



## STEM EDUCATION INNOVATION ALLIANCE

November 28, 2017

Meeting Location:

Microsoft Conference Center, 16070 NE 36<sup>th</sup> Way, Redmond, Washington 98052

### MEETING NOTES

Gene Sharratt, STEM Alliance Co-Chair, welcomed the group and facilitated a round robin of introductions and brief announcements from STEM Alliance members and guests. A list of attendees follows these notes.

Ellen Matheny, STEM Alliance Manager, displayed the new cover for the 2018 STEM Education Report Card. This year's update of the Report Card will be expanded to include two pages of legislative recommendations, student spotlight featuring profile of WSOS Scholar, summary of STEM Alliance membership and mission, and updated key STEM progress indicators (from the STEM Dashboard).

#### Policy Recommendations for 2018 Legislative Session

**Maddy Thompson**, *Director of Policy & Government Relations, Washington Student Achievement Council*

Maddy reviewed the draft of the proposed legislative recommendations that will be included in the 2018 STEM Education Report Card. Several members shared comments and edits, which Maddy will incorporate into the revised draft version. STEM Alliance members will receive revised draft version to review and comment on within two weeks.

#### Science Education 2.0

Highlights of Science Activities across Washington State

**Gene Sharratt**, Executive Director, Association of Educational Service Districts Network

State of Washington Governor Jay Inslee and Superintendent of Public Instruction Chris Reykdal will participate in three meetings during December 2017, focused on science education.

December 7, 2017 – Office of the State of Washington Governor  
Governor Inslee will convene an invited list of science educators from around the state to discuss climate change, Next Generation Science Standards, methods of assessment, and next steps for expanding current science instruction around the theme of climate change and environmental education.

2:30 PM – Governor’s Conference Room, Legislative Building (Olympia)

December 11, 2017 – Office of the Superintendent of Public Instruction  
Superintendent Reykdal will convene a meeting focused on K-12 science education. Superintendent Reykdal is a strong advocate for increased instructional attention to science education and alignment with the Next Generation Science Standards. An invited audience of science educators will meet with Superintendent Reykdal.

4:00 PM – OSPI, Office of Superintendent (Olympia)

December 13, 2017 – Toppenish High School  
Governor Inslee and Superintendent Reykdal will attend and provide remarks at Toppenish High School, as part of a [Code.org](#) and [Facebook TechStart](#) experience on virtual reality presented by Toppenish High School computer science students.

1:00 PM – Toppenish High School (Toppenish)

Governor Inslee’s 2018 STEM Education Innovation Alliance Legislative priorities includes a specific request to develop a P-12 science education strategic plan and professional development strategies that support the Next Generation Science Standards.

#### Next Generation Science Standards Update

**Kathe Taylor**, *Assistant Superintendent Learning and Teaching, Office of Superintendent of Public Instruction*

- The Washington Comprehensive Assessment of Science (WSAC) will assess the Next Generation Science Standards (NGSS) - adopted in 2013 - for the first time in spring 2018. This comprehensive assessment of physical, life, and earth sciences will be a departure from the former biology-only assessment. Schools will administer the assessment in grades 5, 8, and 11. For more information, see the [FAQ](#).
- One of the challenges science teachers face is that students may not be exposed to much science until the 5<sup>th</sup> grade, putting responsibility on 5<sup>th</sup> grade teachers to help students acquire the knowledge and skills they should have learned in the previous grades. See [“Why Do We Need to Teach Science in the Elementary School.”](#)
- There are close to 300 science “fellows” (teacher leaders) statewide, distributed throughout each ESD region, who are deeply knowledgeable of the NGSS and helping other teachers to become skilled.
- The 2018 NGSS assessment data will become the first of three years of baseline data, needed if science is to be added to the Every Student Succeeds Act (ESSA) accountability framework in a few years.

## Washington State University STEM Education Research Summit Highlights

**Janet Hart Frost**, Director, WSU Spokane Health Science STEM Education Research Center

The WSU College of Education STEM Education Research Summit, held on September 27, 2017, highlighted a few of the many STEM and STEM Education research projects occurring in the College of Education and across WSU. The presenters had expertise in multiple fields, including Educational Psychology, Mathematics and Science Education, Special Education Technology, and Cultural Studies and Social Thought in Education. The research shared can be grouped into three major focus areas, many of which are aligned with the STEM Alliance's emphasis on preparing students to pursue STEM-related careers.

