WASHINGTON STEM
REIMAGINING SCIENCE, TECHNOLOGY, ENGINEERING + MATH EDUCATION

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Seattle WA 98134

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washingtonstem.org

WASHINGTON STEM WAS FOUNDED TO REIMAGINE AND REVITALIZE STEM EDUCATION FOR EVERY STUDENT IN WASHINGTON.

We're tackling this problem by driving innovation and improvement in STEM education. We nurture and scale breakthrough ideas in STEM education, invest in communities to grow networks of STEM professionals and educators, and advocate for important policy changes. Since our launch in March 2011, we have invested approximately $6 million and reached over 800 teachers, 24,000 students, and 62 organizations.

Our goal is for all Washington high school graduates to be STEM literate, prepared to complete post-secondary degrees, and thrive in Washington's STEM-driven workforce and society.

WE'RE BRINGING INCREASED FOCUS ON THREE KEY AREAS.

STEM INNOVATION. SCALING BREAKTHROUGH IDEAS + PROMISING PRACTICES.

Washington STEM's STEM Innovation team incubates breakthrough ideas in STEM teaching and learning and then scales them across Washington in a cost-effective way. These quality STEM education ideas are from our state, nation, and world and are accelerating teacher and student success.

Currently the STEM Innovation team is working on STEM-PD, a pioneering use of technology that provides teachers with professional development experiences that improve instruction, particularly around Common Core State Standards and Next Generation Science Standards. In conjunction with our STEM Networks, the STEM Innovation team plans to turn their attention to the challenge of designing best practices for real-world STEM learning, thereby ensuring that students gain valuable experience and inspiration when learning from and with STEM employers.

STEM NETWORKS. REIMAGINING STEM IN COMMUNITIES, STATEWIDE.

Our STEM Networks are creating unified systems of STEM education in their own communities – fostering partnerships, eliminating the duplication of work, and increasing impact. Washington STEM's role in this process is to create a network of networks that spreads best practices among communities and drives the scaling of effective practices across the state.

Washington STEM invests in STEM Networks around Washington state to accelerate student success in ways that align with local economies. In 2012, Washington STEM launched STEM Networks in South King County, Spokane County, and South Central Washington. The following year, Washington STEM invested in four more communities – Mid-Columbia, Snohomish, Southwest Washington, and West Sound.

STEM POLICY. SUPPORTING BOLD STATE LEADERSHIP IN STEM.

Washington STEM offers pragmatic, nonpartisan recommendations to improve STEM teaching and learning for all students. We work with our STEM Networks, policymakers, and other education advocates to bring creative solutions that will remake our state's education system and, with it, the futures of generations of young Washingtonians.

Our work has resulted in Washington state allowing Advanced Placement Computer Science to count as a math or science credit towards graduation; creation of the Governor's STEM Education Innovation Alliance; and adoption of the Next Generation Science Standards. We also bring together education, business, and community leaders from across the state at our annual STEM Summit to share innovations and solutions while inspiring action.

WASHINGTON STEM BOARD OF DIRECTORS

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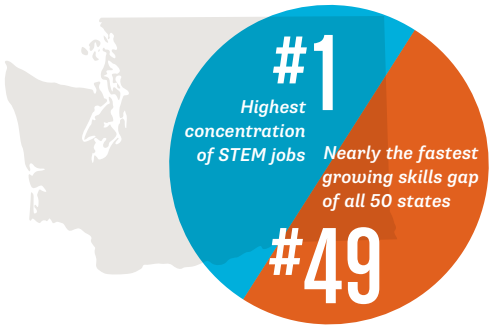
WASHINGTON STEM FRAMEWORK FOR ACTION AND ACCOUNTABILITY

Why is STEM important?



If we are to fill jobs, grow the economy, and close opportunity gaps for the next generation, we must increase the STEM talent across our state.

What is the Framework?

The Washington STEM Framework for Action and Accountability is a research-based tool that will spur greater coordination, smarter investments, and measurable results. Four logic models drive action around a common vision and goals, and lay out clear objectives linked to specific activities. Progress and impact will be measured using key indicators.

VISION

All Washingtonians have the STEM skills necessary to live a life of opportunity and success in the state's thriving innovation economy and democratic society.

GOALS

Washington state leads the nation with:

- STEM literacy for all
- A diverse, world-class workforce

ACTION

- Prepare and retain excellent STEM teachers
- Inspire youth interest in STEM
- Raise public awareness and support for STEM
- Strengthen Washington's STEM workforce through degree production and workforce training
- Improve equity and opportunity by improving outcomes for underrepresented groups
- Align state and local systems to support STEM success

IMPACT

A strong and vibrant Washington state economy that offers ample opportunity for all.

WASHINGTON STEM
REIMAGINING SCIENCE, TECHNOLOGY, ENGINEERING + MATH EDUCATION

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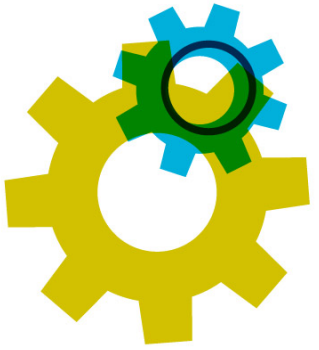
WASHINGTON STEM
FRAMEWORK FOR ACTION + ACCOUNTABILITY

Patrick D'Amelio | **Washington STEM**

Mary Kay Dugan | **Battelle**



WHY A FRAMEWORK?

- **STEM Imperative**
  - Global STEM industry leaders and innovators
  - Fastest growing skills gap in the nation
  - To fill jobs, grow the economy, and close opportunity gaps, we must increase STEM talent in the state - *urgently, collectively and with laser-like focus*
- **Challenges**
  - Absence of common goals and metrics
  - Lack of agreement on “what works”
  - Lack of alignment and coordination
- **Solution: Framework for Action and Accountability**
  - Research and practitioner-based tool to spur greater coordination, smarter investments, and clear results

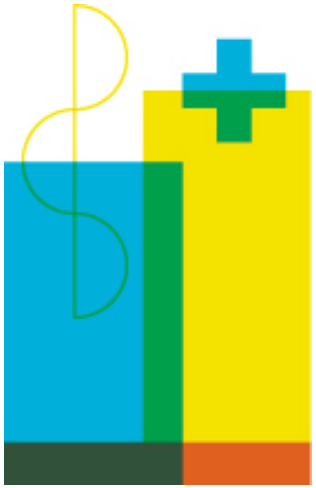
HOW WAS THE FRAMEWORK DEVELOPED?

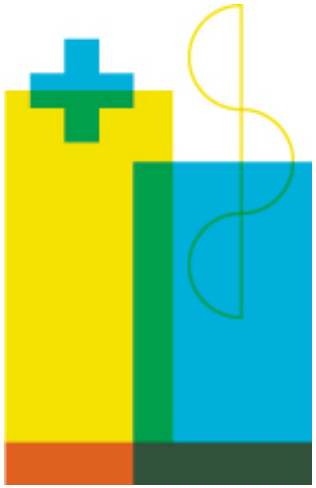
- **Creation:** Washington STEM developed a draft Framework just over a year ago
- **Engagement**: Input from state and national advisors and partners
  - Educators
  - Businesses
  - Policymakers
  - Regional STEM Networks
  - STEM leaders
  - Community organizations
- **Validation**: Evidence-based with evaluation expertise from Battelle

WHAT DOES THE FRAMEWORK CONTAIN?

Components

- Vision + Goals
- Objectives
- Priority Actions
- Indicators
- Impact





WHAT'S NEXT?

