



STEM Investment Council

AGENDA

January 27, 2020
 12:15 pm – 4:30 pm
 Lloyd Learning Center
 2201 Lloyd Center
 Portland, OR 97232

STEFAN BIRD
Chair

MARCELINO ALVAREZ

HERB FRICKE

RITA HANSEN

MARV NELSON

LISA POWELL

PAUL STEWART

Non-voting Members

MELISSA DUBOIS

TODD NELL

Staff

JULIA STEINBERGER

SYDNEY KING

Call/Video conference: https://hecc.adobeconnect.com/stem_council/
 Conference #: 888-808-6929 Participant Code: 2135630

Persons wishing to testify during the public comment period should sign up at the meeting. Times approximate and order of agenda items may vary.

12:15	1.0	Arrival & Lunch	All
12:30	2.0	Welcome & Introductions	Jim Piro, Stefan Bird
12:45	3.0	New member orientation	
	3.1	History of STEM Investment Council	Julia Steinberger
	3.2	STEM education in Oregon	Julia Steinberger
	3.3	Challenges and opportunities	Jim Piro
1:30	4.0	Consent Agenda	Stefan Bird
	4.1	<i>CONSENT ITEM: Approve new, non-voting members</i>	
	4.2	<i>CONSENT ITEM: Approve November 2019 STEM Investment Council Meeting Minutes</i>	
1:40	5.0	Public Comment	Public
		<i>Each individual/group will have a time limit of three minutes</i>	
1:50	6.0	STEM Hub Updates	
	6.1	East Metro STEAM Partnership	Landen Zernickow
	6.2	Portland Metro STEM Partnership	Kristen Harrison, Jerian Abel
2:20		BREAK	
2:30	7.0	Department of Education Update	Alexa Pearson, Deb Bailey & Tom Thompson
2:50	8.1	Legislative/Policy Discussion	Julia Steinberger
	8.2	Timeline for Legislative Session	
	8.3	Proposed policy recommendations for state agencies	
3:20	9.0	Council 2020 Work Plan	Julia Steinberger
	9.1	STEM Education Plan 2.0	
	9.2	STEM Hub Network Monitoring & Advising	
	9.3	2019-21 STEM Innovation Grant Monitoring	
	9.4	2021-23 STEM Innovation Grant Recommendations	
	9.5	STEM Data Dashboard	
4:15	10.0	Other Business & Next Steps	Stefan Bird
4:30	11.0	Adjourn	Stefan Bird



STEM Investment Council

Members:

JIM PIRO, Chair
CELESTE EDMAN
HERB FRICKE
RITA HANSEN
ERIC MESLOW
PAUL STEWART

Ex-Officio Members:

MELISSA DUBOIS
TODD NELL

Technical Advisors:

KAREN HUMELBAUGH
Director, Office of Workforce Investments

KURT TACKMAN
Deputy-Director, Office of Workforce Investments

STEM Staff:

SYDNEY KING
Board Administrator
JULIA STEINBERGER
Director
STEPHANIE SOLOMON
Board Administrator

DRAFT

September 4, 2019

9:00am – 12:00pm

Pubic Service Building

255 Capital St.

Salem, OR 97310

To listen, call: 888-808-6929 Access Code 2135630

MEETING MINUTES

Members Present: Herb Fricke, Rita Hansen, Eric Meslow, Jim Piro

Members Excused:

Ex-Officio, Technical Advisors and Staff Present: Melissa Dubois, Todd Nell, Sydney King, Julia Steinberger, Stephanie Solomon

Standing Business

1.0 Preliminary and Organizational Business

1.1 Chair Piro brought the meeting to order at 9:05 am. Chair Piro provided a few opening remarks and reviewed the agenda.

2.0 Consent Agenda

2.1 ACTION ITEM: Approve May 2019 minutes. After providing time to review the May 2019 minutes, Chair Piro moved to approve. Councilmember Meslow motioned, and Ex-Officio Dubois seconded the motion. Motion passed, minutes approved

3.0 Public Comment

Each Individual/Group will have a time limit of three minutes

3.1 Public Comment: Don Domes, involved with the STEM Innovation Grant on Computer Science and Digital Literacy, spoke to the importance of the STEM Council. He focused on digital literacy. With the last grant cycle, they were able to provide computer science professional development to over 500 teachers.

STEM Investment Council

May 17th 2019 MINUTES (continued)

Members:

JIM PIRO, Chair
CELESTE EDMAN
HERB FRICKE
RITA HANSEN
ERIC MESLOW
PAUL STEWART

Ex-Officio Members:

MELISSA DUBOIS
TODD NELL

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Board Administrator

4.0 Director's Update

4.1 Director Steinberger gave updates regarding STEM Investment Council. The legislative session and funding was not given to STEM Investment Council. Director Steinberger will be moving into a new position, and STEM will remain in her portfolio. A side effect to this change is that Director Steinberger can only support 2 meetings a year rather than the 6 that was custom. Discussion around this topic and what the board can do to support STEM ensued.

Leadership and Strategy

5.0 Department of Education (DOE) Update

5.1 Quite a few topics were discussed:

- New Network meeting cadence discussed, from 6 meetings to 4 a year.
- Hubs: How to monitor progress, track funding, track success, how to align all Hubs. Hub representatives as well as the Council discussed.
- Council raised concern about going on "auto-pilot" regarding Innovation Grants. Checks and balances need to be established.
- Board invited to join STEM Hub Directors' meeting 10/3 at Chemeketa Winema in Salem.
- Success with action teams and work groups.
- ACTION: Deb Bailey will send CIP reports to the council.