1. Supporting and studying STEM learning and application of technology for underrepresented and underserved students and adults, particularly Native American and K-2 students and students and adults with special needs or disabilities;
2. Analyzing and improving mathematics and science education through examination of the effects of assigned curricula and strengthening teacher preparation programs through inter-institutional collaboration; and
3. Examining the approaches and effects of innovative STEM-focused learning environments, including prioritization of caring teacher-student relationships, novel means of integrating mathematics and computer science into project-based learning, and student development of unique "STEM Ways of Thinking."

## Career Connected Learning/Workforce

### Swiss Delegation Study Mission Report

**Mike Meotti**, *Executive Director, WSAC*

The Swiss study mission offered an exciting opportunity to learn about a high performing education and career development ecosystem. The Swiss system appears to provide a wide range of student-friendly options that virtually eliminates "dropouts." It also offers a variety of options for continuing one's education after an apprenticeship or initial educational program.

### Career Connect Washington Task Force Update

**Eleni Papadakis**, *Executive Director, Washington Workforce Education and Training Board*

The Career Connect Washington Task Force is a public-private partnership to accelerate career connected learning for students in Washington State and is a follow on to the ongoing National Governors Association Policy Academy on work-based learning (Phase I completed in June 2017; Phase II begins in January 2018). The Workforce Board, in collaboration with the Office of the Governor and Microsoft, is taking the lead on convening the task force and associated conferences.

The Task Force will meet on November 29, 2017, to prioritize policy recommendations. Some of the categories of recommendations the Task Force will consider:

- Career Connect Washington System Planning
- Career Planning
- Align Career and Educational Pathways
- Expand Apprenticeship System
- Rural and Underserved Communities
- Staff Professional Development

The Task Force members include:

Co-Chairs

**Brad Smith**, President – Microsoft Corporation

**Perry England**, Workforce Board Chair, VP of Building Performance - MacDonald-Miller Facility Solutions

**Ben Bagherpour**, VP for Quality, It & Support - SEH America, Inc.

**Phyllis Campbell**, Chair, Pacific Northwest - JPMorgan Chase

**Maud Daudon**, President & CEO - Seattle Metropolitan Chamber of Commerce

**Dave D'hondt**, Chair - Washington Apprenticeship and Training Council

**Timothy Engle**, President - Saltchuk Resources, Inc.

**Shaunta Hyde**, Managing Director, Community Relations - Alaska Air

**Lynne Dodson**, Secretary Treasurer- Washington State Labor Council

**Kristofer Johnson**, President & CEO - Association of Washington Business

**Caroline King**, CEO - Washington STEM

**Eric LeVine**, CEO - CellarTracker

**Suzi LeVine**, US Ambassador to Switzerland and Liechtenstein (Retired)

**William McSherry**, VP, State & Local & Global Corp. Citizenship - Boeing

**Scott Morris**, Chair, President, and CEO - Avista Corp.

**Susan Mullaney**, President, Washington Region - Kaiser Permanente

**Lee Newgent**, Executive Secretary - Washington Building Trades

**Chris Reykdal**, Superintendent of Public Instruction - OSPI

**Sharon Tomiko Santos**, State Representative, Chair, Early Learning & K-12 Education Committee - Washington State Legislature

**Calvin Watts**, Superintendent - Kent School District

**Ardine Williams**, Vice President - Human Resources for Worldwide Operations, Amazon

**Hans Zeiger**, State Senator, Chair, Early Learning & K-12 Education Committee - Washington State Legislature

Career Connect Washington

**Liz Smith**, Assistant Director for Fraud Prevention Labor Standards, Washington State Department of Labor & Industries

**Tim Probst**, Director, Workforce Development Strategic Initiatives, Washington State Employment Security Department

Tim and Liz let the STEM Alliance know that State of Washington Governor Jay Inslee will soon announce awards focused on creating apprenticeships and career connections for youth. The remainder of the notes contain information taken from the [press release](#), issued by the Office of the Governor on December 8, 2017, and summarize information that Tim and Liz shared at the meeting.

