



# STEM Education Innovation Alliance

## MEETING NOTES

**DATE** May 15, 2018  
**TIME** 10:00 AM to 2:30 PM  
**LOCATION** Vigor Harbor Island Shipyard / Training Room  
1801 16<sup>th</sup> Avenue SW  
Seattle, Washington 98134

### WELCOME

**Sue Haley**, *Executive Vice President for Human Resources and Administration*, with Vigor welcomed the STEM Alliance members to the Vigor Harbor Island Shipyard.

### INTRODUCTIONS

**Gene Sharratt**, *Co-Lead*, STEM Education Innovation Alliance, asked members and guests to introduce themselves. A list of meeting participants is included at the end of the meeting notes.

### CAREER CONNECT WASHINGTON

**Maud Daudon**, *Executive Leader*, Career Connect Washington

#### **Overview of Career Connect Washington initiative, goals, timeline, and participants**

The goal of Career Connect Washington is simple. We have 740,000 jobs projected in the next few years. Seventy percent require a post-secondary credential of some kind – either a traditional degree or even an apprenticeship. Currently, a little over 30% of high school graduates go on to get a post-secondary credential by age 26.

Governor Inslee's office identified a strong need for employer enthusiasm. Designing a system that meets the needs of employers and students should be a high priority for both the education sector and businesses.

Policy partners need to:

- Tell us what they need
- Organize industry convenings

Swiss apprenticeship model – Susie LeVine spearheaded efforts to take a closer look at the Swiss model, with the goal of better understanding promising practices and to see what we might be able to adopt and adapt in Washington State.

In Switzerland, students in 10<sup>th</sup> grade have a choice:

- Apprenticeship (applied learning) OR traditional academic program
- Three-year apprenticeship (two-year apprenticeship for academic track)
- At the end, the student receives the same credential as the academic track

Internship Model Progression – The Swiss have a long-term model for introducing students to apprenticeships and internships, from early in their educational careers.

1. Career awareness
  - a. Job fair
  - b. Switzerland has a yearly job fair from early age
2. Career exploration
  - a. Job shadowing
3. Career prep
  - a. Internship
  - b. CTE class for High School credit
4. Career Launch
  - a. Connecting students from high school experience into a career
  - b. Meaningful on the job experience
  - c. Coupled with learning and postsecondary credential
  - d. Propels people forward instead of losing them

Unlike traditional trade fields where people would expect the most apprenticeships, apprenticeships in Switzerland are in fields that most might not traditionally expect - banking, insurance, government, and other business.

Students have tremendous social and emotional development opportunities during the apprenticeships.

- Employers want students to finish
- 100 percent completion is a badge of honor for institutions

How could Washington measure its success in introducing students to an apprenticeship model?

- In 10 years, educational attainment level in Washington increases upward.
- Increased youth employment (16-29 years of age) – survey was unclear if full time or part time is considered working.
- Median wage increase.
- Economic prosperity for people living in Washington State.

The end goal for this project is economic prosperity in Washington State – maintaining a high Gross Domestic Product (GDP) for the state will bring prosperity to all.

We would like to see 100% of students get some exposure to career connected learning at some level.

## Discussion Highlights

Would like to see increased high school graduation rate as a metric of success.

Career awareness – how do we embed career fluency into our schools rather than outside the school system?

Career metrics – college career and life ready – career metrics are non-existent – how do we connect students earlier in the process?

We are not Switzerland – we need to be careful in our approach to make sure that this is an equitable system.

We need grades kindergarten through 12<sup>th</sup> in this effort – OSPI – School directors could be a crucial ally in this process as they are in every community.

Getting employers involved – part of this is finding a pipeline and giving them a clear focus – consistently engaging industry so they see their efforts as focused and considered in the big picture.

Bear in mind every young adult has multiple pathways – for example, military pathways are viable and should be included in this exploration.

In Switzerland, is there a difference in the way the culture perceives people (i.e., their “worth” to society) who have gone through the apprenticeship pathway? No. Some of the top doctoral candidates and professors have gone through the apprenticeship pathway. Due also to generational differences – Generation Z is more pragmatic.