- **Implementation**
  - Washington STEM + partners
  - Governor's STEM Alliance
- **Measurement**
  - Time-bound targets for objectives
  - Final indicators/measures
  - Data-driven decision-making tools
- **Dissemination**
  - Annual STEM Summit in December
  - Annual report to Legislature
  - STEMx and other states

DISCUSSION

- Key drivers: The need, HB1872, NGA
- Adoption
- Communications
- Measurement

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WASHINGTON STUDENT ACHIEVEMENT COUNCIL
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The Governor's STEM Education Innovation Alliance: Leveraging the NGA Policy Academy to Align Washington's Education System with its Technology-Driven Economy

An Overview

Gene Sharratt
Executive Director, Washington Student Achievement Council

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THE ROADMAP
A Plan to Increase Educational Attainment in Washington

2023 Educational Attainment Goals

- All adults in Washington, ages 25-44, will have a high school diploma or equivalent (Currently at 89%).
- At least 70 percent of Washington adults, ages 25-44, will have a postsecondary credential (Currently at 50%).

For more information: http://www.wsac.wa.gov/the-roadmap

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THE ROADMAP

A Plan to Increase Educational Attainment in Washington

Key ROADMAP strategies are aligned with goals of the grant project.

1. Streamline and expand dual-credit and dual-enrollment programs.
2. Increase support for all current and prospective students.
3. Align post secondary programs with employment opportunities.
4. Provide greater access to work-based learning opportunities.
5. Encourage adults to earn a postsecondary credential.
6. Leverage technology to improve student outcomes.
7. Respond to student, employer, and community needs.
8. Increase awareness of postsecondary opportunities.

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Washington's Education System and Economic Vitality

The Environment: Washington's economy is technology-driven.

The Challenge: Aligning the education system with employers' needs in Washington requires a direct focus on STEM-education.

- Washington currently ranks #1 nationally in the concentration of STEM jobs.
- Washington's growing high-tech economy creates high-skilled, high wage jobs putting pressure on the state's postsecondary education and training system to keep pace with employer demand.
- Washington ranks fourth in the country for technology-based corporations but only 46th for participation in STEM education programs.
- In 2013, there were 25,000 unfilled jobs in Washington due to a lack of qualified candidates.
  Eighty percent were in high-demand healthcare and STEM fields, such as computer science and engineering.
- By 2017, approximately 50,000 vacancies are expected.
  Ninety percent are projected from STEM and healthcare fields.

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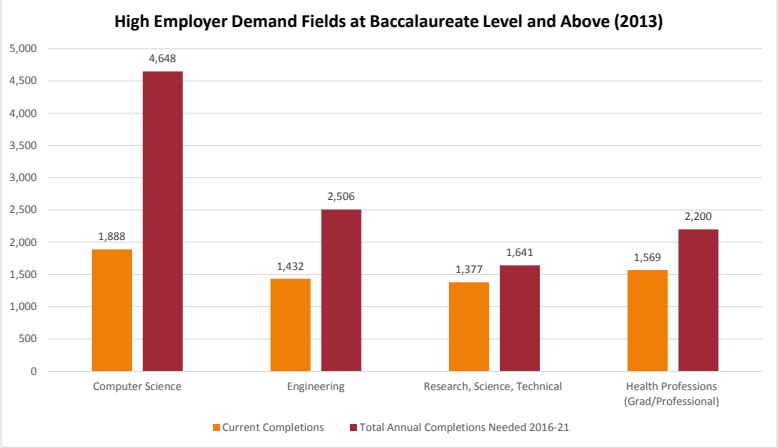
Degree Completion & Employer Needs



Source: *A Skilled & Educated Workforce, 2013 Update.*

**Current degree completion rates are not keeping pace with projected employer needs.*

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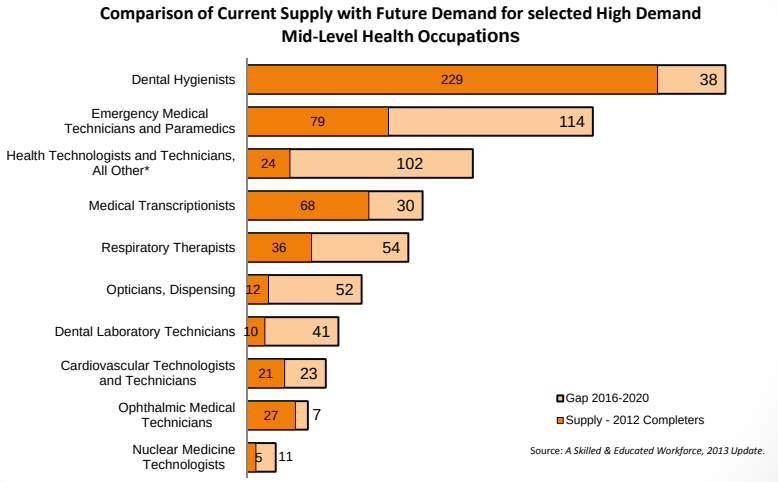
High Demand Mid-Level Health Occupations



Source: *A Skilled & Educated Workforce, 2013 Update.*

**Critical STEM gaps exist at the mid-level for workers with associates degrees & technical occupations.*

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NGA Policy Academy Program & the Governor's STEM Education Innovation Alliance

In 2013, key legislation was passed establishing a multi-sector **STEM Education Innovation Alliance** (E2SHB 1872) by Governor Inslee—to bring government, business and education sectors together to match the education system with the state's workforce needs.

NGA Policy Academy Grant program will leverage the Governor's STEM Education Innovation Alliance initiative to:

- Bring disparate resources together.
- Promote best practice strategies through the cross-state partnerships.

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Grant Summary

Component 1: Implement a Strong Vision

Building upon a Strong Foundation

This project builds upon a strong foundation, embodied in the Governor's solid commitment to education and career training as the number one priority in his Results Washington Initiative.

Strategic Vision for Progress

The strategies and actions articulated in our proposal focus on making progress in key areas:

- Ensure that all students graduate from high school STEM literate and prepared with 21st century skills.
- Cultivate a vital synergy between the state's education and career training system and its economy.
- Expand upon the Framework for Action & Accountability developed by Washington STEM and refine strategies through collaboration with the Policy Academy.

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Grant Summary
Component 2: Integrate Workforce & Education Data

- Build upon the Governor's Results Washington Initiative.
- Create a talent supply and demand dashboard.
  - Led by Jim Schmidt, Director, Education Research Data Center (ERDC)
- Leverage the ERDC's ongoing project to track and connect longitudinal data on individuals and cohorts as they move through P-20 education and subsequent training programs into jobs.

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Grant Summary
Component 3: Build Industry & Education Partnerships

Partner with **Washington STEM** to work with education, business and community leaders, policymakers and philanthropists to achieve the following goals:

- Support alignment of activities and resources (public and private) with the vision and goals.
- Spur additional partnerships and commitments to action.
- Participate in the Annual Statewide Summit (December 2014).
- Share data, challenges and promising practices.
- Build on the STEM Alliance's plans to partner with regional STEM Networks in Washington (Six centers currently operational in Washington).

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Grant Summary
Component 4: Resources & Incentives

- Develop or update an asset map of state and federal funding and programs.
- Explore options to expand existing performance funding mechanisms to increase the effectiveness and efficiency of the state's postsecondary, workforce and career tech systems.
  - Build upon existing programs.
  - For example, the *Student Achievement Initiative,* the performance funding system for community and technical colleges.

