



STEM Education Innovation Alliance

MEETING NOTES

DATE October 10, 2018
TIME 10:00 AM to 2:00 PM
LOCATION Washington State University Health Sciences Spokane
600 N. Riverpoint Blvd.
Spokane, Washington 99202
Spokane Academic Center (SAC), Room 249

WELCOME AND INTRODUCTIONS

Gene Sharratt, Co-Lead, STEM Education Innovation Alliance

SPOKANE REGION INITIATIVES FOR GROWTH IN LIFE SCIENCES INDUSTRIES

Life Sciences Spokane VISION 2030: The creation of a health care and life sciences industry hub
Marcelo Morales, Founder, A4Ventures and Co-Chair, Life Sciences Spokane VISION 2030, Greater Spokane Incorporated

The history of this effort began back in 1987 with a group of community leaders that decided to reinvigorate the core of Spokane by establishing a downtown higher education hub, known then as the “Riverpoint Campus.” Continuous growth through today has resulted in the now 770-acre University District, which houses a thriving multi-university health and medical sciences education ecosystem.

In 2014, the community got together, convened by Greater Spokane Inc. (GSI), and began a VISION 2030 strategic initiative to take advantage of the multitude of regional Spokane assets. This initiative now is not only focused on addressing a growing physician shortage and rural health care access issue, but it is also working to grow life sciences research and commercialization, and the healthcare and life sciences industry, of which multiple studies shown will result in unprecedented economic impact.

Today and in the future, GSI continues to convene and collaborate to address priority projects that result in more physicians and rural care access, while growing additional ecosystem components to create a robust life sciences economy in the Spokane region.

- The health care industry serves far beyond the population of Spokane
- Important developments -
 - WWAMI (Washington, Wyoming, Alaska, Montana, Idaho) Program – physician coverage for regional area, particularly the rural locations
 - Physical building in 2013 for pharmaceutical and biomedical
 - Establishment of Washington State University Elson S. Floyd College of Medicine

- Gonzaga University (GU) first private institution to join University of Washington School of Medicine WWAMI program as full partner – “Regional Health Partnership”
- The vision for 2030 has largely been met with leadership and core activities
- Independent studies verified impact on economic development - \$1.7B annual impact; 9% growth in local GDP and 9,000+ new jobs – committee developed dashboard of detailed metrics
- Life Sciences Spokane creates a health care and life sciences industry hub
- Working on advocacy for medical education and graduate medical education (education training in clinic after classroom training)
- GSI supports where appropriate – advocate for funding; federal funding does not account for population change
- Bioscience research to commercialize efforts and drive economic growth – Spokane has small employer innovation and large manufacturers which can attract investors
- Advocating for facilities infrastructure (cost of living, cost of employees, cost of power are lower than other large cities)
- The robust, diverse and collaborative health-related training programs across 7 institutions = talent pool for employers
- Need to address rural care access and continue to grow the life science economy in the region

COLLABORATIONS ACROSS HIGHER EDUCATION SECTORS

Christine Johnson, *Chancellor*, Community Colleges of Spokane

- Ethos of Collaboration and Innovation;
- GSI convener and advocate for regional impact across sectors;
- Higher education leaders in public and private sectors meet regularly to plan and partner in problem solving;
- We recognize and value our teamwork’s impact on regional success and prosperity. Some examples include GSI, Community Colleges of Spokane (CCS) and WSU planned and jointly crafted proposal for Spokane Network;
- Regional network approach is highly successful, effective and aligned;
- Spokane STEM is part of the education infrastructure which includes higher education, business, K12 education and community organizations working together to work on STEM talent/economy;
- CCS, Eastern Washington University (EWU), and Washington State University (WSU) work with K12 school districts on math curriculum, alignment and joint work on expanding undergraduate research with focus on under-represented students and faculty scholarship;
- CCS partners with WSU on direct transfer agreements and health industry and STEM (pre-pharmacy to Doctor of Pharmacy, Nursing, Intro to Engineering Design, CAD, Engineering

Applications, CCS nursing students and faculty have access to WSU nursing simulations and faculty development, CCS to EWU BS Technology, Applied Science in Graphic Design, Information Technology and reverse transfer agreements);

- CCS transfer agreement for international students to GU;
- CCS has 20 upside-down agreements with Whitworth University, including concentration of health degrees: Invasive Cardiovascular Technology, Non-Invasive Cardiovascular Technology, Biomedical Equipment Technology, Orthotic-Prosthetic Technology, Respiratory Care, Surgical Technology, Nursing, and Pharmacy Technician;

Higher education institutions (CCS, EWU, GU, WSU, UW, and Whitworth University) are working with Avista Corporation, Innovation Center at McKinstry Station, City of Spokane, business leaders in health industry and policy leaders on Catalyst, health and life sciences talent development and innovation.