## **MARITIME INDUSTRY**

**Sue Haley, Executive Vice President for Human Resources and Administration, Vigor  
Vigor’s Hiring Challenges and Workforce Development Initiatives**

Vigor Harbor Island Shipyard covers 27 acres and has three dry docks. 500 employees work onsite, 650 across the state and 1500 employees in broader Vigor entities. Vigor does a lot of work for the United States Department of Defense, cruise ship companies, and small business. Vigor offers living wage jobs and leadership development in the much-needed fields of the maritime industries.

Vigor hires skilled workers for these careers:

- Maritime architects
- Welders, machinists, riggers, electricians, pipefitters

How does Vigor compete with construction apprenticeships? The maritime industry is not the highest paying field, but the people who work at Vigor enjoy their workplace.

One of Vigor's biggest concerns is that 25% of its employees will be retiring in next 10 years. Vigor staff are working to pass on technical expertise to younger workers. The generational and age gap at Vigor is large: ages range from 18 to 75 years of age.

One way Vigor is addressing this issue is to partner with South Seattle College's marine welding program. About 50 students a year complete a certificate program in marine welding from SSC in partnership with Vigor, gaining valuable work experience during their course of study. In addition, another 50 Vigor employees enroll in evening classes to increase their current skills.

Question about automation – Because of the advancements in robotic automation in manufacturing and fabrication, will these jobs be available in 5 to 10 years? Vigor is moving into using robotics. They make work in the shipyards faster and safer. However, Vigor does not view this as a trend that will cost human jobs. Vigor views robots as supplementing the existing workforce.

Vigor is trying to change expectations about the work environment to make it a place where a diverse workforce can thrive – women, etc.

It wants to make sure that it is a safe workplace – the curve has improved. In the past 30 years, the total number of on-the-job injuries has decreased dramatically, and, of those reported injuries, the number of serious injuries have decreased significantly.

What does Vigor see coming in the future? New and emerging technology – the gradual transition of traditional ferries to electric ferries. Vigor has also started using paperless strategies for workers in the fields – from an app on their phones, workers are able to take real-time pictures of problems on site and send them to engineers in the main office, who can make suggestions to the welders on site. This saves time, paper and money for both Vigor and the end-user.

Have K-12 districts reached out to Vigor to explore internship/apprenticeship opportunities? There is a great interest from the K-12 system in creating opportunities, but it is a slow path. Vigor has partnered with schools, offering tours and some limited apprenticeships. However, with liability/safety issues, it is difficult to introduce hands-on apprentices that involve K-12 students.

### **MARITIME WELDING PROGRAM AT HARBOR ISLAND TRAINING CENTER**

The Maritime Welding (Welding Intensive for Maritime & Manufacturing Environments) program provides students a foundation in marketable welding and fitting techniques for the maritime (world-class fishing vessels, barges and ferries) and general manufacturing industries. At South Seattle College and Vigor Harbor Island Shipyard Training Center, a classroom-in-a-shipyard, students learn within a

real-working environment by instructors with industry experience. South Seattle College offers a comprehensive six-month maritime welding training program, leading to a professional industry-recognized welding certifications specific to maritime welding. South Seattle College partners with maritime industry leader Vigor to offer this world class maritime welding training program.

**Veronica Wade, Dean, Professional Technical and Workforce Education, South Seattle College**  
**South Seattle College Maritime Welding Program**

SSC is committed to access and affordability – meeting the workforce need in the maritime industry. Legislators and community champions helped with getting the funding for the development of this program – an effective partnership. The program provides a technical curriculum and training.