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Contact Information

If you have questions about the grant project, please contact:

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WASHINGTON STUDENT ACHIEVEMENT COUNCIL
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TEN-YEAR ROADMAP

A Plan to Increase Educational Attainment in Washington

12 Strategies to Increase Educational Attainment

Ensure Access

1. Ensure cost is not a barrier for low-income students.

- Fully fund College Bound and State Need Grant.

Indicates STEM-Related Initiative

2. Make college affordable.

- The Council will identify and recommend a funding policy to guide investments in postsecondary education.

3. Ensure high school graduates are college and career ready.

- Continue efforts to implement Common Core State Standards and Smarter Balanced Assessment, e.g. Improving Student Learning at Scale Collaborative (ISLS grant).
- Provide additional academic supports for students who have been out of high school for a year or more.

4. Streamline and expand dual-credit and dual-enrollment programs.

- The Council will convene a statewide workgroup to develop a coordinated dual-credit and dual-enrollment system to ensure statewide access and funding.

5. Increase support for all current and prospective students.

- The Council will collaborate with partners to identify/promote strategies that ensure access to student services.
  - Effective High School and Beyond Plans for 8th graders.
  - Graduation specialists for high school seniors.
  - Mentoring and sponsorship programs for underrepresented students.
  - Training for advisors, counselors, and mentors at all levels.
  - Designated staff support for underrepresented students at postsecondary institutions.
  - Online advising system for students, parents, and advisors.

Enhance Learning

6. Align postsecondary programs with employment opportunities.

- The Council will convene a statewide workgroup to review, align, and enhance existing employer feedback mechanisms.

7. Provide greater access to work-based learning opportunities.

- Increase investments in the State Work Study program.
- Create an online clearinghouse of work-based learning opportunities to facilitate matching of students with employers.

8. Encourage adults to earn a postsecondary credential.

- Provide tailored information regarding continuing education and provide supports to adults with some postsecondary credit but no credential.

9. Leverage technology to improve student outcomes.

- Create a statewide educational technology consortium that will identify strategies to:
  - Increase use of technology to deliver workplace-based programs and share open educational resources.
  - Provide training opportunities and facilitate professional learning communities.
  - Develop a voluntary compact to enhance purchasing options and securing statewide licensing for educational materials and technologies.
  - Establish competitive grant and award programs to encourage innovation and effective practices utilizing technology.

Prepare for Future Challenges

10. Respond to student, employer, and community needs.

- The Council will develop a process for assessing institutional capacity, in response to needs from students, employers, and communities, that is consistent with the Council's statutory responsibility relative to system design. Capacity assessment will include:
  - Forecasting model to assess impacts of Roadmap strategies on student demand.
  - Process to assess postsecondary educational needs of students, employers, and communities.
  - Assessment of institutions' programmatic, physical, and technological capacity to provide lifelong educational opportunities.
  - Identification of best practices for improving effectiveness and efficiency within existing resources.
  - Assessment of state's overall return on investment (ROI) in postsecondary education.

11. Increase awareness of postsecondary opportunities.

- Ensure all Washingtonians have access to a one-stop shop for information about postsecondary education opportunities and career requirements, in addition to assistance with completing applications for enrollment and financial aid.
  - The "Ready, Set, Grad" website will be continually updated and translatable into more than 60 languages by mid-2014.

12. Help students and families save for postsecondary education.

- The Council will develop a savings incentive pilot program for the Legislature's consideration.

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TEN-YEAR ROADMAP

A Plan to Increase Educational Attainment in Washington

ATTAINMENT GOALS: DIPLOMA & CREDENTIAL BY 2023

Diploma

All adults ages 25-44 in Washington will have a high school diploma or equivalent.

Currently 89% of adults ages 25-44 in Washington have a high school diploma or equivalent.

Credential

At least 70% of adults ages 25-44 in Washington will have a postsecondary credential.

Approximately 50% of adults ages 25-44 in Washington currently have a postsecondary credential.

Overcoming Challenges:

- Too many Washingtonians - especially persons of color, individuals from low-income families, English Language Learners, and those with disabilities - do not participate in postsecondary education.
- Washington faces underlying capcity and access challenges as more students enroll in high-cost programs that prepare them for high-demand jobs.
- More than 30,000 eligible students are unable to receive the State Need Grant because the program is underfunded.
- Student loan debt has increased for students at our public and private insitutions.

Building on Strengths:

- Washington is expanding access to the Early Childhood Assistance Program.
- Our public school system - which serves more than 1 million students annually and employs more than 53,000 teachers - will provide its students all-day kindergarten by the 2017-18 school year.
- The State Need Grant, the College Bound Scholarship, and other state need-based programs have allowed thousands of Washingtonians to attend a postsecondary institution.
- Our public and private non-profit baccalaureate institutions student graduation rates are among the highest in the nation.
- Each year, our community and technical colleges prepare nearly 500,000 Washingtonians with the skills and knowledge necessary for careers or further education at public and private baccalaureate institutions.
- We have more than 300 private career schools that provide training in a diverse array of fields to support employer and community needs for skilled workers.

Legislature must follow WSAC education Roadmap

"The WSAC has provided state lawmakers with bold goals and a thoughtful plan to achieve them. It proves, if nothing else, that we're getting better at talking about an education system aligned with the workforce and all phases of student development. Now it's up to state lawmakers to follow the plan."

- The Olympian
January 16, 2014

It's time to start reinvesting in higher education

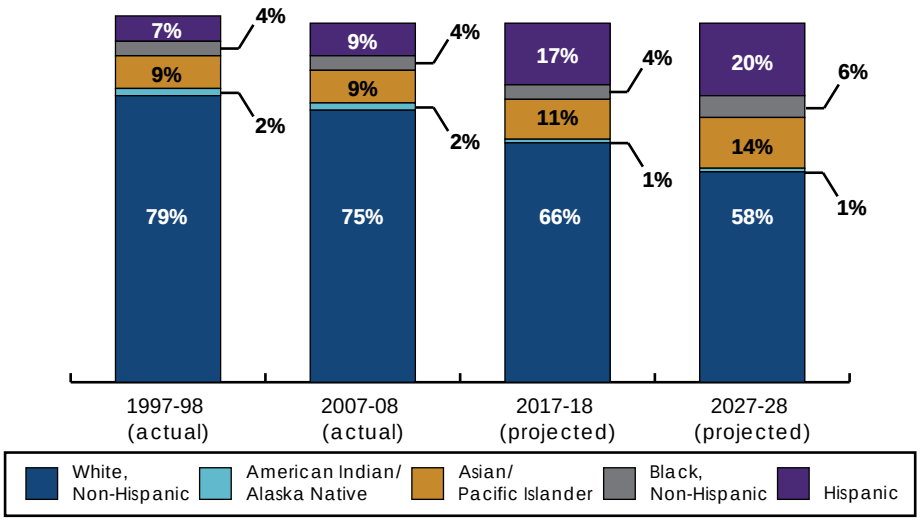
"The Student Achievement Council recently released a road map for success that includes practical, achievable goals...It will require a long-term perspective and a lot of political courage to meet the challenges ahead for higher education and for basic human services."

- The Wenatchee World
January 18, 2014

The Demographic & Economic Imperatives

Most of Washington's future population growth is expected to come from under-represented groups who experience a persistant gap in educational opportunity.