*Governor Inslee awarded \$6.4 million in grants to 11 networks that will create apprenticeship and career connections for 29,000 youth – from now through September 2019. The grants support the Governor’s Career Connect Washington initiative and provide STEM (science, technology, engineering and mathematics) learning experiences, job shadows at local employers, career planning, and over 4,800 new internships, pre-apprenticeships, and registered apprenticeships for students.*

*The awardees also expect to move over 1,400 young people, plus more than 400 adults, into new apprenticeships and pre-apprenticeships in fields such as advanced manufacturing, health care, agricultural irrigation systems, building trades, IT and maritime manufacturing.*

*The initiative’s goal is to connect 100,000 students during the next five years with employer internships, registered apprenticeships, and other career connected learning to prepare them for high-demand jobs.*

*Federal money made available through the Workforce Innovation and Opportunity Act provided the funding for these grants.*

*Funds awarded:*

<b>AWARD AMOUNT</b>	<b>AWARDEE (Beneficiary Counties)</b>
\$1,300,000	Career Connect Seattle (King)
\$957,255	Career Connect Northwest (Island, San Juan, Skagit and Whatcom)
\$854,547	Career Connect North Central (Adams, Chelan, Douglas, Grant and Okanogan)
\$852,910	Career Connect Tacoma (Pierce)
\$831,984	Career Connect South Central (Kittitas, Klickitat, Skamania and Yakima)
\$740,000	Career Connect Southwest (Clark, Cowlitz and Wahkiakum)
\$263,303	Career Connect Eastern Washington (Asotin, Columbia, Ferry, Franklin, Garfield, Lincoln, Pend Oreille, Stevens and Walla Walla)
\$150,000	Career Connect Olympic Peninsula (Clallam, Jefferson and Kitsap)
\$150,000	Career Connect Pacific Mountain (Grays Harbor, Lewis, Mason, Pacific and Thurston)
\$150,000	Career Connect Snohomish County (Snohomish)
\$150,000	Career Connect Spokane County (Spokane)
<b>\$6,400,000</b>	<b>TOTAL FUNDING</b>

## Computer Science Week

### Hour of Code

**Alana Aaron**, *Northwest Outreach Manager, Code.org*

### Hour of Code 2017

The fifth annual Hour of Code challenge is taking place next week, December 4-11, 2017. Currently, the Hour of Code is fueled by 400 partners, 700,000 teachers, in all 196 countries. Approximately 40% of Hour of Code events are international.

It has grown tremendously since its launch in 2013, when Alana first did an Hour of Code with her fifth grade students in Washington Heights in New York City. She does not have a background in computer science, but she knew it was a skill that would open doors for her students. Their response was so positive and the potential impact so obvious that she went on to teach Code.org's 20-hour courses. Alana joined Code.org as a facilitator in 2014 to help train other teachers in the curriculum, and in early 2016, she left the classroom to work on the Mayor's CS4All initiative. Last month, she relocated back to the Pacific Northwest and joined the Code.org team full-time.

### What is important to know about the Hour of Code?

- **It is inclusive.** This is not about Code.org. It's about the CS Education Community at large. When teachers visit [hourofcode.com/learn](http://hourofcode.com/learn), they can access activities from Code.org as well as many of our partners.
- **An Hour of Code is great at breaking stereotypes and raising interest.** One example is the impact on high school girls. The percent of female high school students with no prior CS experience who agreed with the statement "I like computer science" rose from 55% before an Hour of Code to 75% after an Hour of Code (<https://code.org/about/evaluation/hourofcode>).
- **An Hour of Code is only a start.** An Hour of Code helps dispel myths about computer science by proving it is approachable and fun. We can use this momentum to make lasting change. This year's theme is "Beyond an Hour of Code."

Code.org is working with the Office of Superintendent of Instruction (OSPI) and the State of Washington Governor's Office to launch commitments to:

- 1) Integrate computer science into education at every elementary school
- 2) Teach computer science at every middle school
- 3) Offer at least one high-quality computer science course at every comprehensive high school in our districts by the 2020-21 school year.

