



OREGON
DEPARTMENT OF
EDUCATION



Organization

Backbone Organization: Northwest Regional ESD
Counties in Region: Clatsop, Columbia, Tillamook,
& Rural Washington
Sq. Miles in Region: 2,906
STEM Hub Director: Chris Hesselbein
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nwresd.org/departments/instructionalservices/STEM-Hub

By the Numbers

School Districts	15
Students	16,645
Educators Participating in PD	83
Educator Hours in PD	1,436
Students Participated in Programs	722
Hours of Programming Offered	295
Student Hours in STEM Programs	6,535

Northwest STEM Hub's Collective Impact

The Northwest STEM Hub, in partnership with the Career Connected Learning Navigator at Portland Community College, collaborated with CAST, a national nonprofit organization, to promote their complimentary National Science Foundation-funded Take Flight curriculum. Take Flight offers standards-aligned activities that develop employability skills through drone technology, incorporating evidence-based strategies to enhance engagement among female students while maintaining rigor for all learners. The curriculum includes video profiles of women in STEM careers who utilize drones professionally.

The Northwest STEM Hub contracted with CAST to deliver in-person professional development focused on integrating drones into classroom instruction. Each participating teacher received a classroom drone kit for immediate implementation. Industry partners demonstrated real-world applications of drone technology across various professional sectors.

Four additional STEM Hubs have initiated partnerships to replicate this professional development model in their regions. Moving forward, we anticipate continued collaboration, including the potential development of a statewide drone competition.

Science Accomplishments

Makerspace Professional Development (Engineering)

The Northwest STEM Hub developed an innovative makerspace professional development model emphasizing hands-on learning with industry-standard technologies, including 3D printing, vinyl cutting, and rapid prototyping. Two sessions, conducted in partnership with Portland Community College and Clatsop Community College, engaged 55 educators and delivered \$56,000 in materials and equipment to classrooms across 14 school districts. Additionally, the Makerspace Mini-Grant program awarded 14 educators grants of up to \$2,000 each for robotics materials, makerspace improvements, and collaborative CTE initiatives.

Place-Based Learning (Environmental Science)

The Northwest STEM Hub facilitated a year-long professional learning cohort for K-6 educators focused on place-based education methodologies incorporating Tribal History and Shared History frameworks. During 2024-25, 23 educators from eight school districts participated in monthly hybrid sessions. Each participant received a classroom kit for outdoor learning activities and contributed to a regional digital publication shared among participants. Community organizations served as hosts and content experts, establishing pathways for ongoing district partnerships.



Career Connected Learning

SWIM and MFG Day

Portland Community College's Oregon Manufacturing Innovation Center (PCC OMIC) has maintained a longstanding partnership with the Northwest STEM Hub. Their annual manufacturing career events connect regional industry partners with schools, providing students opportunities to explore careers in advanced technology fields. The Northwest STEM Hub contributes to event planning and execution while funding transportation to reduce access barriers.

Columbia Works Internship Programs

During summer sessions, PCC OMIC offers Columbia County students competitive manufacturing internship experiences across multiple sectors. Participants synthesize their learning into a culminating project and receive feedback from an industry expert panel. Program evaluations indicate strong satisfaction and increased interest in advanced manufacturing careers. The Northwest STEM Hub supports this initiative through barrier reduction funding and event coordination.

Family STEM Days

In collaboration with regional libraries in Scappoose, Clatskanie, and Seaside, the Northwest STEM Hub facilitated four Family STEM Day events featuring community partners. Facilitators led interactive stations in paleontology, structural engineering, robotics, and maritime industry applications, providing over 300 students from rural communities with hands-on, career-connected learning experiences.