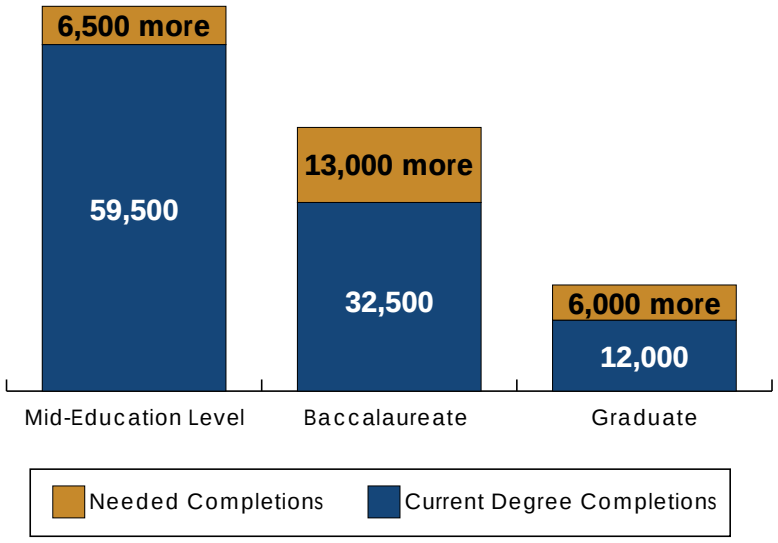
Washington Public High School Graduates



Note: Percentages may not total 100% due to rounding.

Source: Longanecker, D. (2012). *Knocking at the college door.* Retrieved from http://www.wiche.edu/info/knocking-8th/profile/wa.pdf

Workforce Demand & Attainment



Source: Washington Student Achievement Council, State Board for Community & Technical Colleges, and the Workforce Training & Education Coordinating Board. (2013). *A Skilled and Educated Workforce: 2013 Update.* Retrieved from http://www.wsac.wa.gov/sites/default/files/2013.11.16.Skills.Report.pdf

At the same time, projected workforce demand for critical job openings exceeds current and projected degree production.

Closing the opportunity gap is the key to meeting demand for a skilled workforce.

THE ROADMAP

A Plan to Increase Educational Attainment in Washington

To download the Roadmap or get more information, please visit our website: wsac.wa.gov/roadmap

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STEM Education and Washington's Technology-Driven Economy

The Environment: Washington's economy is technology-driven. Washington is fortunate to possess a dynamic environment for business and industry, with many employers centered in the technology sector.

The Challenge: aligning the education system with employers' needs in Washington requires a focus on STEM-education.

Washington's vital and growing high-technology economy creates many high-skill and high wage job opportunities for its residents. However, it also creates challenges for the state's postsecondary education and training system.

The following statistics outline a few of these challenges:

- Washington currently ranks number one nationally in the concentration of STEM jobs.
- By 2018, STEM jobs in the state are projected to increase by 24 percent.
- In Washington, the mismatch between the skills required for available jobs and individuals with those skills is growing faster than every other state but one.
- Washington ranks fourth in the country for technology-based corporations but only 46th for participation in STEM education programs.[1]

A 2013 report by the Washington Roundtable and the Boston Consultancy Group revealed that there were 25,000 unfilled jobs in Washington due to a lack of qualified candidates. Eighty percent of those jobs were in high-demand health care and STEM fields like computer science and engineering.[2]

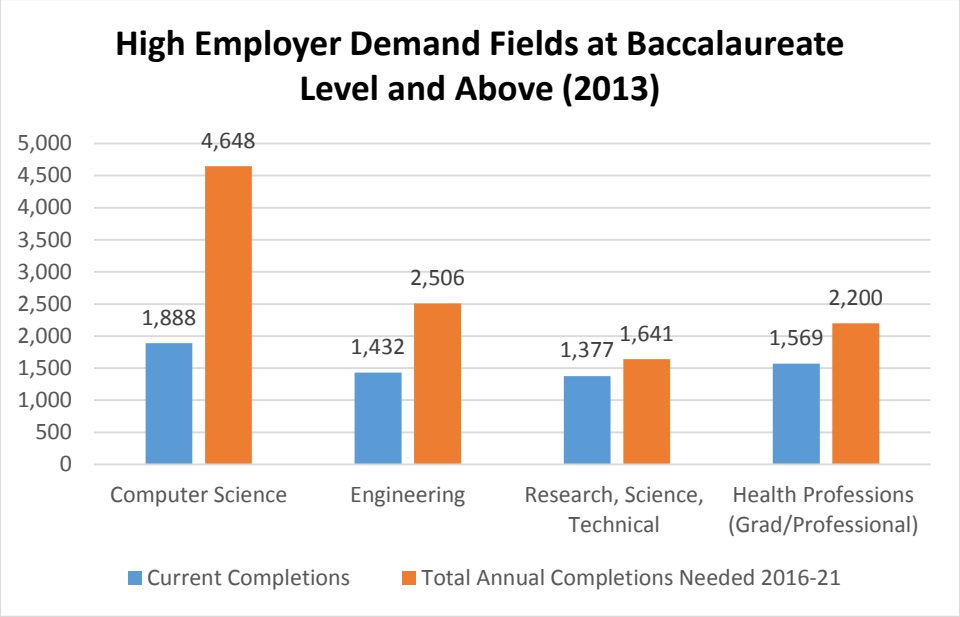
This same report projected that, if this trend continues, local companies will experience approximately 50,000 vacancies by 2017, due to skill gaps in key fields. STEM and health care jobs account for 90 percent of these projected vacancies.

[1] Washington STEM. *Why STEM, Why Now?* Retrieved from http://www.washingtonstem.org/Why-Stem/The-Challenge#.U6lehfldVUV, June, 2014.

[2] Great Jobs Within Our Reach: Solving the Problem of Washington state's growing job skills gap. The Boston Consultancy Group and the Washington Roundtable. March 2013.

Degree Completion Rates and Employer Demand

A recent report prepared by the Washington Student Achievement Council, in collaboration with the Workforce Training and Education Coordinating Board and the State Board for Community and Technical Colleges, underscores this trend, showing that current degree completion rates are not keeping pace with projected employer needs.[3]



STEM Gap in High Demand Mid-level Occupations

As indicated in the chart below, this report also showed critical gaps in STEM fields at the mid-level, for workers with associate degrees in a range of technical occupations. The demand for workers in STEM occupations in Washington is increasing at every education level.[4] The STEM supply problem goes beyond the need for more professional scientists, engineers, computer scientists, and mathematicians. There is also a need for more qualified technicians and skilled STEM workers in a range of occupations.