6.0 STEM Education Plan

6.1 Chair Piro facilitated discussion on the STEM Education Plan.

Working with Director Steinberger, they tried to create accountability around goals.

Performance targets don't align with initiatives. This creates a gap with performance data reports. It was suggested that a work group be formed to focus on performance targets and initiatives. The STEM Investment Council can be the voice for the Hubs. The full group is needed to look at the STEM Education Plan.

7.0 Adjourn

Meeting adjourned at 11:38am by Chair Piro.

STEM Investment Council

January 27, 2020

Our Vision

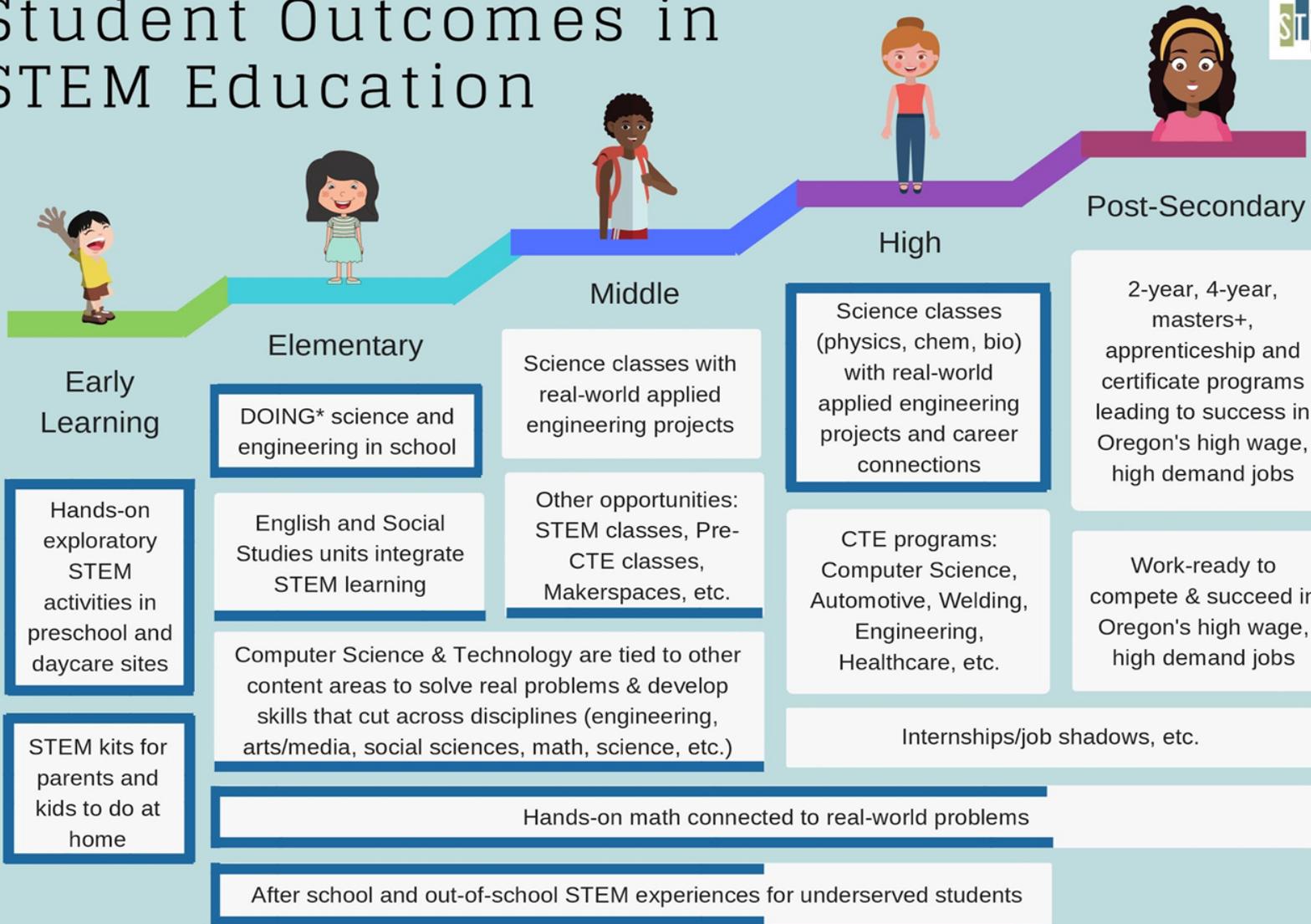
“Portland Metro STEM Partnership (PMSP) collaborates with public and private organizations to create an engaging, rigorous, and equitable STEM education system that increases access to high-demand, high-wage STEM careers while building shared economic and social prosperity.”

How Hubs Work

Bring together P-20 partners to work together to improve outcomes, reduce duplication, and maximize effectiveness with the shared goal of a STEM-capable workforce and STEM-literate & engaged society.

- Neutral connector & convener
- Leverage regional assets & relationships
- Design effective, research-based STE(A)M programming
- Share & build capacity to use research, data, and evaluation

Student Outcomes in STEM Education



Students are ready to engage in a technology-driven, globally-connected society where citizens are called to think critically and work collaboratively to solve complex challenges.

STEM builds student competencies in: critical thinking & problem solving, reasoning & argumentation, creativity & innovation, personal & social responsibility, continuous learning & self-direction, perseverance & adaptability, collaboration & teamwork, and other workplace skills.