RESEARCH AND INNOVATIVE HEALTH SCIENCES EDUCATION AT WSU SPOKANE

Welcome & Health Sciences Update

Daryll DeWald, *Chancellor*, Washington State University Health Sciences Spokane

Building a national center of excellence in Spokane (Seattle and UW is amazing)

Education transformed my entire extended family's life

College of Pharmacy, College of Medicine, College of Nursing – professional and graduate programs
Stats: 86% WA residents – 71% female – 570 undergraduate and 1,700 total enrollment -230 faculty and 300 staff.

Campus representation of community vision and converted an old railroad.

\$18M of funding comes from National Institute of Health (federal)

IREACH – partnerships for American Indian and Alaska Native health - across all disciplines to support underrepresented students

College of Pharmacy & Pharmaceutical Sciences

Jennifer Robinson, *Associate Dean for Professional Education*, Clinical Associate Professor, Pharmacotherapy

Require 80% on every assessment – set high standard and mimic how people learn and support students

Use a flipped or collaborative curricular model so students can get more deeply engaged at the outset

Students can modify educational experience to meet their career goals

Doctor of Pharmacy MBA and Doctor of Pharmacy PhD degree programs are available

College of Nursing

Mel Haberman, *Executive Associate Dean, Professor*, College of Nursing

The College of Nursing functions as one college, integrating a multi-campus system with locations in Spokane (main campus), Yakima, Tri-Cities, Walla Walla and Vancouver. It currently has over 900

enrolled in the following degree programs: Registered Nurse-Bachelor of Science in Nursing, Bachelor of Science in Nursing, Masters of Nursing, Doctor of Nursing Practice, and Doctor of Philosophy.

Elson S. Floyd College of Medicine

Leila Harrison, *Associate Dean for Admissions, Recruitment and Inclusion*, Elson S. Floyd College of Medicine

The WSU Elson S. Floyd College of Medicine (ESFCOM) is building strategic, mission-aligned pathway programs from the K-16 context into medical school or other health professions. The College currently has four identified pathways:

- WSU Honors College Pathway: This partnership with the WSU Honors College in Pullman supports a handful of pre-med students interested in medicine. This pathway began in Fall 2018.
- Spokane Valley Tech Pathway: This partnership is with the Spokane Valley Schools and in particular Spokane Valley Tech. The program includes a one-week summer program at Spokane Valley Tech for district high school students. This pathway began in Summer 2018.
- Columbia Basin Pathway: This pathway will include partnerships in the Tri-Cities and Yakima Valley area of the state. It will include high school students to begin and may include younger students as the program gets established. The planning for this pathway is underway and expected to begin late Spring/Summer 2019.
- Native American Pathway: This pathway may include multiple partnership statewide. It will likely include high school students to begin and may include younger students to begin. The planning for this pathway is underway however an estimated start time has not been determined.

Sleep & Performance Research Center

Stephen James, *Assistant Research Professor*, Elson S. Floyd College of Medicine

Devon Grant, *Postdoctoral Researcher*, WSU Sleep & Performance Research Center, Elson S. Floyd College of Medicine

The sleep center is exploring industries where there is an element of fatigue and cost of getting it wrong is high.

STEM EDUCATION at PRIVATE, NOT-FOR-PROFIT COLLEGES AND UNIVERSITIES including GONZAGA UNIVERSITY and WHITWORTH UNIVERSITY

Across Washington, private, not-for-profit colleges and universities are preparing students for careers and graduate study in STEM fields. Importantly, the ten private colleges who are members of the Independent Colleges of Washington award 21% of the bachelor and graduate degrees earned in the state.

Terri Standish-Kuon, *President and CEO*, Independent Colleges of Washington

Terri Standish-Kuon presented on the critical role liberal arts-based, private, not-for-profit colleges play in the state's higher education ecosystem, cultivating talent and making it possible for more Washington residents to find their best fit – academically, developmentally, and socially – here at home. These campuses are championing diversity in collaboration with public colleges, creating high-quality opportunities for students and smooth transfer pathways between sectors in preparing Washington's future workforce.

ICW member campuses are powering economies in many corners of the state, creating jobs and connecting students to jobs in their regions. Together they employ more than 8,000 people, making the collective one of the state's Top 20 private sector employers. With students from each of Washington's 39 counties and 135 years of history, ICW's ten member colleges award 21% of the baccalaureate and graduate degrees in Washington, delivering value to our alumni and their families. Across Washington, private, not-for-profit colleges and universities are preparing students for careers and graduate study in STEM fields.