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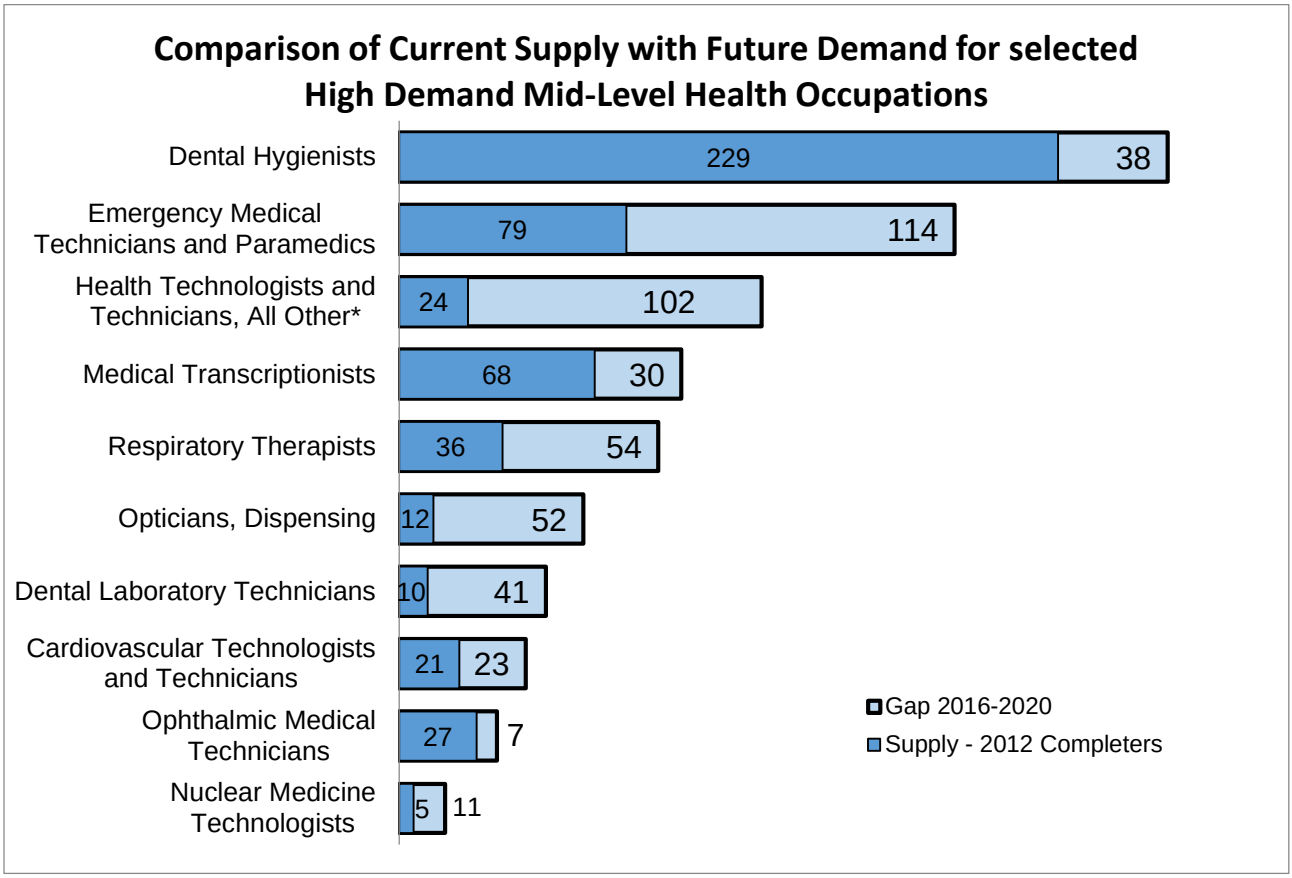
[3] Washington Student Achievement Council, Workforce Training and Education Coordinating Board, and State Board for Community and Technical Colleges. *A Skilled and Educated Workforce, 2013 Update*. Olympia, WA: Washington Student Achievement Council.

[4] Carnevale, Anthony P., Smith, Nicole, and Michelle Melton. (2011) STEM. Georgetown Public Policy Institute, Center on Education and the Workforce.



Taking Action: The NGA Policy Academy Program and the Governor's STEM Education Innovation Alliance. For all these reasons, Washington is in need of a vehicle for aligning the state's education and career training system with the job opportunities and employer needs of its STEM-driven economy. In 2013, Governor Inslee worked with state senators and representatives to pass a key piece of legislation (E2SHB 1872) that establishes a multi-sector STEM Education Innovation Alliance, with a set of tools that will help align the state's education, training and workforce systems with the economy. The NGA Policy Academy grant program will play a key role in advancing the Governor's STEM Education Innovation Alliance agenda, catalyzing efforts to bring disparate resources together and promoting best practice strategies by leveraging the Policy Academy's cross-state meeting structure.

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Grant Goals and Action Plan

Summary

In May 2014, the National Governor's Association (NGA) Center for Best Practices issued a Request for Proposals (RFP) entitled *NGA Policy Academy on Aligning the Education and Training Pipeline to the Needs of the Economy.* The purpose of this NGA Policy Academy grant program is to support states in planning and taking action to better align their education and training systems to meet the needs and employment opportunities of their economies.

In response to the requirements outlined in the RFP, our grant proposal for the State of Washington articulated a range of strategies and actions to make progress in four key areas:

Component 1 ***Vision:*** **Articulate and implement a strong vision connecting the education and training systems with the needs of the economy**

Governor Inslee has made the goal of strengthening Washington's system for education and career training the number one priority of his administration designating the cultivation of a "World Class Education" system as Goal One of his Results Washington initiative.[1]

Recognizing that the skills needed to succeed are constantly evolving, he is committed to ensuring that all students graduate from high school STEM literate and prepared with 21st century skills, ready for careers or to pursue postsecondary certificates or degrees. In Washington, this focus on STEM education is necessary both to promote the health of the economy and to boost student prospects for seizing the high skill – high wage opportunities our thriving innovation economy offers. These societal elements are deeply interconnected. The key to Washington's long-term prosperity, on the individual level as well as for business and industry, is the cultivation of a vital synergy between the state's education and career training system and its economy.

The Governor's STEM Education Innovation Alliance. In response to Washington's STEM education challenge, Governor Inslee proposed the creation of the STEM Education Innovation Alliance, which was approved by the Washington State legislature in 2013 in E2SHB 1872. The STEM Alliance is designed to bring together members from business, labor, nonprofit, and education organizations as partners to advise the Governor and provide vision and guidance in support of STEM education initiatives. Its approach is broad and comprehensive, with a preschool-through-graduate school focus, and is focused on aligning the state's education system resources with the workforce needs and employment opportunities of its largely STEM-driven economy.

[1] http://www.results.wa.gov/sites/default/files/NewStrategicFramework_1.pdf.

The Alliance will begin with the Framework for Action and Accountability developed by Washington STEM, which outlines a set of measurable goals and indicators to track progress in improving STEM education and workforce outcomes. This framework will be discussed by Patrick D'Amelio in a later segment this morning. Through the work of the Policy Academy, this will be further refined and a range of targeted strategies explored, through the sharing of experience in cross-state discussions and policy forums.

The NGA Policy Academy grant program will play a key role in advancing the Governor's STEM Education Innovation Alliance agenda, catalyzing efforts to bring disparate resources together and promoting best practice strategies by leveraging the Policy Academy's cross-state meeting structure.

Component 2 Data: Integrate and use education and workforce data to inform policy, track progress and measure success

Results Washington. As part of the Governor's Results Washington initiative, a data-driven performance management and continuous improvement system, a mechanism has been developed for clearly communicating the state's education goals and tracking progress toward them. Key outcome measures and leading indicators are identified for these goals, and the results are tracked, updated, and displayed in charts and graphs on the Results Washington web portal.[2] The process is set up to encourage state agencies to work together in developing strategic plans to meet the goals.

The creation of a talent supply and demand dashboard. Complementing the Results Washington initiative, a talent supply and demand dashboard will be developed as a key component of the grant project, providing a valuable tool for tracking progress, sharing data, and focusing strategic attention on areas of the education pipeline that could be most productively improved. Jim Schmidt, Director of the Education Research Data Center (ERDC), will lead the effort to create this key tool.

The ERDC is currently engaged in two projects that will form a strong foundation on which the dashboard will be built:

(1) The ERDC is completing a federally funded effort to track and connect longitudinal data on individuals and cohorts as they move through P-20 education and subsequent training programs into jobs, and

(2) As a result of recently-enacted legislation (E2SHB 1872), it has been charged with the responsibility to create annual STEM Benchmark Report Cards, using key metrics associated with the Washington STEM Framework for Action and Accountability. These annual report cards will allow the Governor and legislature to productively review key education and workforce data points in order to more effectively tailor state policies and budget priorities for continued progress.

[2] The Results Washington site can be accessed from http://www.results.wa.gov/.

