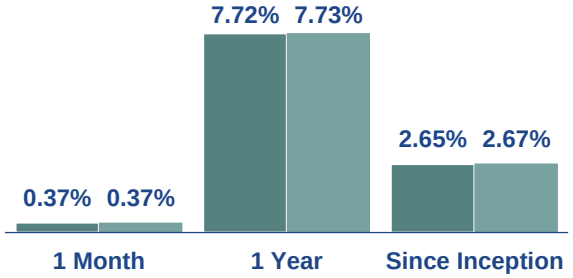


Cash vs. 90 day T-Bill

Private Endowment

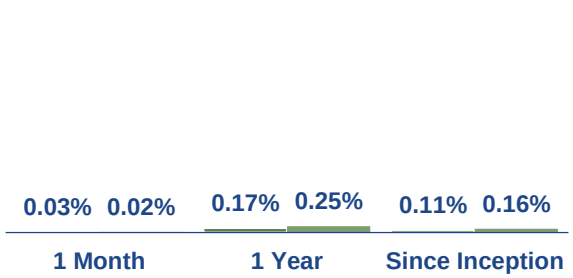


WSIB Fixed Income vs. Bloomberg Barclays Intermediate Credit



WSIB Global Equity vs. MSCI ACWI IMI w/ U.S. Gross

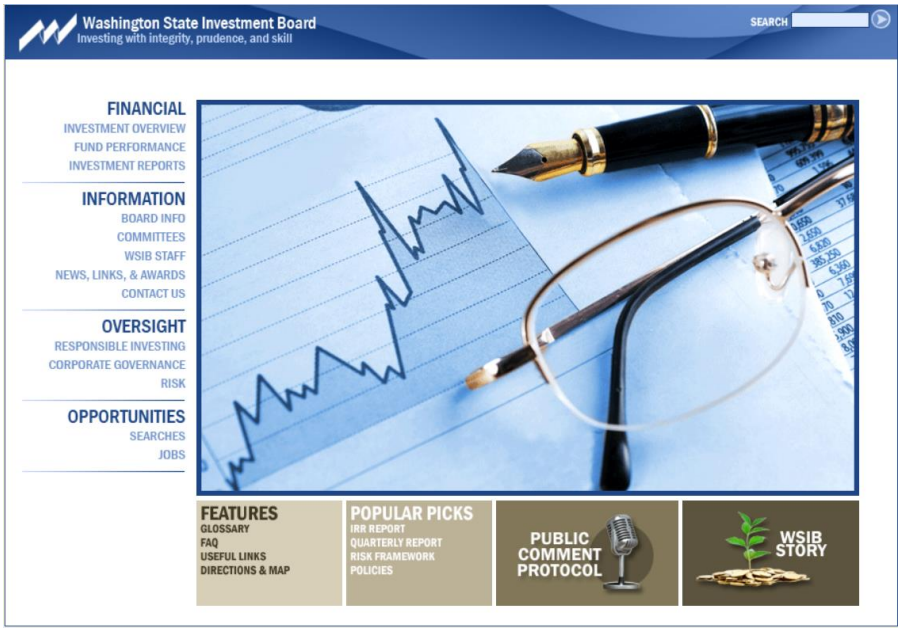
State Match Endowment



Cash vs. 90 day T-Bill

Contact Information

Web Site: http://www.sib.wa.gov



Address: 2100 Evergreen Park Drive SW
P.O. Box 40916
Olympia, WA 98504-0916

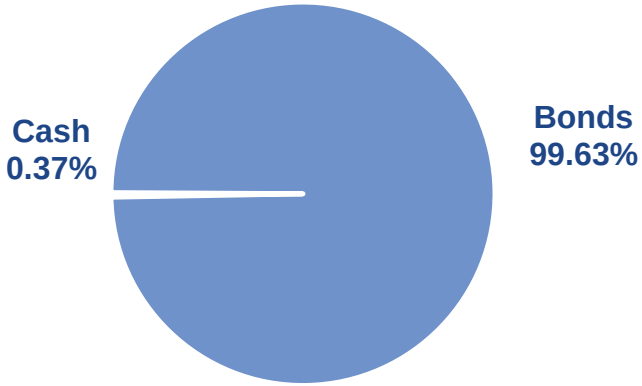
Phone Number: (360) 956-4600

Appendix: Bond Fund Characteristics & Top 10 Issuers

June 30, 2016

Allocation

Market Value	$1,824,952,449



Characteristics

	Fund	Index
Average Maturity	5.2 years	4.9 years
Yield to Maturity	2.55%	2.16%
Modified Duration	4.60	4.37
Average Coupon	3.37%	3.50%
Number of Holdings	254	4,402