DOING* = Investigating, Building Models, Engineering Design, etc.
STEM = Science, Technology, Engineering & Math
CTE = Career & Technical Education

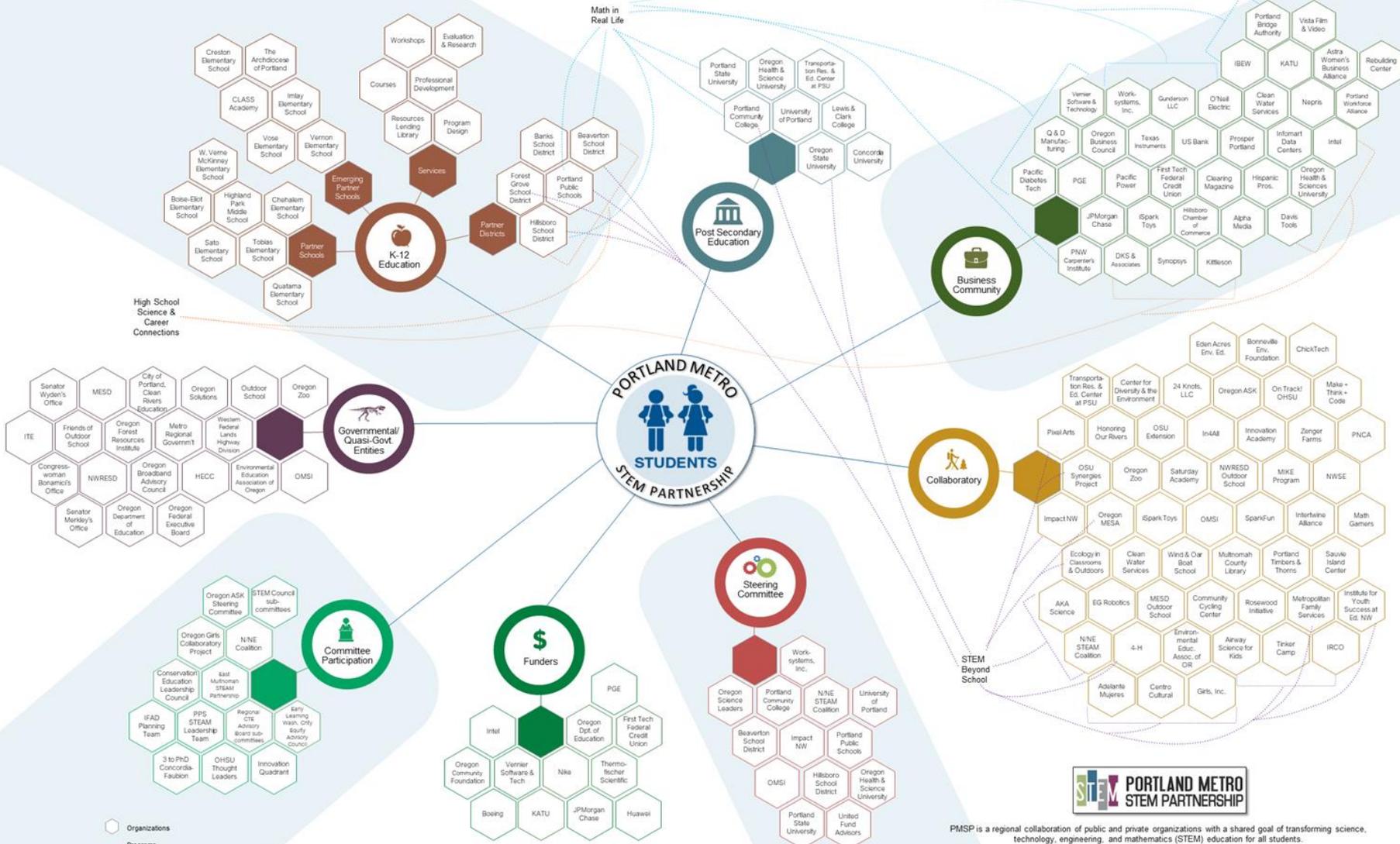
Our Region

Key Partners:

- Beaverton, Hillsboro, Portland Public, Forest Grove and Banks School Districts
- PSU, OHSU, & UP
- Worksystems, Inc. & industry partners
- Close to 100 community partners

Facts:

- Washington & most of Multnomah Counties
- Over 115,000 students and over 6,000 educators (K-12)
- 44% of students considered economically disadvantaged



PMSP is a regional collaboration of public and private organizations with a shared goal of transforming science, technology, engineering, and mathematics (STEM) education for all students.

This mindmap was adapted from Marion County STEM Education Network.

Updated: March 2019



What Portland Metro STEM does

Educator Professional Development

- **1145 educators,**
- **totaling 13,882 person-hours,**
- **with the potential of impacting a projected 94,678 students.**

Leveraging Funding

- **Grants and sponsorships \$435,706**
- **Partner investments in Hub initiatives \$1,175,600.**
- **In-kind time and resources \$397,490**
- **Funding secured for the future \$992,521**

Collaborative Projects

- **Regional 3-year High School Science Curriculum (& PD)**
- **Career-Connected Learning**
- **STEM Beyond School**
- **STEM Kits for Early Child Educators & Care Providers**

Empowering Educators

Leveraging Funding

Changing Systems

July 1, 2017 - June 30, 2019

STEM Hubs seek success at scale

A key example:
High School Science for All

HS Science: The Problem

Oregon Districts have struggled to fully implement NGSS

- Challenges: funding and professional development capacity
- The Need: access to high quality Professional Development and NGSS-aligned curriculum