These assets will be leveraged to develop the talent supply and demand dashboard and, with resources made available through the NGA Policy Academy program, will be refined to provide the crucial information needed to advance alignment between the state's education system and the workforce needs of the economy.

Component 3 ***Partnerships:*** **Build industry and education partnerships**

Washington STEM. During the grant period, the Governor and members of the STEM Education Innovation Alliance will partner with Washington STEM to hold an annual statewide convening of education, business and community leaders, policymakers and philanthropists to achieve the following goals: 1) build understanding of the Governor's vision and goals, 2) support alignment of activities and resources (public and private) against that vision and goals, 3) spur partnerships and commitments to action, and 4) share data, challenges and promising practices. Washington STEM has successfully convened the state's two previous statewide STEM Summits in 2012 and 2013 with participation from the Governor and key stakeholders from across the state. These meetings have built a shared understanding among key leaders in the state of the challenges and potential solutions for better aligning Washington's education system with the talent needs of the economy, and for the need to urgently focus on STEM. With this foundation in place, the Governor is well-positioned to spur action through future annual statewide summits.

Regional STEM Networks. Given Washington's robust and expanding technology and STEM-related industrial sector, partnerships with STEM-related groups will play a key role going forward. As part of the creation of the STEM Education Innovation Alliance, E2SHB 1872 called for state investment in a statewide system of STEM networks to facilitate such industry and education partnerships. Washington STEM has provided seed funding to six communities to launch and connect regional STEM networks in South King County (Puget Sound), Spokane, Tri-Cities, Vancouver, Yakima Valley, and Snohomish. These regions are home to the state's industry leaders in key sectors and job creators such as aerospace, technology, and clean energy, and have demonstrated clear community leadership to work together and build education and training systems aligned with the needs of local and state economies. The regional STEM Networks are creating unified systems of STEM education in their own communities – fostering partnerships among educators and employers and, with existing actors like Washington Mathematics Engineering Science Achievement (MESA) chapters, aligning resources and increasing impact. Washington STEM's role in this process is to create a system of networks that spreads best practices among communities and drives the scaling of effective practices across the state. This foundation will be built upon with assistance from the NGA Policy Academy to create a unified system that will form, evaluate and spread high-impact industry and education partnerships statewide.

Component 4 **Resources and Incentives: Modify the use of resources and incentives to support attainment of the integrated vision.**

Develop or update an asset map of state and federal funding and programs. An asset map of state and federal funding and programs intended for improving education, workforce training, or economic development will be developed. Non-financial incentives that could potentially impact workforce and education will also be mapped. The Alliance will analyze these various

resources to see if there are changes the Governor could make with potential to improve the state's STEM education and workforce training system.

There is work already planned on developing this type of map for STEM-related issues. WA STEM has an intern already on board who has begun to research and map out state and federal STEM education and workforce funding streams. This initial asset map will facilitate an initial analysis of return on investment, assessment of opportunities for greater alignment and more robust asset mapping if needed.

Explore options to expand existing performance funding mechanisms to increase the effectiveness and efficiency of the state's postsecondary, workforce and career tech systems. Some innovations have been tried in the state that can be built upon and expanded where effective, or new innovations incentivized. For example, the *Student Achievement Initiative* is the performance funding system for community and technical colleges. Its purposes are to both improve public accountability by more accurately describing what students achieve from enrolling in our colleges each year, and to provide incentives through financial rewards to colleges for increasing the levels of achievement attained by their students. It represents a shift from funding entirely for enrollment inputs to also funding meaningful outcomes. The NGA Policy Academy offers the Governor's STEM Education Innovation Alliance an outstanding opportunity to explore the effectiveness of performance funding mechanisms and the experience of leaders in other states, and to identify potential application in Washington State.

World-Class Education

GOAL 1: WORLD-CLASS EDUCATION

Expecting every child to receive a world-class education that prepares him or her for a healthy and productive life, including success in a job or career, in the community and as a lifelong learner

GOAL TOPIC

ACCESS

All Washingtonians have access to education that prepares them to transition to elementary, middle, high school, postsecondary, career and lifelong learning opportunities

SUCCESS

Washington's public schools provide innovative, high-quality opportunities and tools for every student to attain 21st century skills to succeed in school, job, career and community

SUB TOPIC

EARLY LEARNING

OUTCOME MEASURE

1.1. Increase the percentage of children enrolled in high-quality early learning programs from 2013 baseline to targets per program

LEADING INDICATORS

1.1.a. Increase state-funded preschool enrollment slots from the 2012-2013 baseline of 8,391 slots to 22,807 slots by 2018-19 school year to serve 100% of eligible children whose families choose to enroll

1.1.b. Increase number of children served in licensed child care settings and preschools participating in Washington's Quality Rating and Improvement System (QRIS) from December 2013 baseline of 60,719 children to 87,144 children by December 2015

1.1.c. Increase percentage of infants and toddlers, who due to developmental delays receive early intervention services from 2013 baseline of 2.2% to national average of 2.4% by December 2015

1.1.d. Increase the STEM math and science training opportunities for early learning professionals by 20% from 2013 baseline total by June 2015

1.1.e. Increase by 10% the number of parents/families who have access to support through voluntary home visiting services from June 2013 baseline by June 2015

Governor's Goal Council

- African American Affairs Commission – Ed Prince
- Arts Commission – Lisa Jaret
- Center for Childhood Deafness & Hearing Loss – Richard Hauan
- Community & Technical Colleges – Marty Brown
- Council of Presidents – Paul Francis
- Early Learning – Bette Hyde
- Education Ombuds – Stacy Gillett
- Office of Financial Management – Paula Moore
- Policy – Marcie Maxwell
- Results Washington – KayLyne Newell
- School for the Blind – Dean Stenehjem
- State Board of Education – Ben Rarick
- Student Achievement Council – Gene Sharratt
- Superintendent of Public Instruction – Alan Burke
- Workforce Training & Education Coord. Bd. – Eleni Papadakis

K-12

1.2 Increase the percentage of schools rated exemplary or very good on the Washington School Achievement Index by 10% by 2017

1.2.a. Increase percentage of children enrolled in state-funded full-day kindergarten from 22% to 100% by 2017-18 school year

1.2.b. Increase number of high school students who access high-quality online learning by 10% per year from 2013 to 2017

1.2.c. Increase access to effective dropout prevention programs offered by school districts and available to students from X to X by 20XX

1.2.d. Increase percentage of low-performing students receiving learning assistance intervention from X to X by 20XX

1.2.e. Increase percentage of public schools that provide access to all required subject areas (arts, world languages, career and technical education, fitness, social studies) from X to X by 20XX

1.2.f. Increase project-based, career, workplace, community learning opportunities that provide STEM and 21st century skills from X to X by 20XX

1.2.g. Increase percentage of National Board certified teachers who teach in a high-poverty school by 10% per year from 2013 to 2017

1.2.h. Increase percentage of first-year teachers with active, qualified mentor by 10% per year from 2013 to 2017

1.2.i. Increase percentage of sign language interpreters meeting newly established state performance standards from 33% in 2012-13 school year to 100% in 2016-17 school year

1.2.j. Increase percentage of teachers and principals rated distinguished from X to X by 20XX

POSTSECONDARY

1.3 Increase the percentage of population enrolled in certificate, credential, apprenticeship and degree programs from 13% in 2012 to 24.8% in 2023

1.3.a. Increase number of students enrolled in STEM and identified high-demand employment programs in public 4-year colleges from 31,282 to 32,642 by 2016-17

1.3.b. Increase the number of students who are enrolled in academic transfer STEM courses in public community and technical colleges from 41,936 in 2012-13 to 42,775 by 2016-17