- Maritime is large industry and key economic engine in Washington State
  - \$21.4 billion in business gross income
  - 70,000 jobs
  - 75 ports in Washington State
- There is a need in industry
  - High retirement anticipated in next 10 years – 20 to 25% of workers will retire
  - Need to create an industry pipeline for skilled trades
  - Number of people entering industry is decreasing
- If there is an identified need, who will take action?
  - Vigor has been a champion
- How did it happen?
  - Community interest
  - Existing model at Vigor in Portland
  - South Seattle has a dry land welding program
    - Tied some of those assets into maritime welding
  - Vigor provided the training space and equipment
  - Other key partners
    - Legislators
    - Pipefitters Union
    - Workforce development Council of King County
    - Community-based organizations
- Curriculum
  - Articulation agreements with K-12 partners and skills centers
    - Seattle Promise and 13<sup>th</sup> Year Scholarship
  - Multiple maritime welding certification programs
    - Manufacturing credentials as well (forklift, OSHA, etc.)
    - More credentials equals more employee flexibility in a project-based industry
  - Wraparound services to tie students into college as well as jobsite
- Student statistics
  - 17-25 students per cohort
    - 83% completion rate

- 75% employed in industry after 3 months
- Diverse entry population
  - Gender/race
  - Poverty/extended unemployment/food assistance
- Most students work during the program
- Support services
  - Community-based Organizations
    - Financial support
    - Class materials
    - Transportation assistance
  - Program Navigator
    - Recruitment
    - Orientation
    - Career development
- Industry entry process
  - In class presenters
    - Vigor Human Resources
    - Union representatives
    - Other professionals
  - Site visits
  - Events
    - Marine exposition
  - Career Prep
    - Resume/interview skills
    - Job search assistance
    - Evening classes - designed for upscaling careers
- “Pain points” for students
  - Economic difficulties
    - Working while in class
    - Childcare
  - Criminal background
- Program capacity
  - Always looking for more students
  - Haven’t recently reached capacity
    - Spreading the word about the program might help

**Ona Fisher**, *Career Specialist/Navigator, Professional and Technical Education Department, South Seattle College*

- The location of the training program is not on the South Seattle College campus. It is a different model – a classroom-in-a-shipyard.
- 80 to 82% completion rate from the marine welding certificate program.

- Starting wage for employees is around \$26/hour.
- Students who come into the program:
  - 41% are unemployed and 20% have been unemployed for a considerable amount of time
  - 12% women
  - 17% veterans
- SSC’s goal is increase these percentages
- Many students work full time or part-time during the program, out of necessity
- One reason for the high completion rate is the support provided for housing assistance, financial support for medical expenses, supplies, transportation, gas cards, etc.
- Students in this program are not eligible for typical federal funding, such as FAFSA or WAFSA, and so work with our Workforce education office that is able to provide grant funding to cover tuition for students based on several eligibility requirements. These include receiving unemployment, food stamp benefits, or needing re-training or up-skilling to be employable.
  - Financial support is one of the biggest factors in students’ ability to complete the program
- SSC Career Specialists/Navigators:
  - Assisting students with ways to overcome challenges the students face in continuing with the program to completion.
  - Preparing students to enter the industry – so they have jobs when they graduate
  - Networking support, etc.
- Articulation into associate programs - all of the classes they take at the center apply toward associate degree programs, if they choose to go that route.
- Many of the students have barriers – unemployed, recently homeless, incarceration background, or needing to work while attending instruction.

**Giovanni English**, *Student*, Maritime Welding Program

**Dan McKee**, *Alumni*, Maritime Welding Program (*Journeyman Shipfitter, Vigor*)

Two SSC students who participated/participate in the marine welding program shared some life experiences with the STEM Alliance members. They each spoke about how valuable this training program is to their respective lives and the comprehensive nature of the curriculum.

### **COMMUNITY COLLEGE STRATEGIC DIRECTIONS**

**Jan Yoshiwara**, *Executive Director*, State Board for Community and Technical Colleges

**SBCTC’s strategic direction on growing professional/technical programs in the community colleges.**

A key focus of the State Board for Community and Technical Colleges (SBCTC) and the college system is closing the skills gap and providing the talent at the requisite skill levels for the range of jobs in high need in Washington State with a workforce that has 740,000 unfilled jobs over the next five years. This is a primary challenge for higher education in Washington.

The solution requires doing things at a large scale. Critical are partnerships at a local, regional level with systemic policies to enable these kinds of partnerships to happen.