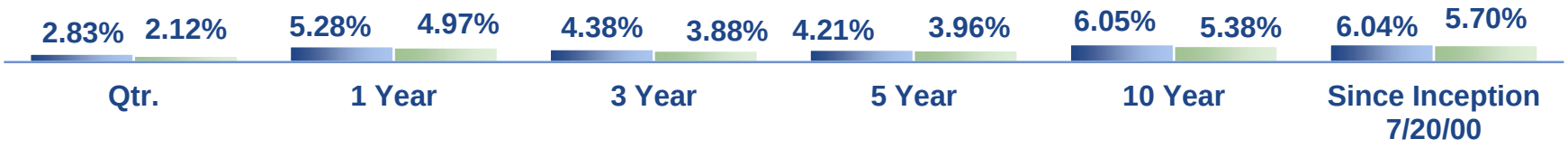
Top 10 Issuers

U.S. Treasury Notes	1.39%
Ontario, Province of	1.01%
International Finance Corp.	0.94%
Cencosud SA	0.89%
Burlington Northern Santa Fe Corp.	0.88%
Air Products and Chemicals, Inc.	0.88%
Waste Management Inc.	0.87%
Manitoba, Province of	0.87%
Macquarie Bank Ltd.	0.86%
PNC Bank, National Assocation	0.85%

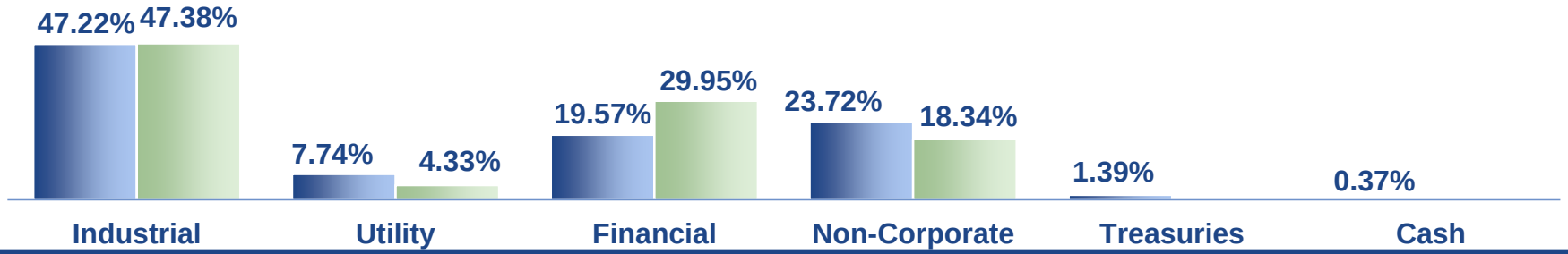
Appendix: Bond Fund Performance, Sector Distribution & Ratings

June 30, 2016

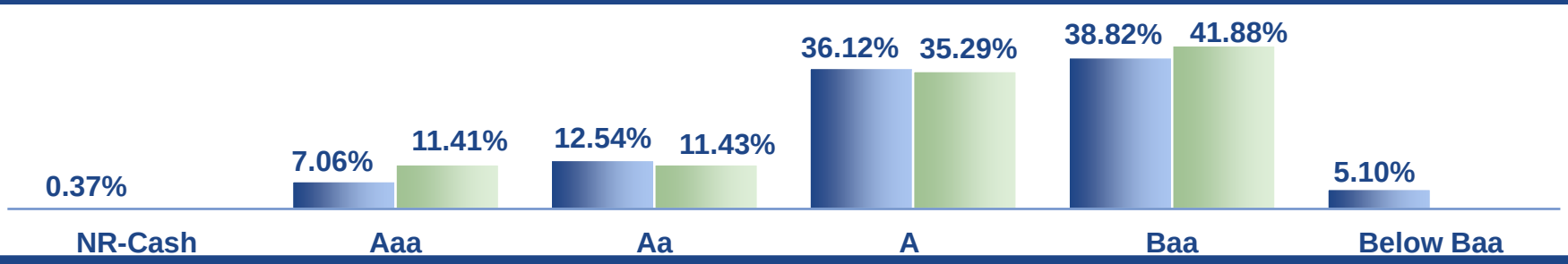
Total Return



Sector Distribution



Moody's Equivalent Ratings



WASHINGTON STATE
OPPORTUNITY
SCHOLARSHIP

Supporting the next generation of STEM & health care leaders

FINANCE UPDATE

Finance/Investment Committee Meeting | October 17, 2016

WSOS Balance Sheet

WASHINGTON STATE OPPORTUNITY SCHOLARSHIP

Supporting the next generation of STEM & health care leaders

Washington State Opportunity Scholarship
Comparative Balance Sheets
Period Ending August 31, 2016