1.3.c. Increase the number of students who are enrolled in high employer demand professional-technical programs in public community and technical colleges from 40,759 in 2012-13 to 41,574 by 2016-17

1.3.d. Increase percentage of eligible students who sign up for College Bound program from 80% to 92% by 2017

1.3.e. Increase percentage of eligible students who receive State Need Grant from 70% in 2013 to 85% in 2017

1.3.f. Increase number of families saving for postsecondary education and training expenses using the Guaranteed Education Tuition (GET) from 152,000 in 2012 to 182,000 in 2017

1.3.g. Increase project-based, career, workplace, community learning opportunities that provide STEM and 21st century skills from X to X by 20XX

1.3.h. Increase the number of students enrolled in online and hybrid courses in public 4-year colleges from 12,151 to 13,366 by 2016-17

1.3.i. Increase the number of students entering public higher education who access online learning (online and hybrid courses) in public community and technical colleges from 186,232 in 2012-13 to 189,957 in 2016-17

STEM: science, technology, engineering and mathematics

EARLY LEARNING

2.1 Increase the percentage of children entering kindergarten who demonstrate they are ready by 2% per year through 2015

2.1.a. Increase by 2% each year, 2012-13 through 2015, the percentage of children who demonstrate readiness skills for kindergarten in these areas: social-emotional, physical, language, cognitive, literacy, and math

2.1.b. Increase number of early learning providers who achieve level 3 or above in Early Achievers (voluntary quality rating and improvement system) from 2013 baseline of 253 programs to 1,471 programs by December 2018

NOTE: Data with a purple dotted line will be recalibrated after Common Core test results are available in 2015

Data separated by Native American, Asian, Pacific Islander, African American, Hispanic, Caucasian, English Language Learners, Students with Disabilities, Low Income

Data and metric will be available by October 2014

K-12

2.2 Increase the percentage of K-12 students who score proficient or better on statewide exams and graduate college- and career-ready from high school by 2% from 2013 to 2014

2.2.a. Increase percentage of students proficient in 4th grade reading and writing, 7th grade math and 8th grade science by 2% from 2013 to 2014

2.2.b. Increase percentage of students in a cohort who meet standards on all high school exit exams in or by 10th grade by 2% from 2013 to 2014

2.2.c. Increase percentage of high school students who graduate from high school in 4 years and 5 years by 2 percentage points per year from 2013 to 2018

2.2.d. Reduce opportunity gaps for all students through proficiency in reading, math, science (including biology for high school) by 2 percentage points from 2013 to 2014

2.2.e. Decrease percentage of recent high school graduates enrolled in pre-college or remedial courses in college from 40% to 35% by 2017

2.2.f. Increase number of K-12 schools recognized as innovative through meeting criteria listed in statute from 34 to 59 by 2017

2.2.g. Increase number of students who take high school courses to prepare them for STEM fields from X to X by 20XX

2.2.h. Increase percentage of high school graduates who during the 3rd quarter after graduation are either enrolled in post-secondary education or training or are employed in Washington from X% to X% by 20XX

2.2.i. Increase the percentage of entering 9th graders who after 4 years are either employed in Washington or enrolled in postsecondary education or training during the 3rd quarter from X% to X% by 20XX

POSTSECONDARY

2.3 Increase attainment of certificates, credentials, apprenticeships and degrees from 72,000 to 149,000 by 2023

2.3.a. Increase number of graduates in STEM and identified high-demand employment programs in public 4-year colleges from 10,726 to 11,661 by 2017-18

2.3.b Increase the number of graduates in academic transfer STEM in public community and technical colleges from 1,987 in 2012-13 to 2,027 in 2016-17

2.3.c Increase the number of students earning awards in high employer demand professional-technical programs in the public community and technical college system from 12,539 in 2012-13 to 12,790 in 2016-17

2.3.d Increase the percent of adult basic education and English as a second language students in public community and technical colleges who transition to pre-college or college-level within 2 years from 12% in 2010-11 to 15% in 2016-17

2.3.e. Increase percentage of postsecondary graduates from 4-year colleges who during the 4th quarter after graduation are either enrolled in post-secondary education or training or are employed in Washington from 80% to 82% in 2016-17

2.3.f. Increase the percentage of postsecondary graduates from public community and technical colleges who during the 3rd quarter after graduation are either enrolled in postsecondary education or training or are employed in Washington from 80% in 2012-13 to 82% by 2016-17

Prosperous Economy

GOAL 2: PROSPEROUS ECONOMY

Fostering an innovative economy where businesses, workers and communities thrive in every corner of our state

GOAL TOPIC	BUSINESS VITALITY *Washington is a great place to grow your business*		THRIVING WASHINGTONIANS *Washington is THE place to work*		SUSTAINABLE, EFFICIENT INFRASTRUCTURE *Washington's infrastructure meets tomorrow's needs*		QUALITY OF LIFE *Washington is a great place to live*
SUB TOPIC	COMPETITIVE AND DIVERSIFIED ECONOMY		QUALITY JOBS	EXPANDING OPPORTUNITIES	RELIABLE INFRASTRUCTURE	SUSTAINABLE TRANSPORTATION	VIBRANT COMMUNITIES
OUTCOME MEASURE	1.1. Increase state real GDP from $325 billion in 2012 to $351 billion by 2015	1.2. Increase gross business income (GBI) from $646 billion in 2012 to $749 billion by 2015	2.1. Increase the number of jobs in state by 150,000 by 2015	2.2. Increase the average earnings of Washington workers from $52,000 in 2012 to $56,000 by 2015	3.1. Maintain infrastructure assets at 2012 baseline condition levels	3.2. Increase the percentage of Washingtonians using alternative transportation commute methods to 33% by 2015	4.1. Adopt genuine progress indicator and increase by X% from 2013 baseline *(currently being created, baseline to be established by April 2014)*
LEADING INDICATORS	1.1.a. Increase total exports from $68 billion in 2012 to $83 billion by 2015	1.2.a. Increase GBI by X% in these sectors from 2012 to 2015: clean energy, agriculture, military, aerospace, life sciences, information and communication technology, maritime, advanced manufacturing	2.1.a. Increase employment by X% in these sectors from 2012 to 2015: clean energy, agriculture, military, aerospace, life sciences, information and communication technology, maritime, advanced manufacturing	2.2.a. Expand skilled workforce to match increase in high-demand industries by 11% by 2015	3.1.a. Improve percentage of state and local bridges in fair or better condition at 95% or higher	3.2.a. Improve travel and freight reliability on strategic corridors resulting from economic growth to within 5% of 2012 baseline	4.1.a. Increase state agency and educational institution utilization of state-certified small businesses in public works and other contracting and procurement by 2017 to: °Minority-owned businesses: 10% °Women-owned businesses: 6% °Veteran-owned businesses: 5%
	1.1.b. Maintain or improve the state's ranking of 13 for 2012 in the U.S. Chamber of Commerce Innovation and Entrepreneurship metric		2.1.b. Increase percentage of people participating in WorkSource who find jobs from 53% in 2012 to 62% by 2015	2.2.b. Increase number of workers in occupations who earn an average of at least $35,000 from 1.63 million in 2012 to 1.84 million by 2015	3.1.b. Improve percentage of state and local pavement in fair or better condition at 92% or higher	3.2.b. Maximize existing capacity of strategic corridors by increasing people and/or goods moved per corridor mile from X% in 2012 to X% by 2015	4.1.b. Increase the ArtsWa creative vitality index from 1.02 in 2011 to 1.05 by 2015, remain above national average
	1.1.c. Increase spending by tourists from $16.9 billion in 2012 to $19.3 billion by 2015	1.2.b. Reduce business time, cost, frustration of compliance from 2013 baseline conditions as measured by a regulatory process index to be in place by 2015	2.1.c. Increase employment rate for veterans from 67% in 2011 to 70% by 2015		3.1.c. Maintain or improve percentage of other non-transportation infrastructure assets in fair or better condition from 2013 baseline levels of X%	3.2.c. Reduce number of pedestrian and bicycle fatalities on public roadways from 84 in 2012 to zero by 2030	4.1.c. Improve Washington's Corporation for Enterprise Development (CFED) Scorecard Ranking in "Financial Assets & Income" from 17 to within the top 10 by 2017
		1.2.c. Constrain the 4-year average rate of growth for employer-based insurance premiums during 2012-2016 to .5% less than the national trend	2.1.d. Increase the employment rate for working age people with disabilities from 35.2 percent in 2011 to 37.8 percent in 2015		3.1.d. Increase water supply development and acquisition by 423,000 acre feet by 2020		
		1.2.d. Increase GBI for small businesses by 4.7% from 2012 to 2015	2.1.e. Increase small business employment by 67,000 from 2012 to 2015		3.1.e. Improve percentage of ferry terminal systems in fair or better condition at XX%; improve percentage of ferry vessel systems that are not overdue for replacement at 95%		
					3.1.f. Maintain percentage of transit fleet that exceeds Federal Transit Admin. minimum useful life scheduled at 2012 baseline levels of X%		
ECONOMIC INDICATORS	Building permits Energy rates New business formation		Underemployment rate Number of initial unemployment claims State and county unemployment rate Gender pay gap People in full-time jobs w/employer-provided health insurance People in full-time jobs w/employer-provided retirement plans Statewide employment rates GINI coefficient (represents income distribution)		Percent change in funding from federal and state sources for state-owned transportation assets State bond rating		Housing cost burden for low/moderate income households Participation in the state's Main Street programs Voter participation in elections In-migration