Three considerations in building a systemic solution:

- 1) Building a pipeline: It does not work to say, “If we build it, they will come.” We need to build a pipeline that encourages young people to enter these programs.
- 2) The two-year colleges need to improve their completion rates – help students exit with a credential of value.
- 3) Build capacity focused on high demand programs.

Career Connect Washington – community and technical colleges in Washington State can contribute much to this initiative. The college system has extensive experience with registered apprenticeships with 12,000 people currently in the adult apprenticeships. The college system has 500 professional/technical programs located all over the state and 2,000 employers engaged in supporting those programs through their technical program advisory groups.

#### Systemic Challenge - how to transition young people from high school to college and into a technical education program

The average age of a transfer student in the community and technical college system is 21, but the median age for its workforce students is 29. There is a 10-year period where colleges are not catching enough students directly from high school. Many do end up coming to community and technical colleges but at a later age. The challenge is to increase the number of students who attend college with the added goal of encouraging more students to attend when they are 18 rather than wait until they are 29.

Challenges SBCTC is working on:

- Build the same kind of highway in technical education programs that the colleges have for academic programs through the Running Start program. Community and technical colleges served 26,000 Running Start students last year. Most high school students know how to participate in Running Start – which courses to take, how that gets you to an associate degree and how credits transfer to a baccalaureate institution. However, in technical education, these pathways are less defined and transparent. It is challenging for students to figure out how to get from a CTE high school class into a community or technical college technical education program.
- Build a dual credit highway for CTE that parallels the highway for Running Start. Students do not know how technical courses at a community or technical college will map to a high school



diploma requirement. That mapping is very clear for academic courses and very foggy for technical education courses. Colleges and high schools need to do something on a larger, systemic basis in both directions.

- Need to also figure out how technical education courses in high school map to technical education courses in the community and technical colleges.
- High schools and colleges have many successful examples of this mapping around the state, but it is not systemic. To produce the kind of volume (26,000) currently in the academically oriented Running Start program, high schools and colleges need to figure out how to provide a lot more transparency on the technical education side. Currently 40% of kids do not go onto college after high school, which is a big challenge for higher education in Washington.
- SBCTC is working with OSPI to put together some ideas on how to use its Centers of Excellence structures to do this at scale – creating programs for industry clusters rather than at one high school, one college, or one program at a time.
- Change how we talk about technical education and college preparation. “Old school” thinking: technical education is not preparing people for college. This has not been true for a long time and is certainly not true going forward if we consider the 740,000 unfilled jobs and the Career Connect Washington apprenticeship goals. We need to use language that says all of high school is preparing students for college, including technical education. In contrast, all bachelor degrees prepare students for master degrees even though only a fraction of baccalaureate graduates go on to get advanced degrees.

### Applied Baccalaureate Degrees

The college system has been actively engaged for about 10 years in developing and offering applied baccalaureate degrees. 3,000 students have graduated with applied baccalaureate degrees since 2010. SBCTC initiated these programs because it questioned the fairness of lower income students going into “terminal” technical degree programs. It assessed the demographics of students who go into its technical education programs: older than transfer students; higher tendency to be first in their families to go to college and from lower income, working class backgrounds; and greater racial diversity. SBCTC developed this initiative to create pathways from technical education to bachelor’s degrees, and the effort is enormously successful. Outcomes show 40% of applied baccalaureate graduates are students of color and job placement rates are high. This pathway provides a standing opportunity to earn a stackable degree (bachelor’s degree) in areas that are high demand. It breaks down the misconception that a technical program has limits in how far a student can go. This pathway values technical education. The message to students: “You can go just as far if you start in technical education as you can if you start in academic education.”

Increasing graduation rates is a focus for the college system, using an evidence-based guided pathways framework. SBCTC received private funding from College Spark Washington to get this started. 32 out of the 34 colleges in the college system participated in a voluntary, rigorous self-assessment to

evaluate themselves in terms of where they are today and make plans for where they want to be on the redesign principles of guided pathways.

