Patterns High School Science Course Guide January-June 2025

Please consider sharing these opportunities with your teachers/networks.

The Portland Metro STEM Partnership (PMSP) and Greater Oregon STEM Hub (GO STEM) will be holding numerous professional learning opportunities for the **High School Science for All,** aka "Patterns" courses (Physics, Chemistry, Biology). Thanks to the WRAP (Well-Rounded Access Program) grant, **we are able to pay each Oregon high school science teacher participant $50/hour to attend any online webinar or online PD session, up to a maximum of $400 per quarter (Quarter 1 = January - March; Quarter 2 = April - June).**

There is no cost to register for any of these courses. Participants must be registered for the course through WIld Apricot in order to be paid through Payment Works. Payment will occur 3 times this school year. If you need help getting started in Payment Works, here is a video to help you. Payment Works Process Video. PDU Certificates will be emailed the week following your attendance in the course.

There are 4 different types of professional learning experiences for you to choose from:

- **Webinars:** Webinars are virtual unit overviews that cover the scope and sequence of the unit, show participants where key resources can be found, and cover key activities and assessments. While there is some time allotted for questions, the webinars are primarily a presentation of the key concepts and materials. Webinars are generally 1.5 - 2 hours long.
- **Workshops:** Workshops provide a more in-depth experience with key activities. They are centered around participants completing hands-on activities (as a student) and reflecting on them (as a teacher). These can be virtual, hybrid, or in-person depending on the workshop. Workshops can range in time from 2 hours to 5 days, depending on the workshop.
- **PLC's**: The virtual PLCS are composed of smaller cohort groups. Instructors will provide support and guidance to help participants improve their instructional practice. Participants will share their experiences with other members of the PLC in guided reflections. Opportunities to focus on a problem of practice and to reflect and analyze student outcomes that occur as a result of the teachers changing practice will occur. PLCs meet multiple times (usually once a month) for 1.5 hours.
- **Focus Groups:** Focus groups are an opportunity for you to tell us about your experience in teaching Patterns and provide feedback to us, so we can improve the curriculum and make it better. Content will not be provided by the facilitators, who will ask a series of questions that you will respond to, both in writing and in through a moderated discussion. It is active and you will get to hear what other teachers who teach the same course are experiencing. Focus groups meet once for 1.5 hours. An opportunity to continue work through an advisory committee is presented at the end of the focus group meeting.

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PORTLAND METRO STEM PARTNERSHIP

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GO·STEM
Greater Oregon Science Technology Engineering & Math

Sessions for Physics, Chemistry, and Biology Teachers

- **Rural Teacher PLC** - In this PLC, you will work together with other rural teachers to support each other in the implementation of Patterns in your classroom. There will be opportunities to share your ideas, practices, and modifications with each other and to learn from the collective experience of other teachers who have the unique opportunity to teach in small rural schools. We will use a problem of practice protocol to share struggles and to ask and receive support from like-minded teachers. This will be an active experience where teachers can build relationships with other teachers. You will be expected to share your experiences and to respond and provide feedback to others.
    - Dates: February 13th, March 13th, April 10th, May 8th, 2024
    - Time: 4:00 - 5:00 PM
    - Registration Link:
    - Facilitators: Casey Boothby

- **Workshop (Virtual): Desmos Basics and a Few Advanced Highlights** - In this workshop participants will code Desmos themselves to recreate the base Desmos template that we use in the Patterns Sequence. Participants will also practice modifying graphs and adding visuals to graphs to enhance student discourse about data and graphs.
    - Date: May 14th, 2024
    - Time: 4:00 - 6:00 PM
    - Registration Link: https://pmsp.wildapricot.org/event-5515536
    - Facilitator: Bradford Hill

- **Workshop (Virtual): Using Desmos Classroom (Teacher Desmos) to Enhance Student Learning and Assessment** - In this workshop participants will create a Desmos Classroom Activity for an upcoming lab or quiz so they can monitor in real time student progress with using Desmos to graph data and find the best-fit. Then we will add a card sort (with answer key that autogrades student responses). With

the remaining time we will customize the activity with other built in question types into the activity. Session 1 and Session 2 are identical workshops.
    - Date: May 29th, 2024
    - Time: 4:00 - 5:30 PM
    - Registration Link: https://pmsp.wildapricot.org/event-5515542
    - Facilitator: Bradford Hill