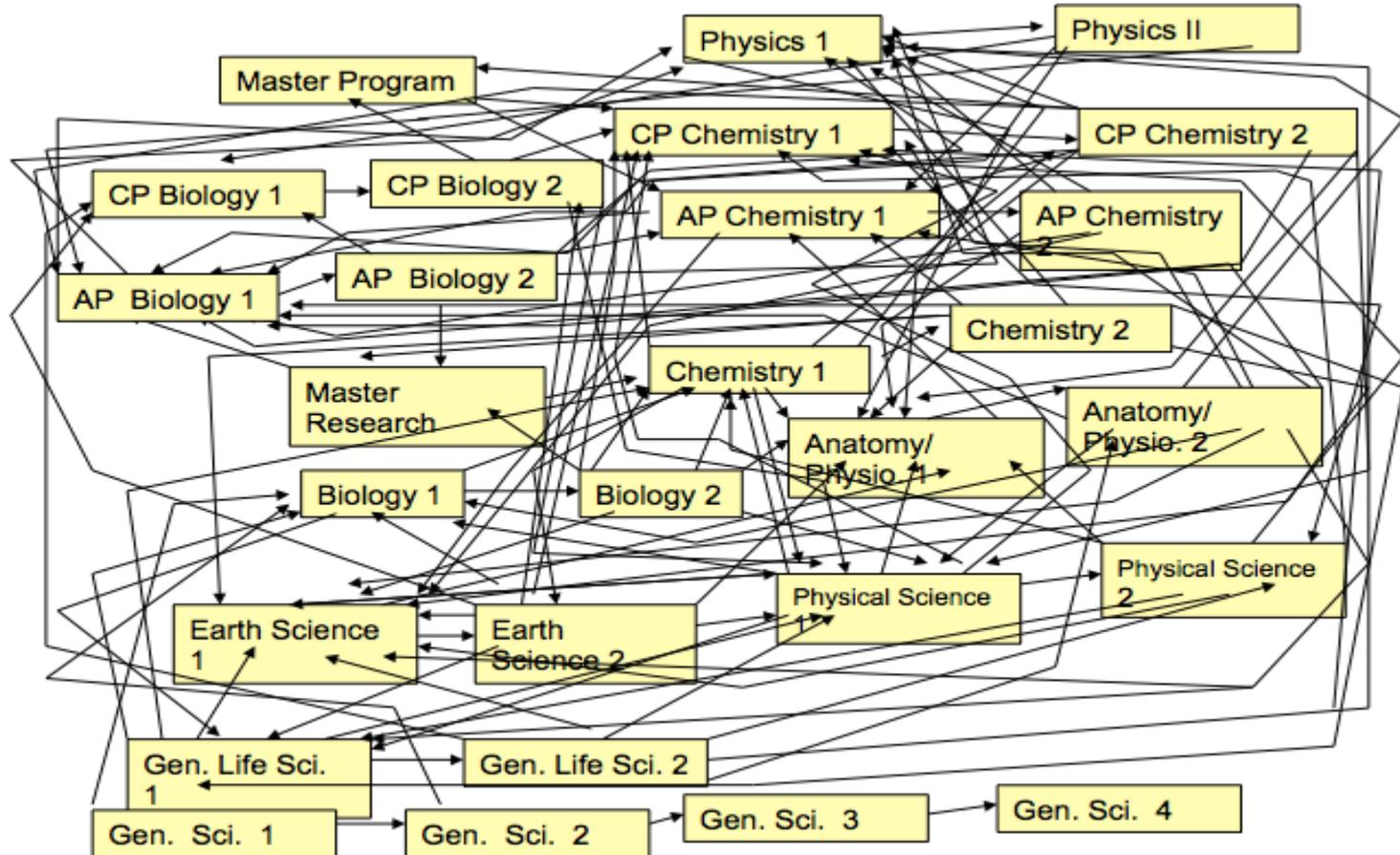
Research shows

- Students who have three full years of rigorous science courses in high school are far more likely to pursue and succeed in STEM majors.