Requires passage of transportation package

Data and metric will be available in October 2014

DRAFT
5/15/2014

Economic indicators are measures that reflect economic prosperity.
We will be monitoring them as collectively, they are signs of overall economic health.

BCG

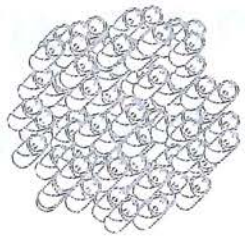
Investing in Washington's STEM Education Pipeline

Preview of key findings (paper to be released in late 2014)

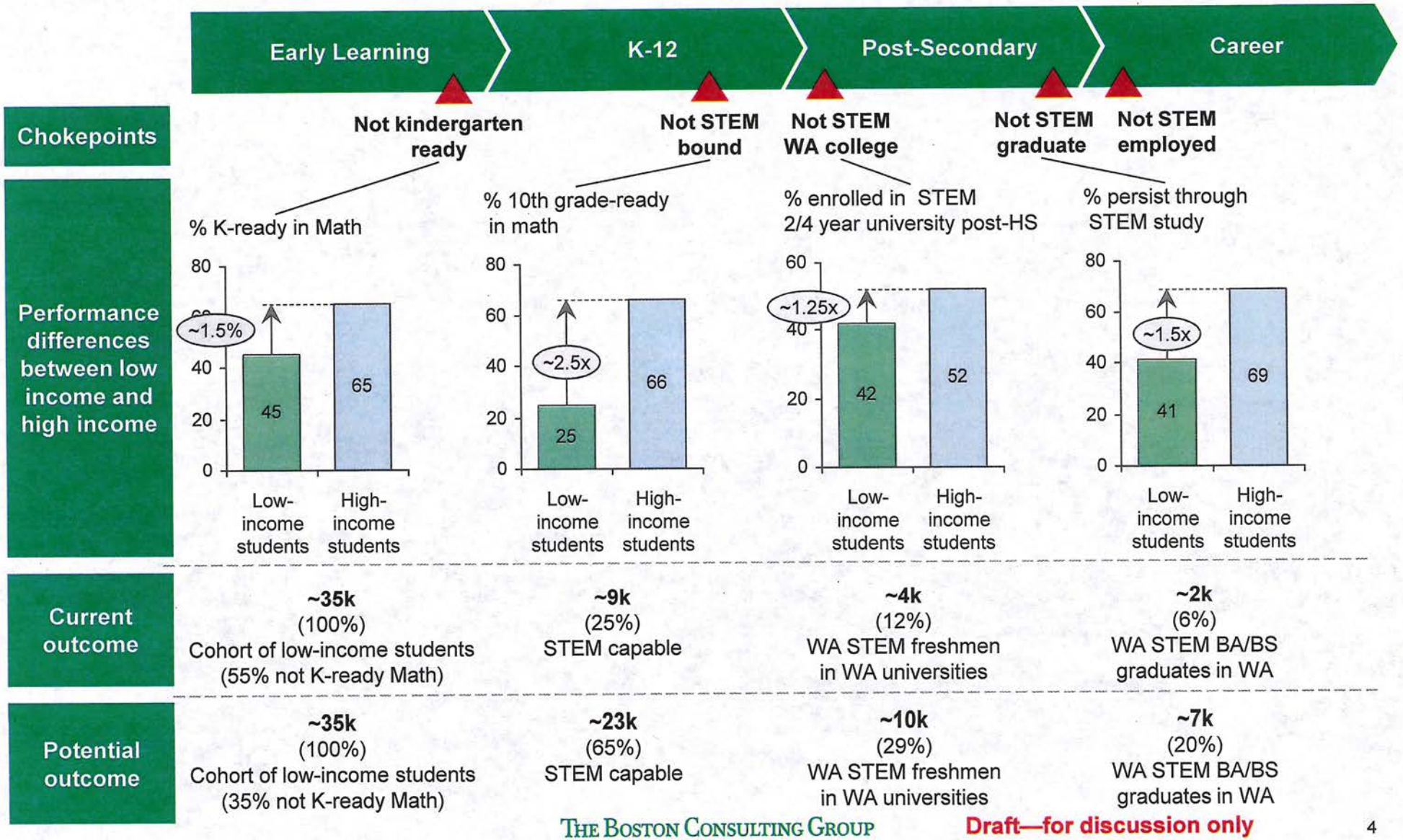
September 22, 2014

THE BOSTON CONSULTING GROUP

Opportunity to help thousands of WA students, by addressing chokepoints in STEM education pipeline

	Early Learning	K-12	Post-Secondary	Career
Chokepoints	**Not kindergarten ready** • No access to high quality preschool or informal learning • Not affordable	**Not STEM bound** • Dropped out • Not proficient (typically already by 8th grade) • Not interested	**Not STEM WA college** • Not enough WA university capacity • Not affordable • Non-STEM major • Preferred non-WA school	**Not STEM graduate** • Dropped out/didn't finish on time – Academic – Financial – Other	**Not STEM employee** • Non-STEM field • Job out of WA • Not proficient or career-prepared
Outcomes	 **~85k** (100%) Annual cohort of WA students *65% K ready* *54% K ready in Math*	 **~35k** (40%) STEM capable HS graduates in WA *75% interested in pursuing STEM post-secondary edu in WA*	 **~20k** (22%) ~14k WA STEM freshmen in WA univ. + ~6k WA technical college freshman in WA	 **~11k** (13%) ~7k WA STEM BA/BS graduates in WA + ~4k WA 2 yr technical graduates in WA	 **~8k** (9%) Washingtonian STEM employees in WA

Even greater opportunity to help low-income students struggle more through STEM pipeline



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Thank you

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