There will be an announcement. Please help us spread the word once OSPI sends out the letter.

## OSPI Computer Science Grants & District Commitments to Hour of Code

**Shannon Thissen**, *Computer Science Program Supervisor, Office of Superintendent of Public Instruction*

### **OSPI Computer Science Grants**

OSPI received a great group of applications for the 2017-2018 computer science grant awards. It received 30 applications with 25 applicants receiving funding and an additional three applicants provided services from within an approved grant that encompasses their area.

Shannon highlighted a couple of applications.

Academy for Precision Learning: *Academy for Precision Learning (APL) is a K-12 school that provides a nurturing, inclusive and individualized learning experience for students on the autism spectrum and their typically developing peers. Through their TEALS partnership, APL will increase the level of computer science education offered in our classrooms, following our model of promoting academic achievement and social development of students who benefit from a smaller, supportive learning environment.*

OSPI is excited to hear about successes students with disabilities can achieve. OSPI appreciates TEALS/Microsoft Philanthropies for its ongoing support of and outreach to all schools.

Washington Association of Education Service Districts (AESD) – East: *The four Eastern Washington ESDs – 101, 105, 123 and 171 – propose a strategic alignment of collective vision, expertise, resources, data collection and communication, to advance equitable access to computer science education. AESD-East, as it is known, will address the region’s CS needs through a comprehensive project serving both students and teachers. The project will serve a 20-county rural region enrolling 279,348 students in 136 districts (combined 56.5% free and reduced lunch); and 131,055 students of color (46.9% of total).*

*Many rural Eastern Washington communities have limited access to high-quality CS education. This consortium has evaluated numerous programs, assets and resources, and identified partnering programs that will increase: awareness, participation, engagement and student achievement in CS for all rural K-12 students.*

AESD- West: *The goal of this project is to provide K-12 students equitable access to high-quality computer science education. To accomplish this goal, five educational service districts on the west side of Washington State formed a consortium to create an innovative delivery system that engages all students in computer science (CS) education with a specific focus on districts that serve high numbers of students who are at risk socially, economically, educationally. Special care will be taken to recruit girls to CS programs. A sequence of programs using Code.org and Washington First Robotics will introduce teachers from K-12 to CS and help them incorporate Washington State CS Standards into their curricula. A robust evaluation plan will determine: the effectiveness of professional development workshops; knowledge and skills gained by teachers*

*and students; degree of CS integration into instruction; and numbers of teachers and students touched disaggregated by at risk categories.*

OSPI is excited about the opportunity to expand the successes of Washington’s educational service districts to include strategic partnerships across the state. Thank you to the AESD and all state ESD’s participating. Additionally, OSPI would like to thank the AESD for supporting a high-quality evaluation system for both of these programs. It will be beneficial to all programs in the state to see what is working and what is not.

Nespelem School District: *Our project will continue our integration of technology by providing 1:1 student/computer ratio in all classrooms including Special Education and Preschool. This will continue to develop fluency using technology for living, learning, and working. All students will be able to create, communicate, and collaborate their evaluated and analyzed information and computational artifacts. All teachers will receive professional development on integrating computer science that is embedded in core content standards. Native American language teacher will be volunteering hours to work with students on computer science standards.*

The 1:1 matching requirement of the grant is onerous for small, rural and poor school districts. Nespelem School District is thinking outside of the box, through community involvement to provide computer science instruction to their students.

#### **District Commitments to Code.org**

The options available for Code.org’s district commitment to Computer Science Education week is either an announcement or a pledge. Superintendent of Public Instruction Chris Reykdal will be releasing an announcement instead of a district commitment or pledge, as OSPI did last year when announcing the signing of the Washington K-12 Computer Science Learning Standards.

OSPI announcement:

“In 2017, the Washington State Legislature appropriated \$1 million for computer science education grant funding through the Office of Superintendent of Public Instruction (OSPI). The funding will provide schools and school districts with opportunities to train teachers, purchase technology, and engage students from underrepresented populations. So far, OSPI has awarded 25 grants to high schools, school districts, non-profits, universities, and Educational Service Districts.