- **PLC - Student Talk in the NGSS Classroom** - In this PLC, you will work together with other teachers to implement talk protocols in your classroom and share your experience back to the group. There will be opportunities to troubleshoot and practice with other teachers. It would be best, if you are new to implementing student talk in your classroom, that you take the 2 part webinar before participating in the PLC. You can still sign up for the PLC, even if you did not attend the PLC #1 on November 15.
    - Dates: Nov 15, Jan 10, Feb 7, April 10, and May 8
    - Time: 4:00 - 5:30 PM
    - Registration Link: https://pmsp.wildapricot.org/event-5348657
    - Link to Powerpoints
        - Nov 15 Powerpoint
        - Jan 10 Powerpoint
        - Feb 7 Powerpoint
        - April 10 Powerpoint
        - May 8 Powerpoint
    - Facilitators: Susan Holveck & Bradford Hill

- **PLC - Equitable Grading** - This is for teachers who want to either begin or deepen their equitable grading practices. This is an all year PLC. It is meant to provide the opportunity for learning and implementation for the topics that will be discussed in the PLC. Each topic will have 2 sessions, so teachers will have the opportunity to dive deeply.
    - Topics
        - Topic 1 (Sept 27, Oct 26) - The purpose of grades
        - Topic 2 (Nov 16, Dec 14) - Rubrics for feedback & communication
        - Topic 3 (Jan 24, Feb 29) - Motivating students
        - Topic 4 (March 21, April 17) - Multiple opportunities
        - Topic 5 (May 15) - Shifting the grading paradigm
            - **JUNE 5 Canceled**
    - What to expect
        - ~45 minutes of theory, practices, and ideas
        - ~30 minutes of group work on problems of practice around the topic
        - ~15 minute report out so everyone gains ideas

- Dates: See above
- Time: 4:30 - 6:00 PM
- Registration Link: https://pmsp.wildapricot.org/event-5348679
- Facilitators: Andrea Leech & Kristi Miller
- **Topic 1 - The Purpose of Grades**
  - Equitable Grading PLC Recording for September 27, 2023
    - Powerpoint for September 27 Session: Purpose of Grades Part 1
  - Equitable Grading PLC Recording for October 26, 2023
    - Powerpoint for October 26, 2023 Session: Purpose of Grading Part 2
- **Topic 2 - Rubrics for Feedback & Communication**
  - Equitable Grading PLC recording for November 16, 2023
    - Powerpoint for November 16, 2023 Session: Rubrics for feedback & Communication Part 1
  - Equitable Grading PLC recording for December 14, 2023
    - Powerpoint for December 14, 2023 Session: Rubrics for feedback & Communication Part 2
- **Topic 3 - Motivating Students**
  - Equitable Grading PLC recording for January 24, 2024
    - Powerpoint for January 24, 2024 Session: Motivating Students Part 1
  - Equitable Grading PLC recording for February 29, 2024
    - Powerpoint for Feb 29, 2024 Session: Motivating Students Part 2
- **Topic 4- Multiple Opportunities**
  - Equitable Grading PLC recording for March 21, 2024
    - Powerpoint for March 21, 2024 Session: Multiple Opportunities Part 1
  - Equitable Grading PLC recording for April 17, 2024
    - Powerpoint for April 17, 2024 Session: Multiple Opportunities Part 2
- **Topic 5 - Shifting the Grading Paradigm**
  - Equitable Grading PLC recording for May 15, 2024
    - Power Point

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PORTLAND METRO STEM PARTNERSHIP

GO·STEM Greater Oregon Science Technology Engineering & Math

Sessions for Patterns Physics

- **Webinar - Unit 5: Waves and Technology -** This webinar session will give you an overview of Patterns Physics Unit 5. The phenomenon that launches this unit is a cell phone call to a student in the class, where the caller on speaker phone asks “How are you hearing me?”. Over the course of the unit, students discover the patterns with waves. Then use that understanding to explain ultrasound medical imaging technology and ultimately how cell phones work. Cell phone communication is operationalized by the engineering challenge of communicating a three letter signal by first coding a spreadsheet to digitize the signal in binary (ASCII), then transmit the digital signal using light and sound (AM and FM), then receive and decode the signal to complete the communication. This project models the sending and receiving of a text message. The webinar is designed to go over all key parts of the unit, lesson by lesson, so you will have a better understanding of the scope and sequence for the unit. It is designed to go over all key parts of the unit. Participants need to attend this session if they plan on attending the Part 2 Workshop on February 1, 2024
  - Date: January 22, 2024
  - Time: 4:00 - 6:00 PM
  - Registration Link: https://pmsp.wildapricot.org/event-5516015
  - YouTube video for this webinar
  - Agenda for this webinar
  - Facilitators: Bradford Hill & Matt McCollum