Elisabeth Mermann-Jozwiak, *Dean of the College of Arts and Sciences, Gonzaga University*
Gonzaga University's Science Outreach Program and its Regional Health Partnership with the University of Washington School of Medicine

Gonzaga University Science Outreach

Originally funded by a Howard Hughes Medical Institute grant - Science in Action! - Gonzaga's signature outreach program, collaborates with elementary schools in Spokane to cultivate curiosity in the sciences, recruit students to science majors, and support science teachers at the schools. The Science Outreach Office also offers continuing education and research programs, as well as summer programs for high school students. We operate on the principle that students are most inspired when they are engaged, and when they do science.

University of Washington School of Medicine-Gonzaga University Regional Health Partnership

The partnership, whose goal is to develop innovative approaches to higher education and to advance a shared commitment to serving the rural communities in Eastern Washington, is in its third year. It has already led to numerous collaborations: with the School of Nursing and Human Physiology (interprofessional simulation workshop), the Law School (Law and Medicine course), the School of Leadership Studies (leadership concentration), various partners in the sciences and the humanities (for instance, GU faculty teaching basic science courses and development of medical humanities program), and joint work among students (such as service-learning projects and a joint poster session).

Grant M. Casady, *Associate Professor & Chair – Department of Biology, and Director of Environmental Studies, Whitworth University*

Whitworth University's outreach to local K-12 STEM educators, its growing bioinformatics program, and its emerging focus on expanding its environmental studies program.

1. Outreach to local K-12 STEM educators

a. Biology

- i. **Aaron Putzke** working with Daniel Shay – North Central High School, genomics work with *C elegans*. Murdock Funding, hoping to work with other high school biology teachers in the region to put in an NSF grant
- ii. **Mike Sardinia** – Phys Fridays with Riverpoint Academy students. Physiology observations with mammals and dissections with vertebrates. Instruction is done by Whitworth students, some of whom go on to teach high school (ex. Shannon Wessel, now teaching at Mt. Spokane after doing her MIT degree)

b. Physics

- i. **John Larkin** travels to Northwood Middle School weekly to teach “Flight and Space”. WU students teach 7th graders, they design an experiment for the stratosphere, launch their experiment, track it, and retrieve it to process their data. This Fall will be the 7th time.
- ii. **Marcus Ong** hosts the Dept of Energy Science Bowl – 30 teams of 5 students and their coach (180 participants) test their knowledge of STEM topics

c. Chemistry **Deanna Ojennus** teaches Community Chemistry Outreach every January.

- i. Students design, prepare, and lead a chemistry lab experience on campus.
- ii. Visits are arranged with MESA (Mathematics Engineering Science Achievement) to promote the sciences to underrepresented groups in grades K-12.

d. Math & CS

- i. **Pete Tucker** does an outreach course where students go to 7 local high schools for an hour each week and help teach CS
- ii. With CS teachers association, host a Hackathon for local high school students annually. WU CS students mentor. 24 hour all night event.
- iii. Facebook will be on campus October 29!
 1. 100 HS students registered
 2. keynote speaker Devon Lind, Whitworth CS alumni and founder/CTO of Blender
 3. Whitworth students will demo class projects

e. School of Education

- i. Living Classroom lessons at Evergreen Elementary
- ii. Organizes elementary school Family Science Nights each semester
- iii. **Kathryn Picanco** Creation of a “STEAM Forward” experience with WSU med

- school & On Track Academy
 - 1. science nights for the school, events during the day, and/or in- class demonstrations/activities
 - iv. Center for Gifted Education (**Kerry Breno** participates)
 - 1. Chemistry, Physics, Coding, etc.
 - 2. Camp Metamorphosis (grades 4-6)
 - 3. Camp Opportunity (grades 6-9)
 - v. Specific Endorsements in Environment and Sustainability Education and Computer Science
- 2. Growing bioinformatics program (**Kent Jones**)
 - a. 8 majors currently
 - b. Cross-disciplinary: computer science, molecular biology, biochemistry, mathematics
 - c. Applied coursework with projects involving:
 - i. computational protein modelling and folding,
 - ii. RNA sequence analysis
 - iii. Genomics, especially applied to cancer research
 - d. Research on
 - i. protein modelling for celiac disease and lysosomal storage disorders
 - ii. genomics in the area of developmental biology with ramifications for cancer research
- 3. Expanding environmental studies program
 - a. 22 minors currently
 - b. Courses in Biology, Theology, Political Science, Chemistry, Sociology, Business,
 - i. History, English
 - c. Currently Hanover Research is looking at the financial viability of the addition, consideration of the different options.

Lab Tour | Nursing Simulation

Kevin Stevens, *Director*, Center for Clinical Performance & Simulation, College of Nursing

High Fidelity Simulation in nursing -

Students gain experience through active learning, using manikins, standardized patients, and realistic healthcare scenarios (simulations) under guidance of experienced faculty and staff. The College developed 15 simulations for nursing program and 10 for military. Recent examples of simulations included an active shooter (engaging Nursing, Medicine, Pharmacy, Nutrition and Exercise Physiology, Speech & Hearing) and cardiac simulation (engaging all campus disciplines).