Too many pathways to science credit

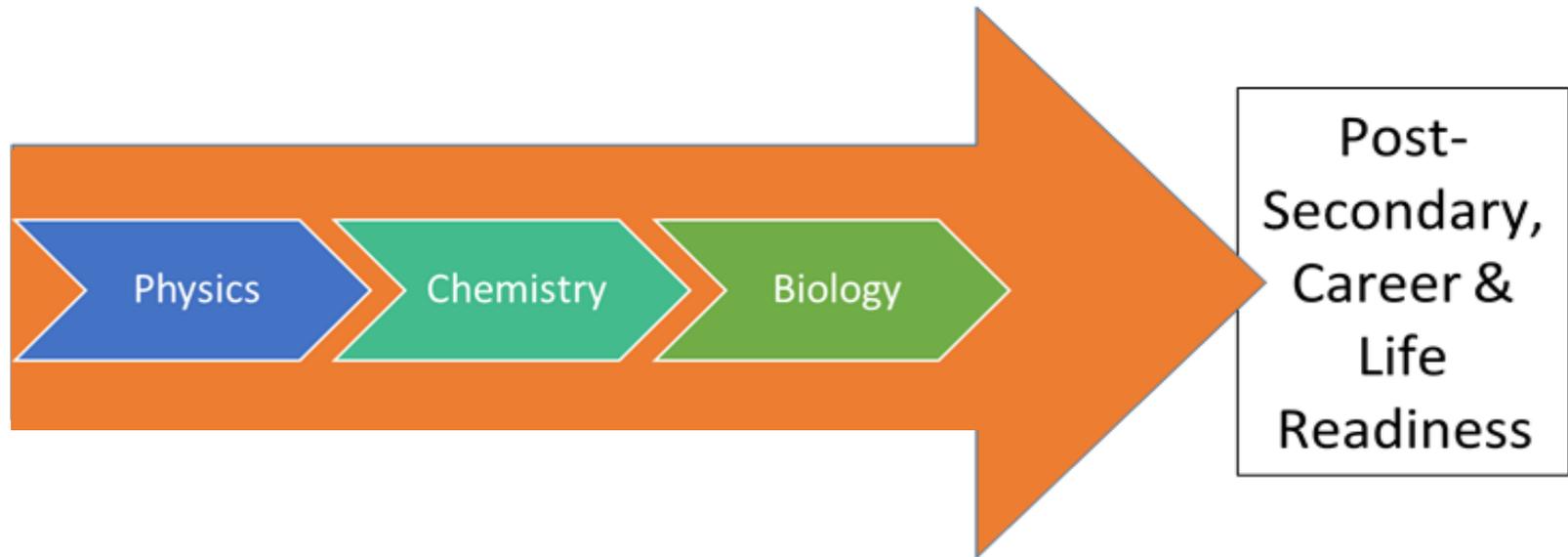
The Problem

Too many pathways for science credit



The Solution

One High School Science Sequence



Impacts by the Numbers



26,000

High School Students taking part in Patterns Science courses across Oregon

This started with PMSP and two districts!
There are now **56 districts** and **80 high schools** from across the state participating and reaching **one out of every three** HS students in Oregon!

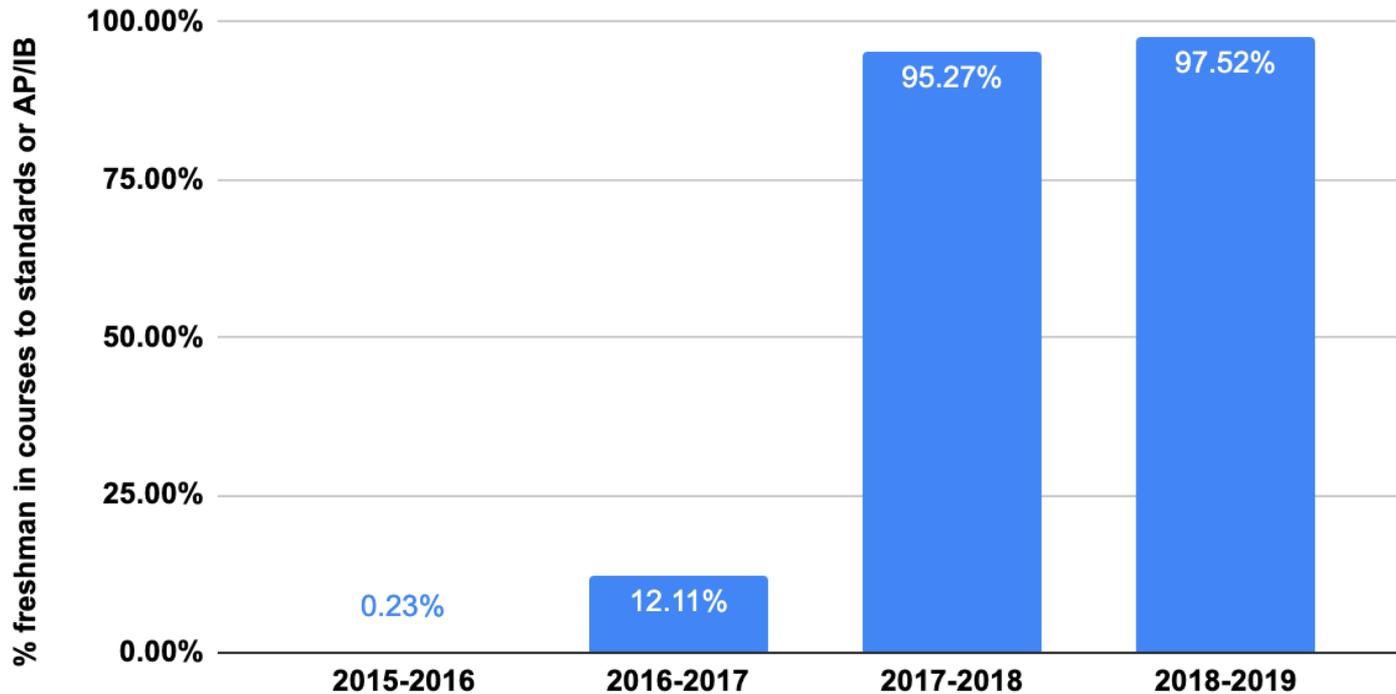
The Sequence

PMSP Actions:

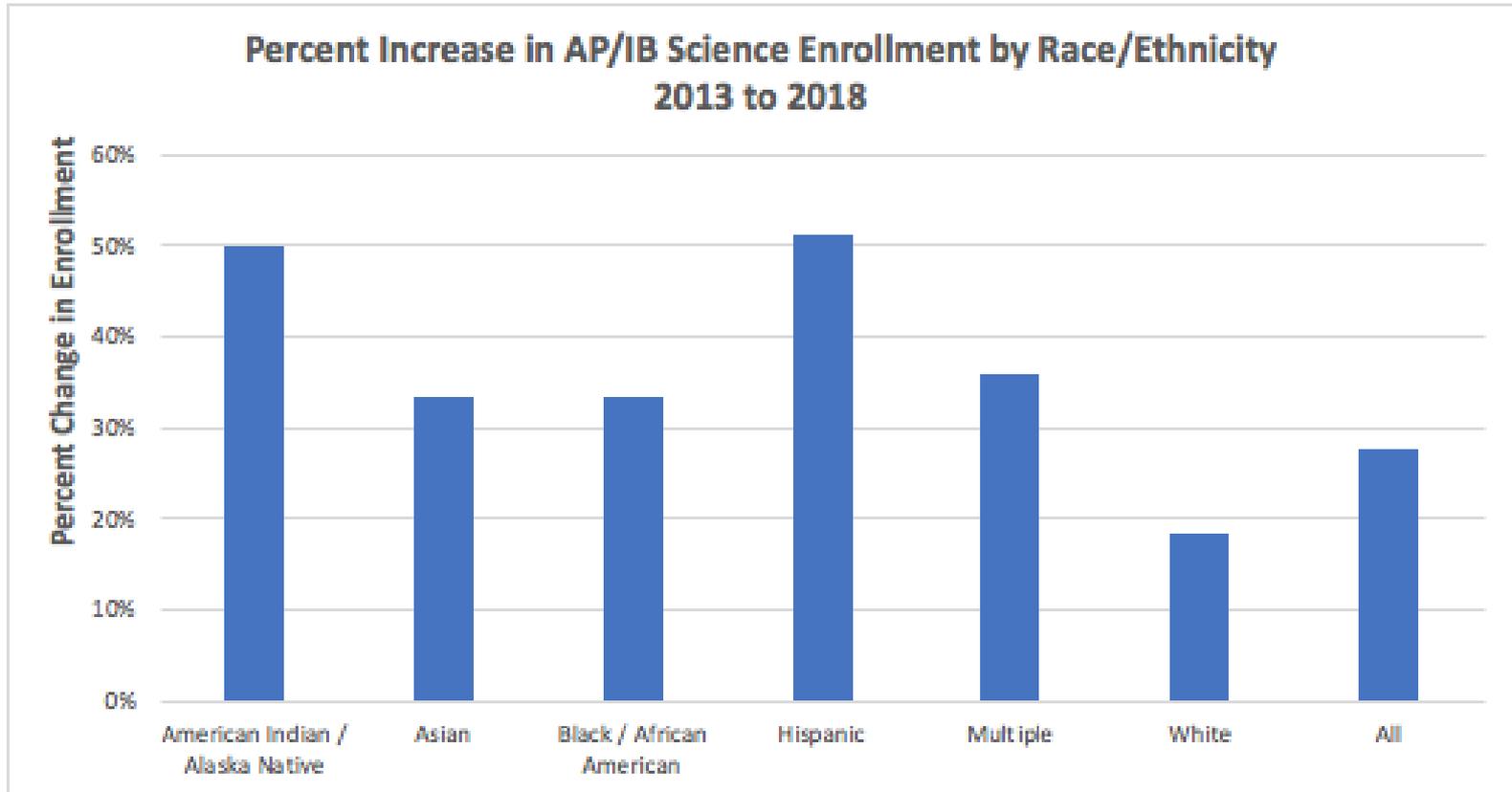
- **Connected partner districts to co-develop** the courses
- Supports **continuous improvement of the curriculum** and teacher leader development
- Provides **ongoing summer professional development**, onboarding new districts and schools and providing ongoing training for new teachers and new hires.
- Embeds **career connected learning** opportunities:
 - Teacher externships
 - Career connections in the curriculum
 - Articulation with CTE pathways
 - Community classroom volunteers

Portland Outcomes

% Freshman Enrolled in Science Courses to ODE/PPS Science Standards or AP/IB Enrollment