OSPI is also collaborating with TechStart, an education initiative by Facebook, to engage students in computer science during the 2017–18 school year. This opportunity provides high schools with 60 percent or higher free or reduced-price lunch populations the opportunity to receive free virtual reality equipment, curriculum, teacher training, and supported student activities. The goal of these project-based learning experiences with modern technologies is to educate and promote student interest in computer science.”

## NEXT MEETING

**February 14, 2018** – Washington State Capitol Campus, John A. Cherberg Building, 298 15<sup>th</sup> Avenue SW, Olympia, Washington 98504 | Conference Room A-B-C

## MEETING ATTENDEES

<b>STEM EDUCATION INNOVATION ALLIANCE - Meeting Participants - November 28, 2017</b>			
<b>STEM ALLIANCE MEMBERS</b>			
<b>First Name</b>	<b>Last Name</b>	<b>Position Title</b>	<b>Organization</b>
John	Aultman	Executive Policy Advisor for Higher Education and Workforce Development	Washington State Office of the Governor
Jeff	Charbonneau	2013 National Teacher of the Year	Zillah High School
Maud	Daudon	President & CEO	Seattle Metropolitan Chamber of Commerce
Paul	Francis	Executive Director	Council of Presidents
Janet	Frost	Director	WSU Spokane Health Science STEM Education Research
Evangelina	Galvan Shreeve	Director, Office of STEM Education	Pacific Northwest National Laboratory
Kathryn	Kurtz	Executive Director	Pacific Education Institute
Ed	Lazowska	Bill & Melinda Gates Chair	University of Washington Computer Science &
Glenn	Malone	Executive Director	Puyallup School District - Assessment, Accountability & Student Success
Marcie	Maxwell	Citizen Member	Former State Representative
Mike	Meotti	Executive Director	Washington Student Achievement Council
Rai Nauman	Mumtaz	Graduate & Professional Student	Student Representative
Eleni	Papadakis	Executive Director	Workforce Training and Education Coordinating Board
Dana	Riley Black	Executive Director STEM, Legislation & Partnerships	Everett Public Schools
Naria	Santa Lucia	Executive Director	Washington State Opportunity Scholarship
Michael	Schutzler	CEO	Washington Technology Industry Association
Gene	Sharratt	College Promise Coalition and Executive Director	Office of Superintendent of Public
Brian	Teppner	Principal, McKnight Middle School	Renton School District
Nancy	Truitt Pierce	Director, School Board	Monroe Public Schools
<b>OTHERS</b>			
<b>First Name</b>	<b>Last Name</b>	<b>Position Title</b>	<b>Organization</b>
Alana	Aaron	Northwest Outreach Manager	Code.org
Alisha	Benson	Chair, Policy Committee	Washington STEM
Nancy	Dick	Director of Workforce Education	State Board for Community and Technical Colleges
Ellen	Matheny	Assistant Director of Operations	Washington Student Achievement Council
Daryl	Monear	Associate Director for Academic Affairs and Policy	Washington Student Achievement Council
Patrick	O'Steen	Senior Regional Manager, TEALS Pacific Northwest   Computer Science in Every High School	Technology Education and Literacy in Schools (TEALS) / Microsoft Philanthropies
Abel	Pacheco	Director of Strategic Engagement	Washington Mathematics Engineering and Science Achievement (MESA)
Tim	Probst	Director, Workforce Development Strategic Initiatives, Executive Programs	Washington State Employment Security Department
Juliet	Schindler Kelly	Director, Government Relations and Advocacy	College Success Foundation
Liz	Smith	Assistant Director for Fraud Prevention Labor Standards	Washington State Department of Labor & Industries
Kathe	Taylor	Assistant Superintendent for Learning and Teaching	Office of Superintendent of Public Instruction
Shannon	Thissen	Computer Science Program Supervisor	Office of Superintendent of Public Instruction
Maddy	Thompson	Director of Policy & Government Relations	Washington Student Achievement Council

Staff at the Washington Student Achievement Council compiled the meeting notes, with edits and additions by the presenters.