- **Workshop (Virtual) - Unit 5: Waves and Technology -** The Workshop is a deeper dive into key moments with equipment and teacher pedagogical practices. You will engage in Unit 5 activities both as a student and as a teacher reflecting on your experience. You will get more out of the workshop if you also attend the Unit 5 webinar on January 22.
  - Date: February 1, 2024
  - Time: 4:00 - 6:00 PM
  - Registration Link: https://pmsp.wildapricot.org/event-5516023
  - Agenda for this workshop
  - There are no video recordings of workshops.
  - Facilitators: Matt McCollum & Dave Savage

- **New Course! Units 4-6 In Person Workshop:** This in person workshop will cover essential elements of Units 4 (Engineer a Shoe), Unit 5 Waves and Technology), and Unit 6 (Electricity and Power Production**)**. Spend 2 full days with your colleagues in a hands-on workshop getting to learn and experience key

components of Patterns Physics Units 4-6. Similar to the summer workshop, participants will engage in activities as students and reflect as teachers. Attending teachers will be expected to have some experience teaching Units 1-3 so they can jump right into the content of these units.

These workshops remain free and open to all teachers, however, they do not have the paid participation to attend. To expand access to rural Oregon teachers there is a travel stipend (up to $500 for those traveling up to 300 miles and up to $1000 for those traveling over 300 miles). Rural Oregon teachers need to complete this Patterns Workshop Stipend Application when you register for the workshop. There will be two locations for this workshop:

- Bend, Oregon Holiday Inn Express & Suites Bend South, (61070 S Hwy 97, Bend, OR 97702)
  - Date: January 26-27
  - Time: 8:30 am - 3:30 pm
  - Registration Link: https://pmsp.wildapricot.org/event-5527018
  - Facilitator: Bradford Hill
- Newport, Oregon
  - Date: February 9-10, 2024
  - Hatfield Marine Science Center (2030 SE Marine Science Drive Newport, OR 97365)
  - Time: 8:30 am - 3:30 pm
  - Registration Link: https://pmsp.wildapricot.org/event-5527043
  - Facilitator: Bradford Hill

- **Webinar & Workshop Part 1 (Virtual) - Unit 6: Electricity, Power Production, & Climate Science** - This webinar session will give you an overview of Patterns Physics Unit 6. This unit is loaded with phenomena. The real world task of being a member of Oregon's Energy Commission that must create a 50-Year Energy Plan propels students through a learning arc that includes electricity, magnetism, power production, and climate science. After the Request for a 50-Year Energy Plan students jigsaw energy sources and power production. They need to understand the basic physics of how generators works leads us to build and explore motors (starting with speakers which also connect to the Waves & Technology unit) and inefficient generators (electric guitars). The need for large amounts of energy and efficient generators motivates us to engineer wind turbines and optimize solar cells for a local facilities use. Creating the rubric to evaluate large scale power production launches us into climate science. With all the learning of the unit students and many real world constraints students finally complete, compare, and evaluate their 50-Year Energy Plan. It is designed to go

over all key parts of the unit. Participants need to attend this session if they plan on attending the Part 2 Workshop on March 4, 2024

- Date: February 22, 2024
- Time: 4:00 - 6:00 PM
- Registration Link: https://pmsp.wildapricot.org/event-5516085
- Agenda for this webinar
- Youtube Link to webinar
- Facilitators: Bradford Hill & Matt McCollum

- **Workshop Part 2 (Virtual) - Unit 6: Electricity, Power Production, & Climate Science.** The Part 2 Workshop is a deeper dive into key moments with equipment and teacher pedagogical practices. You will get more out of the workshop if you are able to attend the Part 1 workshop on February 22, 2024
  - Date: March 4, 2024
  - Time: 4:00 - 6:00 PM
  - Registration Link: https://pmsp.wildapricot.org/event-5516096
  - Agenda for this webinar
  - There are no video recordings of workshops.
  - Facilitators: Bradford Hill & Kathrine Kraft