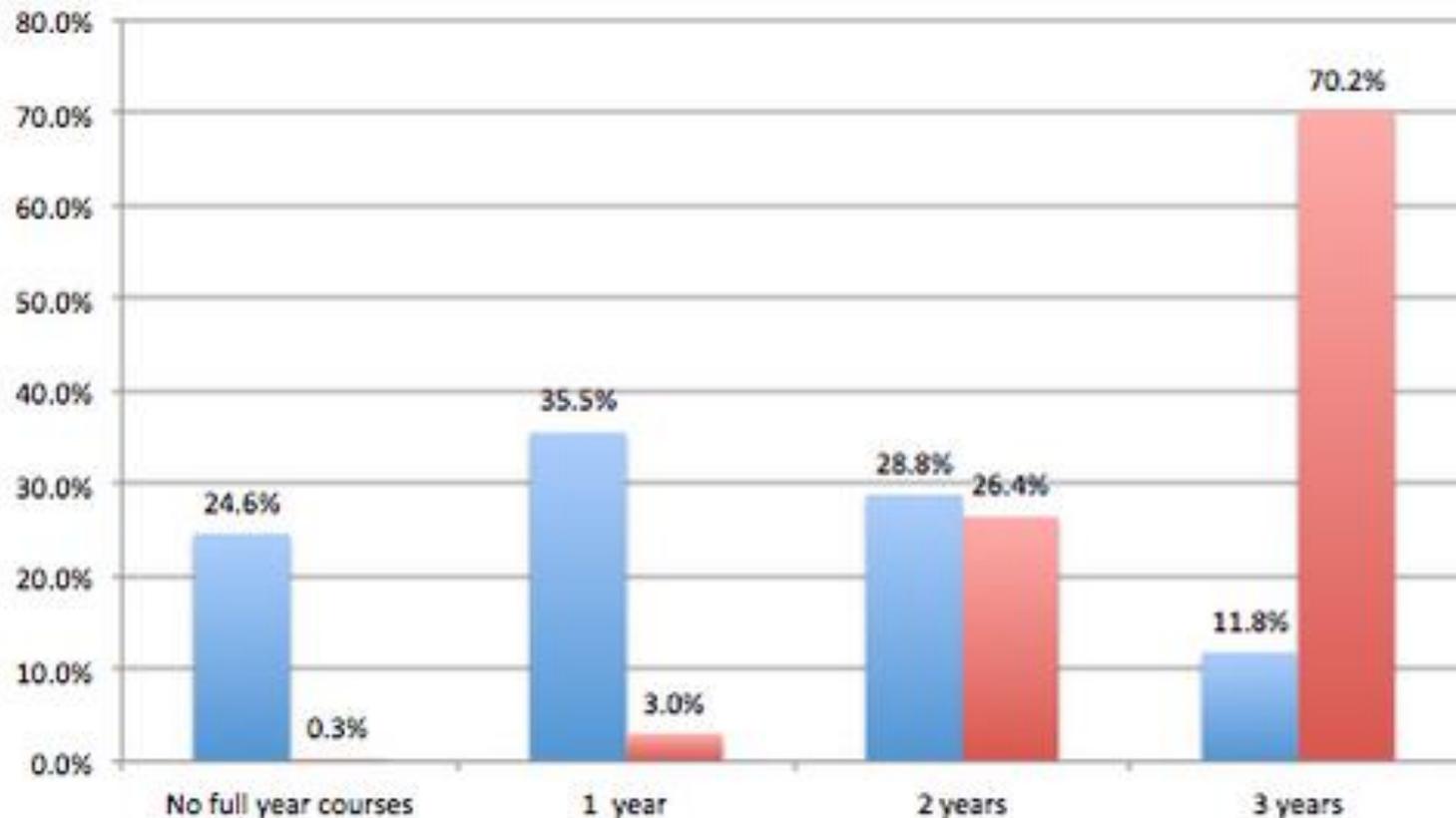


Beaverton Outcomes



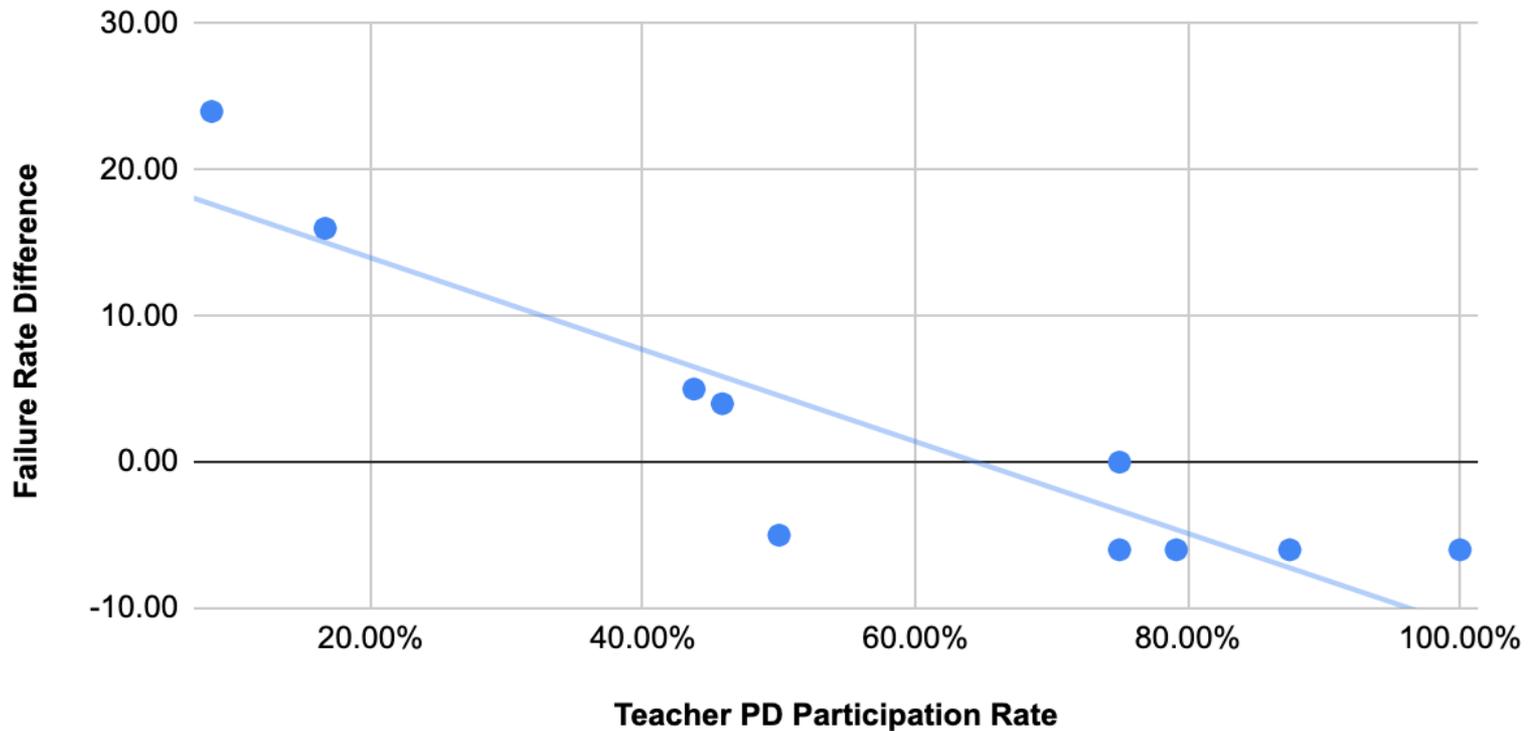
Beaverton Outcomes

2010 vs 2016: BSD graduates taking 1, 2, or 3 full year science courses (Physics, Chemistry, and/or Biology)



Portland Outcomes

School Failure Rate Difference for NGSS Physics from District Ave. vs. Teacher Participation Rate in Physics PD



STEM JOBS

TEXTING & DRIVING
ENERGY & ENGINEERING

PORTLAND METRO
STEM PARTNERSHIP

STEM jobs are often thought of as high-tech or hard science careers, but not all positions in science, technology, engineering, and math will have you wearing a lab coat or sitting at a desk. In fact, there are jobs as surprisingly diverse as dance that you might think the only thing they have in common is their strong employment outlook!