### Capacity

How do higher education institutions drive demand? By paying attention to high demand programs and trends in data, using state and regional data about highest employer need programs. In addition, partnering with industries in high demand fields, can help create student demand for these programs.

- 1) Financial incentive to colleges: Include element in the allocation formula to the colleges that gives a premium (extra funding) to high demand enrollments such as health care, advanced manufacturing, information technology and STEM.
- 2) Focused Budget Requests: Increase programs in areas like advanced manufacturing and healthcare. Align program growth with the new mid-market airplane effort and the healthcare industry demand for nurses and other health care professionals.

### **THE NEXT GENERATION OF STEM TEACHER PREPARATION PROGRAMS IN WASHINGTON STATE**

**Edward Geary, Ph. D., Professor, Western Washington University**

**A statewide, collaborative project – to create Next Generation STEM teacher preparation programs aligned with state science and mathematics standards and 21st century workforce needs.**

The Next Generation of STEM Teacher Preparation Program (NextGen-WA) is a four-year \$3 million project funded by the National Science Foundation.

The basic premise of this project is that by collaborating, sharing expertise, and committing to our own and each other's success, we can come up with innovative solutions and strategies to improve the vast majority of STEM teacher preparation programs in Washington State.

NextGen-WA's definition of STEM education: *STEM education supports each student's ability to apply creatively technological, scientific, engineering, and mathematical practices, knowledge, and habits of mind, and 21st century skills, in making sense of the world and solving new and emerging problems.*

STEM teachers will be more than just teachers of biology, chemistry or mathematics. STEM teachers will have the expertise, ability, confidence, and commitment to reach beyond traditional disciplinary boundaries. Importantly, they will help students:

- 1) Make connections
- 2) Transfer and apply knowledge to solve new problems
- 3) Address community issues and challenges important to their schools and regions.

The NextGen-WA project is currently in the capacity-building phase of this work. Over the next two years, it will pilot innovative changes to its curricula, courses, and programs. The goal is to transform the pre-service component of the teacher development continuum. The central focus of this program

is at the undergraduate level with three critical interrelated components for improving STEM teacher preparation: 1) research-based teaching and learning; 2) collaboration, culture, communications; and 3) subject matter and curriculum goals.

Washington is an adoption state for Next Generation Science Standards (NGSS) and Common Core State Standards (CCSS). This means all of the state's teacher preparation programs for science and mathematics teachers need to be realigned and/or updated to reflect these new state standards.

One of the underlying premises of NextGen-WA is that universities can update their programs more effectively and quickly by collaborating with one another for the benefit of all their respective preservice students and eventually for the benefit of all P-12 students in the state.

A gap analysis conducted in 2015 by Eastern Washington University showed that teacher preparation programs across the State are generally well aligned with NGSS Disciplinary Core Ideas and Scientific Practices. It also showed that the majority of teacher preparation programs are missing elements in engineering, crosscutting themes, and computer science. [Note the Washington State Science Learning Standards (WSSLS) are 95% congruent with the NGSS but also include computer science.]

#### Anticipated Outcomes and Benefits

- State Level
  - Adaptive model for ongoing program improvement through collaboration
- Regional Level
  - Stronger collaborations between institutions of higher education, kindergarten through 12<sup>th</sup> grade schools, nongovernmental organizations, businesses and state government.
- Institutional Level
  - Stronger collaborations between colleges of Education and colleges of Science and Engineering leading to widespread support for improvement of STEM teacher preparation programs
- Program Level
  - NGSS and CCSS aligned STEM teacher preparation programs, courses, and curricula
- Individual Level
  - Faculty – understand, use, and model evidenced based teaching-learning practices
  - Preservice teachers – graduate ready to work in student-centered learning environments that engage all students in meaningful, STEM-based learning

#### Challenges and Needs

- Managing complexity at multiple levels, within and across organizations. Everyone on the project has another full time job.
- Supporting effective communications within and across institutions, regions, working groups, Implementation teams.
- Raising awareness of and support for STEM teacher preparation.