Nursing students engage in 450 hours of simulation per semester at WSU Spokane. WSU Yakima and WSU Tri-Cities also have simulation laboratories.

Video of simulation laboratory in action:

https://www.youtube.com/watch?v=rd0B9u_58K0&feature=youtu.be



Tour of Simulation Lab | Photo Courtesy of Abby Ruskey

STEM INITIATIVES

John Aultman, *Executive Policy Advisor for Higher Education and Workforce Development*, Office of the Governor

Continuing the dialogue on four STEM-related initiatives.

- 1) Career Connect Washington
- 2) Computer Science Education
- 3) Climate Science Education
- 4) College Promise Coalition

Washington Day at North American Association for Environmental Education Annual Conference

Lisa Eschenbach, *Strategic Advisor*, E3 Washington

MEETING ATTENDEES

STEM ALLIANCE MEMBERS			Position Title	Organization
First Name	Last Name			
John	Aultman	Executive Policy Advisor for Higher Education and Workforce Development	Washington State Office of the Governor	
James	Dorsey	President and CEO	College Success Foundation	
Jeff	Estes		Citizen Member	
Paul	Francis	Executive Director	Council of Presidents	
Janet	Frost	Spokane Academic Director	Washington State University College of Education	
Evangeline	Galvan Shreeve	Director, Office of STEM Education	Pacific Northwest National Laboratory	
Christine	Johnson	Chancellor	Community Colleges of Spokane	
Sue	Kane	Apple STEM Network Director	North Central Educational Service District	
Caroline	King	CEO	Washington STEM	
Gary	Klein	President	Chehalis Bicycle Incorporated	
Kathryn	Kurtz	Executive Director	Pacific Education Institute	
Mike	Meotti	Executive Director	Washington Student Achievement Council	
Rai Nauman	Mumtaz	Graduate & Professional Student	Student Representative	
Abel	Padhoco	Director of Strategic Engagement	Washington MESA	
Dana	Riley Black	Executive Director STEM, Legislation & Partnerships	Everett Public Schools	
Abby	Ruskey	Education & Sustainability Specialist	United States Partnership for Education for Sustainable Development Fellow	
Naria	Santa Lucia	Executive Director	Washington State Opportunity Scholarship	
Gene	Sharatt	College Promise Coalition and Executive Director	Washington State Opportunity Scholarship	
Randy	Spaulding	Executive Director	Association of Educational Service Districts Network	
Terri	Standish-Kuon	President and CEO	Washington State Board of Education	
			Independent Colleges of Washington	
STEM ALLIANCE MEMBER DESIGNISEES				
First Name	Last Name	Position Title	Organization	
Scott	Friedman	Associate Director	Association of Washington School Principals	
Lisa	Kelley	Senior Policy Advisor	Washington State Department of Labor & Industries	
Maggie	Osorio	Marketing Associate Government Affairs Team	Code.org	
Emily	Powell	Coordinator of Health Services	Puyallup School District	
OTHERS				
First Name	Last Name	Position Title	Organization	
Heather	Byrd	Development and Events	WSU Health Sciences Spokane	
Grant	Casady	Associate Professor & Chair, Biology Director, Environmental Studies	Whitworth University	
Daryll	DeWald	Chancellor	WSU Health Sciences Spokane	
Joe	Fedock	Interim Dean, School of Engineering and Applied Science	Gonzaga University	
Devon	Grant	Postdoctoral Researcher, College of Medicine	WSU Health Sciences Spokane	
Mel	Haberman	Executive Associate Dean, College of Nursing	WSU Health Sciences Spokane	
Leila	Harrison	Associate Dean for Admissions, College of Medicine	WSU Health Sciences Spokane	
Stephen	James	Assistant Research Professor, College of Medicine	WSU Health Sciences Spokane	
Meg	Lindsay	Director of Education & Workforce	Greater Spokane Inc.	
Ellen	Matheny	STEM Alliance Manager	Washington Student Achievement Council	
Elisabeth	Mermann-Jozwiak	Dean, College of Arts and Sciences	Gonzaga University	
Daryl	Monear	Associate Director for Academic Affairs and Policy	Washington Student Achievement Council	
Marcelo	Morales	Co-Chair, Life Sciences Spokane VISION 2030	Greater Spokane Inc.	
Stacia	Rasmussen	Life Sciences Spokane (VISION 2030) Business Development Manager	Greater Spokane Inc.	
Jennifer	Robinson	Associate Dean for Professional Education, Pharmacotherapy	WSU Health Sciences Spokane	
Juliette	Schindler Kelly	Director, Government Relations and Advocacy	College Success Foundation	
Jim	Schmidt	Senior Forecast Coordinator	Washington State Office of Financial Management	
Rachelle	Sharpe	Deputy Executive Director	Washington Student Achievement Council	