- **Webinar & Part 1 Workshop (Virtual) - Unit 7: Space and the Universe** - This webinar session will give you an overview of Patterns Physics Unit 7. Using the hook of Halley's comet, dark matter, and dark energy students data mine Newton's Law of Universal Gravity and construct and evaluate arguments for the Big Bang. The webinar is designed to go over all key parts of the unit. Participants need to attend this session if they plan on attending the Part 2 Workshop on April 24, 2024
  - Date: April 11, 2024
  - Time: 4:00 - 6:00 PM
  - Registration Link: https://pmsp.wildapricot.org/event-5516110
  - Agenda for this Webinar
  - Youtube Link to Webinar
  - Facilitators: Bradford Hill & Matt McCollum

- **Canceled - Workshop Part 2 (Virtual) - Unit 7: Space and the Universe** - The Part 2 Workshop is a deeper dive into key moments with equipment and teacher pedagogical practices. You will get more out of the workshop if you are able to attend the Part 1 workshop on April 11, 2024
  - Date: April 24, 2024
  - Time: 4:00 - 6:00 PM
  - Registration Link: N/A

- Facilitators: Bradford Hill & Matt McCollum

- **Focus Group - What are the Opportunities for Arts Integration in the Patterns Physics Curriculum?** How can the Patterns Physics curriculum provide opportunities for Arts Integration as a way to engage students in their learning? We would like to hear from you, your recommendations and ideas, on how we can make this course a STEAM course that addresses the different learning styles that students have. There will be additional opportunities for teachers who would like to continue to work on an Arts Integration Advisory Group beyond this webinar. This is an introductory listening session.
  - Date: February 28th, 2024
  - Time: 4:00 - 5:30 PM
  - Registration Link: https://pmsp.wildapricot.org/event-5516376
  - Link to Powerpoint
  - Facilitators: Susan Holveck & Bradford Hill

Sessions for Patterns Chemistry

- **Webinar: Unit 5 - Chemical Reactions** - This webinar session will give you an overview of Patterns Chemistry Unit 5 Chemical Reactions - Predict the products of simple chemical reactions, balance equations, construct explanations for observed reaction outcomes, and provide evidence for the conservation of mass. **Anchoring Phenomenon:** There is a large variety of natural and manmade sources of pollution, these pollutants have far reaching impacts on our health, the quality of our air and water, as well as the stability of our climate. **Unit Essential Question:** How are pollutants produced and what are their chemical consequences for our air, water, and climate? This webinar is designed to go over all key parts of the unit, lesson by lesson, so you will have a better understanding of the scope and sequence for the unit.
  - Date: January 29, 2024
  - Time: 4:00 - 6:00 pm.
  - Event Link for Wild Apricot: https://pmsp.wildapricot.org/event-5534443
  - Youtube VIdeo for this webinar
  - Presentation for this webinar
  - Facilitators: Jomae Sica and Matt Randall

- **Webinar - Unit 6: Stoichiometry** - This webinar session will give you an overview of Chemistry Unit 6 Stoichiometry - Use mathematics and computational thinking to show that atoms and mass are conserved during chemical reactions. **Anchoring Phenomenon:** Stoichiometry is used for

chemical reactions and processes across many different industries (vehicle manufacturing and use, agriculture, rocketry, healthcare, culinary, etc.) in order to maximize products and minimize the waste of excess reactants. **Unit Essential Question:** How can we calculate the exact amounts of reactants and products needed in a chemical reaction? This webinar is designed to go over all key parts of the unit, lesson by lesson, so you will have a better understanding of the scope and sequence for the unit.

- Date: March 6, 2024
- TIme: 4:00 - 6:00 PM
- Registration Link: https://pmsp.wildapricot.org/event-5531333
- Youtube for this Webinar
- Presentation for this Webinar
- Facilitator: Kristi Miller and Matt Randall

- **Webinar - Unit 7: Thermochemistry** -This webinar session will give you an overview of Patterns Chemistry Unit 7 Thermochemistry - Develop and use models to explain how energy is transferred between systems and surroundings in physical and chemical thermodynamic processes. **Anchoring Phenomenon:** Certain substances on Earth have the capability of producing large amounts of energy, so we use them as fuels, but every type of fuel has pros and cons. **Unit Essential Question:** How do our fuel choices impact the temperature of the environment and how can we have an immediate impact on correcting that? This Webinar is designed to go over all key parts of the unit, lesson by lesson, so you will have a better understanding of the scope and sequence for the unit.
  - Date: May 1, 2024
  - Time: 4:00 - 6:00 PM
  - Registration Link: https://pmsp.wildapricot.org/event-5531345
  - YouTube for this Webinar
  - Presentation for this webinar
  - Facilitators: Kristi Miller and Matt Randall
- **New Course! Units 5-6 In Person Workshop:** This in person workshop will cover essential elements of Unit 5 (Chemical Reactions) and Unit 6 (Stoichiometry). Spend 2 full days with your colleagues in a hands-on workshop getting to learn and experience key components of Patterns Chemistry, Units 5-6. Similar to the summer workshop, participants will engage in activities as students and reflect as teachers. Attending teachers will be expected to have some experience teaching Units 1-4 so they can jump right into the content of these units.