	Comparison to FYE				Comparison to Same Period LFY		
	06/30/2016	% Change	08/31/2016	Notes	08/31/2015	% Change	08/31/2016
Assets							
Cash	2,243,707	455%	12,453,324	1	12,367,800	1%	12,453,324
Investments	85,316,061	-14%	72,981,652	2	53,201,998	37%	72,981,652
Pledges and Grants Receivable	25,428,522	1%	25,734,643		22,620,095	14%	25,734,643
Prepaid Expenses	48,175	-47%	25,650		14,784	0%	25,650
Total Assets	**113,036,465**	-2%	**111,195,269**		**88,204,678**	26%	**111,195,269**
Liabilities and Net Assets							
Accounts Payable	228,962	47%	335,745	3	110,725	203%	335,745
Payroll Related Liabilities	131,958	29%	169,832		141,798	20%	169,832
Scholarship Commitments	36,937,798	-10%	33,298,448		30,643,979	9%	33,298,448
Total Liabilities	**37,298,718**	-9%	**33,804,025**		**30,896,502**	9%	**33,804,025**
Net Assets							
Temporarily Restricted Net Assets	51,700,427	2%	52,587,066		36,203,667	45%	52,587,066
Permanently Restricted Net Assets	24,037,319	3%	24,804,179		21,104,509	18%	24,804,179
Total Net Assets	**75,737,746**	2%	**77,391,245**		**57,308,176**	35%	**77,391,245**
Total Liabilities and Net Assets	**113,036,465**	-2%	**111,195,269**		**88,204,678**	26%	**111,195,269**

WSOS Balance Sheet

WASHINGTON STATE OPPORTUNITY SCHOLARSHIP

Supporting the next generation of STEM & health care leaders

Notes to the Financials

1. Increase in Cash reflects a $14M infusion of cash from WSIB to fund scholarships and operating expenses for FY 2017.

2. $14M drawdown from WSIB. See note 1 above.

3. Operating expenses paid by CSF and billed back to WSOS.

WSOS Income Statement

Washington State Opportunity Scholarship

Income Statements

Income Statement for the Ten (2) Months Ending August 31, 2016

	Two Months Ended August 31, 2016				June 30, 2017
	Actual	Budget	Variance Fav (Unfav)	Notes	Annual Budget
Revenue					
Private	388,753	500,000	(111,247)		11,000,000
Public	-	-	-		21,000,000
Investment Income	1,662,897	-	1,662,897	1	-
Total Revenue	**2,051,650**	**500,000**	**1,551,650**		**32,000,000**
Expense					
Salaries and Benefits	149,064	202,928	53,864	2	1,022,994
Program Other Direct	171,249	107,849	(63,399)	3	514,095
Allocated Indirect Overhead	14,974	36,865	21,891	4	221,190
Professional Fees - CSF Admin Support	63,317	63,317	-		379,902
Professional Fees - Contractors	7,486	8,000	514		48,000
Total Expense	**406,090**	**418,959**	**12,870**		**2,186,180**
Net Income (Loss)	**1,645,560**	**81,041**	**1,564,520**		**29,813,820**
Scholarships					
Scholarship Expenses	3,606,947	3,670,702	63,756		12,235,674

WSOS Income Statement

WASHINGTON STATE OPPORTUNITY SCHOLARSHIP

Supporting the next generation of STEM & health care leaders

Notes to the Financials

1. Unrealized gains from investment held at WSIB. We don't budget or estimate gains and losses from investments.

2. Salary expense of $40k represents timing, the remaining amount represents an unfilled position.

3. Honorarium and travel expenses of $28k not captured in the budget.

4. Promotional expenses for Opportunity Talks and other program related expenses budgeted to an indirect expense account but charges recorded to direct expense accounts. Reclassification will correct variance.

WSOS Cash Flow

WASHINGTON STATE OPPORTUNITY SCHOLARSHIP

Supporting the next generation of STEM & health care leaders

Washington State Opportunity Scholarship

Cash Flow Summary

Inception-To-Date

August 31, 2016

	Inception - August 31, 2016		
	Scholarship	**Endowment**	**Total**
CASH FLOW			
Cash Inflow:			
Boeing	12,500,000	12,500,000	25,000,000
Microsoft	27,500,000	-	27,500,000
Other Private	15,672,808	1,015,578	16,688,386
State	40,354,000	10,000,000	50,354,000
Investment Income	2,195,505	949,773	3,145,278
Total Cash Inflows	98,222,313	24,465,351	122,687,664
Cash Outflow:			
Scholarships	(30,289,882)	-	(30,289,882)
Program Expenses	(6,990,730)	(29,119)	(7,019,849)
Total Cash Outflows	**(37,280,613)**	**(29,119)**	**(37,309,732)**
Net Cash Flow Inception-To-Date & Balance of Cash & Investments August 31, 2016	**60,941,701**	**24,436,232**	**85,377,932**
WSOS US Bank Account	12,453,324	-	12,453,324
Oppenheimer Account	10,728	632	11,360
Balance per WSIB August 31, 2016	**48,477,649**	**24,435,599**	**72,913,248**