CONSTRUCTION	Average Salary
Carpenter	\$73,200
Electrician	\$57,427
Ironworker	\$66,194
Operating Engineer	\$65,342
Plumber/Mechanical Tech	\$55,944
Production/Construction Worker	\$35,961

TECHNOLOGY	Average Salary
Computer Consultant/Specialist	\$74,530
Computer Programmer	\$62,564
Customer Support/Analyst	\$40,204
Database Administrator	\$65,342
Web Developers	\$66,753
Systems Analyst	\$62,044

MANUFACTURING	Average Salary
Careers	
Mechanical Engineer	\$88,556
Machinery Mechanic	\$62,098
Machine Tool Operator	\$42,330
Process Control Technician	\$43,737
Engineering Technician	\$53,871
Civil Engineering Technician	\$41,028

GENERAL	Average Salary
Careers	
Automotive Mechanic	\$41,440
Engineering Technician	\$62,564
Logistics	\$33,871
Tractor/Tractor Operator	\$31,466
Truck/Trailer Driver	\$37,261
Emergency Medical Technicians	\$45,873

Turn over to explore educational pathways at your school that can prepare you for these jobs.



Career Pathways and Jobs Handouts



Teacher Externships with Industry

Industry Connection Videos



Industry Visits to Classrooms



Visit a local high school!

Interested in participating? Let us know!!

PMSP Scope for this Biennium

STEM Innovation Grant	Amount	Partner Hubs
Lead Hub - STEM School Planning	\$900,000	Central Oregon STEM, East Metro STEAM, NW STEM, South Metro-Salem STEM, and Umpqua Valley STEM
Lead Hub - Math Capacity	\$260,694	East Metro STEAM
Lead Hub - High School Science for All	\$351,183	All Hubs
Lead Hub - Math in Real Life	\$72,518	
Supporting Hub - STEM In Early Learning	\$82,996	Lead Hub - Umpqua Valley
Supporting Hub - Design Thinking	\$55,377	Lead Hub - South Metro-Salem STEM
Supporting Hub - NGSS Leadership	\$34,257	Lead Hub - East Metro STEAM

Questions?

Legislative Concept Development Schedule – 2021 Session

Prior to April 17, 2020	<ul style="list-style-type: none">• Develop concept in conjunction with state and local agencies and others that could be affected by the statute or program change.• Submit concept, detailed explanation, and draft language to DAS.
April 17, 2020 (or April 13, 2020)	LAST DAY to submit concepts to DAS. Agencies with 10 or more concept requests must submit by April 13, 2020.
April 17, 2020 to May 29, 2020	<ul style="list-style-type: none">• CFO analysts and other key staff review concepts for policy and fiscal issues and contact agencies when questions arise.• Governor’s Policy Advisors review requests and recommend whether or not to approve or deny concept to move forward for drafting.• DAS notifies agency of final action.• DAS sends approved concepts to Legislative Counsel for drafting.
May 29, 2020	LAST DAY for DAS to submit approved concepts to Legislative Counsel for drafting.
June 5, 2020 (or June 3, 2020)	LAST DAY to submit additional placeholder information to DAS. Agencies with 5 or more placeholders must submit by June 3, 2020.
June 5, 2020 to July 10, 2020	<ul style="list-style-type: none">• CFO analysts and other key staff review additional information for policy and fiscal issues and contact agency when questions arise.• Governor’s Policy Advisors review additional information and recommend whether or not to move forward.• DAS notifies agency of final action.• DAS sends approved placeholder information to Legislative Counsel.
July 10, 2020	LAST DAY for DAS to submit approved placeholder information to Legislative Counsel for drafting.
July 10, 2020 to October 30, 2020	Legislative Counsel continues to work on bill drafts – consulting with agencies as necessary. Counsel will allow ONLY ONE REVISION after the first draft.
September 30, 2020 <u>OR</u> 14 calendar days from the date on the bill draft, whichever is sooner	LAST DAY to request revisions to first draft of legislative concepts. One revision opportunity per concept.
October 30, 2020	Legislative Counsel stops ALL drafting on agency concepts.
As Final (no later than November 13, 2020)	Final concepts, fiscal impact estimates and “one-page” bill summaries due to DAS for final review and approval by the Governor’s Office and DAS.
December 4, 2020	LAST DAY to pre-session file bills for 2021 Legislative Session. With approval from Governor, DAS pre-session files agency concepts.

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2020-2021 DRAFT WORK PLAN

Standing Agenda Items

- Public comment
- Adoption of prior meeting's minutes
- STEM Hub update (1-2 hubs/meeting)
- ODE update
- Director's update

Q1 2020 (January)

- New member orientation
- Legislative/policy discussion
 - Timeline
 - Begin recommendations conversation
- Biennium planning

Q2 2020 (April)

- Finalize policy recommendations
- STEM Education Plan – 1st Work Session
 - Director to bring survey results
- STEM Data Dashboard Discussion 1

Q3 2020 (August)

- STEM Education Plan – 2nd Work Session
- STEM Data Dashboard Discussion 2

Q4 2020 (December)

- Review/approve annual report
- Finalize STEM Education Plan
- Finalize STEM Dashboard

Q1 2021 (January)

- 2020 review
- Receive report-outs on STEM Innovation Grants

Q2 2021 (April)

- 2021-23 Innovation Grants – categories and continued funding

Q3 2021 (July/August)

- Innovation Grant pitch session

Q4 2021 (November/December)

- Review and approve annual report