  These workshops remain free and open to all teachers, however, they do not have the paid participation to attend. To expand access to rural Oregon teachers

there is a travel stipend (up to $500 for those traveling up to 300 miles and up to $1000 for those traveling over 300 miles). Rural Oregon teachers need to complete this Patterns Workshop Stipend Application when you register for the workshop. There will be two locations for this workshop:

- Bend, Oregon Canceled
  - Date: January TBD
  - TBD
  - Time: 8:30 am - 3:30 pm
  - Registration Link:
  - Facilitator: Kristi Miller
- Newport, Oregon Canceled
  - Date: N/A
  - Hatfield Marine Science Center (2030 SE Marine Science Drive Newport, OR 97365)
  - Time: 8:30 am - 3:30 pm
  - Registration Link: closed
  - Facilitator: Kristi Miller

- **Focus Group - What are the opportunities for Arts Integration in the Patterns Chemistry Curriculum?** How can the Patterns Chemistry curriculum provide opportunities for Arts Integration as a way to engage students in their learning? We would like to hear from you, your recommendations and ideas, on how we can make this course a STEAM course that addresses the different learning styles that students have. There will be additional opportunities for teachers who would like to continue to work on an Arts Integration Advisory Group beyond this webinar. This is an introductory listening session.
  - Date: February 20, 2024
  - Time: 4:00 - 5:30 PM
  - Registration Link: https://pmsp.wildapricot.org/event-5540631
  - Link to Powerpoint
  - Facilitators: Susan Holveck & Kristi Miller

Sessions for Patterns Biology

- **Webinar - Unit 4: Genomics -** This webinar session will give you an overview of Biology Unit 4 - Explain how genes and the environment interact to determine traits in populations. **Anchoring Phenomenon:** There are disparities in who acquires, gets diagnosed with, receives treatment for, and survives diabetes and cancer.**Unit Essential Question:** Why are some people diagnosed with diseases while others are not? This webinar is designed to go over all key parts of the unit,

lesson by lesson, so you will have a better understanding of the scope and sequence for the unit.

- Date: January 8, 2024
- Time 4:00 - 6:00 PM
- Registration Link: https://pmsp.wildapricot.org/event-5379387
- YouTube Video Recording for this Webinar
- Powerpoint for this Webinar
- Facilitators: Charlotte Denis & Jason Baca

- **Webinar: Unit 5: Evolution** - This webinar session will give you an overview of Patterns Biology Unit 5 - Describe how all life is related and populations change over time. **Anchoring Phenomenon:** Humans have a wide variety of skin colors. **Unit Essential Question**: How does the environment drive the characteristics needed for fitness? How does the theory of evolution explain both the unity and diversity of life on earth? This webinar is designed to go over all key parts of the unit, lesson by lesson, so you will have a better understanding of the scope and sequence for the unit.
  - Date: March 13th, 2024
  - TIme: 4:00 - 6:00 pm.
  - Event Link for Wild Apricot: https://pmsp.wildapricot.org/event-5542140
  - Youtube Link to this Webinar
  - Powerpoint for this webinar
  - Facilitators: Scott Davis and Jason Baca

- **Webinar: Unit 6: Matter, Energy, & Climate Change -** This webinar session will give you an overview of Patterns Biology Unit 6. **Anchoring Design Problem:** Climate change has and will continue to alter Earth's ecosystems, including the forests of the Pacific Northwest. **Unit Essential Question:** How does the changing climate impact Earth's ecosystems and the cycling of carbon? This webinar is designed to go over all key parts of the unit, lesson by lesson, so you will have a better understanding of the scope and sequence for the unit.
  - Date: April 22, 2024
  - Time: 4:00 - 6:00 pm.
  - Event Link for Wild Apricot: https://pmsp.wildapricot.org/event-5542144
  - Powerpoint for this Webinar
  - YouTube Link for this Webinar
  - Facilitators: Charlotte Denis & Jason Baca