- Need for backbone support (Phase 2 work) to attract, prepare, support, and graduate NextGen STEM teachers and to encourage and sustain regular improvements to our programs.
- Need for an interlinked STEM teacher preparation data system (K-16) to support decision-making and guide program improvements.

### NextGen Goals

- Improve STEM teacher preparation programs statewide using a collaborative, collective impact framework and the PKAL/Keck “River Model” (Elrod and Kezar, 2016) for systemic organizational change.
- Increase the diversity of the STEM teaching workforce to reflect the demographics of Washington State so that all students have a path to becoming a STEM (major)/teacher.
- Create an adaptive, research-based model for improving STEM teacher preparation through collaboration so that other regions or states can use our models, resources, practices, and lessons learned to transform their STEM teacher preparation programs.
- Collective Impact Model Characteristics (Kania and Kramer, 2011):
  - Common Vision: One size does not fit all, but shared vision and goals are more likely to be realized.
  - Shared Measurement: Results are measured consistently, with shared accountability.
  - Mutually Reinforcing Activities: Activities of each group inform others’ plans.
  - Continuous Communication: Builds and maintains trust, collaboration, and motivation.
  - Backbone Support: Takes on the role of overall coordination and management.

## **ROUND TABLE HIGHLIGHTS & POLICY RECOMMENDATIONS**

### **STEM Alliance Members**

When asked about the one takeaway or policy consideration the group should consider in preparation for the upcoming legislative session, STEM Alliance members shared the following:

- How can school districts become partners in STEM education?
- Creating incentives for employers to establish registered apprenticeship programs.
- Making sure the baccalaureates are part of the conversation about career connected learning.
- Regional career connect teams to facilitate connections.
- Think about education holistically – from early learning to higher education.
- Closing the gap for college readiness. Elementary programming.
- Diversifying the teacher workforce. Bilingual education. Mental health access for students.
- Attracting and retaining teachers. Ample and sustainable state revenue.
- Teacher shortage. Take things off the plate before taking things off the K-12 plate.
- How do we increase career connected learning?
- Career awareness – career and technical education funding at 7<sup>th</sup> and 8<sup>th</sup>, why not 6<sup>th</sup> grade. Something put in place for career influencing. Career engagement – how to create partnerships with business.

- Increase employer engagement with education.
- How to pay for the program.
- Improve guidance and counseling. Industry mentors to guide their journey.
- Career connected learning – having conversations with students and parents earlier on. Realizing there are multiple pathways.
- Build in more requirements for high school and beyond plan, have conversations with students about options much earlier.
- Do not forget about STEM apprenticeships – they are good paying jobs.
- Affordability of state work-study is career connected learning.
- Partner with STEM education and teacher training.
- Accelerate current activity.
- Expansion of partnerships. Partnerships with employers, taking out the middleman.

### LEGISLATIVE UPDATE

#### Gene Sharratt

Reviewed successes in most recent legislative session associated with policy recommendations included in the 2018 STEM Education Report Card.

### TOUR OF VIGOR HARBOR ISLAND SHIPYARD AND HARBOR ISLAND TRAINING CENTER

The STEM Alliance members toured the Vigor Harbor Island Shipyard and Training Center. The tour highlights included:

- 1) Nearly complete new Washington State Ferry, “Suquamish,” currently under construction
- 2) Passenger only ferry for the San Francisco Bay area
- 3) Ship repair projects: National Oceanic and Atmospheric Administration (NOAA) vessel, United States Coast Guard Fast Response Cutter, and two Washington State Ferries
- 4) Harbor Island Training Center tour introduced group to the public private partnership between South Seattle College and Vigor and provided a walkthrough of the training building.

*Staff at the Washington Student Achievement Council compiled the meeting notes.*

### NEXT MEETING

October 10, 2018 – WSU Spokane |Spokane, Washington

Meeting Topics: health and life sciences at WSU Spokane, information on leading edge research and medical education, workforce initiatives in health care, tour of research labs, science education.