- **Focus Group - What are the opportunities for Arts Integration in the Patterns Biology Curriculum?** How can the Patterns Biology curriculum provide opportunities for Arts Integration as a way to engage students in their

	learning? We would like to hear from you, your recommendations and ideas, on how we can make this course a STEAM course that addresses the different learning styles that students have. There will be additional opportunities for teachers who would like to continue to work on an Arts Integration Advisory Group beyond this webinar. This is an introductory listening session. ○ Date: February 26, 2024 ○ Time: 4:00 - 5:30 PM ○ Registration Link: https://pmsp.wildapricot.org/event-5542161 ○ Link to Powerpoint ○ There is no video recording for this session ○ Facilitator: Susan Holveck

SAVE THE DATE - Summer 5 day Workshops - Save the date for our 5-day summer workshops. These hands-on sessions really allow teachers to dive into the Patterns curriculum and experience it as both a student and as a teacher. New this year, for the first time, we are adding in-person workshops for Semester 2 Units. Registration information will be coming soon.

Please complete our **pre registration form** for the workshop(s) you plan to attend, so that you can be notified when registration begins. PMSP will use pre registration numbers to determine if there will be enough participants to hold each workshop. PMSP reserves the right to cancel a workshop if pre registration attendance numbers do not meet the minimum requirement to hold the workshop. **There will be no payment due now**

Physics

- **Physics Units 1-3** In-Person Workshop - July 29 - August 2, 2024 - Sunset High School, 13840 NW Cornell Rd, Portland, OR 97229
- **Physics Units 4-7** In-Person Workshop - August 12-15, 2024 - Sunset High School, 13840 NW Cornell Rd, Portland, OR 97229

Chemistry

- **Chemistry Units 1-3** In-Person Workshop - July 29 - August 2, 2024 -Sunset High School, 13840 NW Cornell Rd, Portland, OR 97229
- **Chemistry Units 4-6** In-Person Workshop - August 5-9, 2024 - Sunset High School, 13840 NW Cornell Rd, Portland, OR 97229

Biology

- **Biology Units 1-3** In-Person Workshop - July 29 - August 2, 2024 - Century High School 2000 SE Century Blvd, Hillsboro, OR 97123
- **Biology Units 4-6** In-Person Workshop - August 5-9, 2024 Location - Century High School 2000 SE Century Blvd, Hillsboro, OR 97123

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For more information, please contact:

- Susan Holveck (PMSP) at susan.holveck@pdxstem.org
- Kristen Harrison (PMSP) at kristen.harrison@pdxstem.org.
- David Strayer (PMSP) at david.strayer@pdxstem.org
- David Melville (GOSTEM) at dmelville@eou.edu
- Stefanie Holloway (GOSTEM) at sholloway@eou.edu
- Casey Boothby (GOSTEM) at boothbc@eou.edu

Look for courses and updates on the PMSP Website as well!

Link to Fall 2022 Flyer
Link to Winter 2023 Flyer
Link to Spring - Summer 2023 Flyer
Link to Summer 2023 Flyer
Link to Fall/WInter 2023-24 Course Guide

About WRAP (Well-Rounded Access Program)

In 2020, Oregon received a five-year, $9.8 million US Department of Education grant to expand access to well-rounded education courses with a focus on STEAM (Science, Technology, Engineering, Arts, and Math), specifically emphasizing the integration of arts into STEAM. Through this opportunity, in addition to several other courses, ODE has contracted some of these funds to the expansion and modification of High School Science for All. The High School Science for All program was designed to increase student access to science courses by providing an openly licensed, vertically articulated curriculum that has potential to align district pathways for students' science course taking. It is currently being used by several school districts throughout Oregon.

The Oregon Department of Education has contracted with Portland State University and Eastern Oregon University to improve the curriculum and and online availability of the curriculum and expand professional development and use of the curriculum, targeting modifications to the relevance and useability for rural areas of the state.

The scope of this project focuses primarily on strengthening the curriculum and course content so that it aligns more closely with the design principles identified in the project; includes greater clarity and organization structured around the key phenomena; includes culturally responsive techniques and strategy within the content, aligned with the accompanied professional development; reflects changes to support implementation

in rural areas of the state; incorporates greater elements of STEAM instruction, specifically arts-integration; and is designed to be implemented in an online setting.

Secondarily, this project focuses on expansion of professional development to increase use of this content across the state and a greater understanding/support of culturally responsive teaching practices.

To learn more about this course, please contact Beth Blumenstein and beth.blumenstein@ode.oregon.gov or 503-931-9174.