Meeting in conjunction with:

North American Association for Environmental Education 47<sup>th</sup> Annual Conference  
 “Environmental Education: A Force for the Future”

## MEETING PARTICIPANTS

### STEM EDUCATION INNOVATION ALLIANCE - May 15, 2018 - MEETING PARTICIPANTS

STEM ALLIANCE MEMBERS		
First Name	Last Name	Position Title
John	Aultman	Executive Policy Advisor   Higher Education and Workforce Development
Violet	Boyer	President and CEO
Maud	Daudon	Executive Leader
James	Dorsey	Executive Director
Paul	Francis	Executive Director
Evangelina	Galvan Shreeve	Director, Office of STEM Education
Caroline	King	CEO
Ed	Lazowska	Bill & Melinda Gates Chair
Glenn	Malone	Executive Director
Marie	Maxwell	Citizen Member
Rai	Nauman	Graduate & Professional Student
Dana	Riley Black	Executive Director STEM, Legislation & Partnerships
Naria	Santa Lucia	Executive Director
Michael	Schutzler	CEO
Gene	Sharratt	College Promise Coalition and Executive Director
Nancy	Truitt Pierce	Director, School Board
Jan	Yoshiwara	Executive Director
		Washington State Office of the Governor
		Independent Colleges of Washington
		Career Connect Washington
		Washington Mathematics Engineering and Science Achievement Council of Presidents
		Pacific Northwest National Laboratory
		Washington STEM
		University of Washington Computer Science & Engineering
		Puyallup School District - Assessment, Accountability & Student Success
		Former Washington State Representative
		Student Representative
		Everett Public Schools
		Washington State Opportunity Scholarship
		Washington Technology Industry Association
		Association of Educational Service Districts Network
		Monroe Public Schools
		Washington State Board for Community and Technical Colleges

STEM ALLIANCE MEMBER DESIGNEEES		
First Name	Last Name	Position Title
Joshua	Berger	Governor's Maritime Sector Lead, Office of Economic Development & Competitiveness
Nova	Gattman	Legislative Director
Gregg	Godsey	Director, PLTW Biomedical Sciences Affiliate
Lisa	Kelley	Senior Policy Advisor
Alissa	Muller	Communications Manager
Anna	Nikolaeva	Career Connect Washington Manager, Executive Programs
		Washington State Department of Commerce
		Washington State Workforce Training and Education Coordinating Board
		Washington State University, Spokane Center for Health Science Education Research
		Washington State Department of Labor & Industries
		Washington State Board for Education
		Washington State Employment Security Department

OTHERS		
First Name	Last Name	Position Title
Breann	Boggs	Budget Assistant to the Governor - Higher Education
Kate	Davis	Budget Assistant to the Governor - Higher Education & K12
Giavanni	English	Student, Maritime Welding Program
Ona	Fisher	Career Specialist/Navigator, Professional & Technical Education Department
Edward	Geary	Professor
Sue	Haley	Executive Vice President for Human Resources and Administration
Kainoa	Higgins	Co-Director, Industrial Design, Engineering and the Arts (IDEA) High School
Jordan	Martin	Legislative Assistant
Ellen	Matherly	Assistant Director of Operations
Suni	McCall	Executive Assistant
Dan	McKee	Journeyman Shipfitter
Daryl	Monear	Associate Director for Academic Affairs and Policy
Abel	Pacheco	Director of Strategic Engagement
Abby	Ruskey	Education & Sustainability Specialist
Lynn	Strickland	Executive Director
Maddy	Thompson	Executive Senior Policy Advisor   Education
Veronica	Wade	Dean, Professional-Technical and Workforce Education
Marc	Webster	Director of External Affairs
		Washington State Office of Financial Management
		Washington State Office of Financial Management
		South Seattle College
		South Seattle College
		Western Washington University
		Vigor
		Vigor
		Tacoma Public Schools
		Washington Student Achievement Council
		Washington Student Achievement Council
		Vigor
		Vigor
		Washington Student Achievement Council
		Washington Mathematics Engineering and Science Achievement
		United States Partnership for Education for Sustainable Development Fellow
		Aerospace Joint Apprenticeship Committee
		Washington State Office of the Governor
		South Seattle College
		Washington Student Achievement Council