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**Connecting to the World of Work
STEM, STEAM and CTE**

581-017-0301

Definitions

The following definitions apply to 581-017-0300 TO 581-017-~~0332~~[0333](#):

(1) “Achievement Gap” means the gap in achievement (state test scores in science and mathematics as well as postsecondary degree attainment in STEM) that often exists between students who are economically disadvantaged, students learning English as a second language, African American, Hispanic or Native American compared to their peers.

(2) “Authentic Problem-Based Learning” means using real world questions, problems, and tasks—often drawn from local community issues and industries—as the focus to drive the learning experiences, deepen understanding, and developing rich contextual connections across a variety of STEM and non-STEM disciplines.

(3) “Career and Technical Education (CTE)” is a comprehensive educational program for students based on industry needs. CTE includes coursework in areas such as health care, engineering, and computer science.

(4) “Community Engagement” means a broad collaboration and participation between multiple sectors of the community for the mutually beneficial exchange of knowledge and resources to identify local needs and contribute to larger conversations on visioning planning which may include, but not limited to parent groups and advocacy groups, industry and STEM agencies, economic and workforce groups, student input, and educators.

(5) [“Education service district” or “ESD” means an education service district as defined in ORS 334.003.](#)

(6) “Effective STEM Instruction” means the use of evidence-based practices that support interconnected, relevant STEM instruction as stated in definition number one.

(~~6~~7) “Effective STEM Leadership” means identifying schools, school districts, postsecondary institutions, business & industry, student-focused nonprofits and community leadership to support implementing and improving STEM teaching and learning in addition to creating a culture that fosters STEM learning with evidence-based resources. Effective STEM leadership develops an understanding of what effective and interconnected STEM education looks like in the classroom and supports the development of learning environments that empower educators to implement innovative STEM education approaches.

(78) “Effective STEM Learning Environments” means supporting student interaction with STEM education during formal and informal settings in ways that promote deeper understanding of real-world complex concepts. Such learning environments need to engage all students in solving complex problems, using highly interactive learning opportunities that create new opportunities for STEM learning across the core curriculum.

(89) “Equity Lens” refers to the commitment and principles adopted by the Oregon Education Investment Board to address inequities of access, opportunity, interest, and attainment for underserved and underrepresented populations in all current and future strategic investments.

(910) “Postsecondary Institution” means a:

(a) A community college operated under ORS Chapter 341.

(b) The following public universities within the Oregon University System:

(A) University of Oregon.

(B) Oregon State University.

(C) Portland State University.

(D) Oregon Institute of Technology.

(E) Western Oregon University.

(F) Southern Oregon University.

(G) Eastern Oregon University.

(c) Oregon Health and Science University.

(d) An Oregon-based, generally accredited, not-for-profit institution of higher education.

(1011) “Regional STEM Hub” means a commitment of a group of key stakeholders from different sectors such as, but not limited to school districts, informal education providers, postsecondary institutions, business & industry, student-focused nonprofits, students, families, community members and policy makers to advance state and local educational goals related to science, technology, engineering, mathematics and career & technical education (CTE).

(1112) “Statewide STEM Network” means a supportive collaboration between and across Regional STEM Hubs to share knowledge, expertise, insights, and leadership to assist other communities in their efforts to create similar STEM partnerships.

(~~1213~~) “STEM Education” means an approach to teaching and lifelong learning that emphasizes the natural interconnectedness of the four separate STEM disciplines. Developing and deepening content knowledge and skills in science and mathematics is the foundation of STEM teaching and learning. The natural connections among science, mathematics and STEM are made explicit through collaboration between educators resulting in real and appropriate context built into instruction, curriculum, and assessment. The common element of problem solving is emphasized across all STEM disciplines allowing students to discover, explore, and apply critical thinking skills as they learn.

(~~1314~~) “STEM Practitioners” refers to individuals engaged in STEM-related professions such as but not limited to, natural resources management, high-tech manufacturing and product development, information technology, industrial design, health sciences, software, scientific research, engineering, data analytics, etc.

(~~1415~~) “Student-Focused Nonprofits” means an organization that meets all of the following requirements:

(a) Is established as a nonprofit organization under the laws of Oregon;

(b) Qualifies as an exempt organization under section 501(c)(3) of the Internal Revenue Code as defined in ORS 314.011; and

(c) Is focused on providing services to students who’s goals or mission are focused on impacting and improving outcomes in STEM education.

(~~1516~~) “Underserved Students” are students whom systems have placed at risk because of their race, ethnicity, English language proficiency, socioeconomic status, gender, sexual orientation, differently abled, or geographic location.

(~~1716~~) “Underrepresented Students” in STEM are from demographic groups who’s representation in STEM fields and industries does not mirror regional and national focus populations specifically, women, African American, Native American, Hispanic and Pacific Islander students which systems have provided insufficient or inadequate balance of opportunity.

Stat. Auth.: [ORS 327.820; 2015 OL Ch. 763, Sec. 1 \(Enrolled HB 3072\)](#)~~2013 OL Ch. 661, Sec. 4 (Enrolled HB 3232)~~

Stat. Implemented: [ORS 327.820; 2015 OL Ch. 763, Sec. 1 \(Enrolled HB 3072\)](#)~~2013 OL Ch. 661, Sec. 4 (Enrolled HB 3232)~~

Hist.: ODE 30-2014, f. & cert. ef. 6-24-14

Oregon Regional STEM (Science, Technology, Engineering and Mathematics) Hub Grant

581-017-0306

Establishment of Regional STEM Hubs

(1) The Regional STEM Hub Grant is established as part of the Connecting to the World of Work Program.

(2) The purposes of these Regional STEM Hubs includes, but is not limited to:

(a) Engage school districts, post-secondary institutions, student-focused nonprofit organizations, business and industry around common outcomes related to increasing students' proficiency, interest, and attainment in science, technology, engineering and mathematics along with career and technical education.

(b) Align STEM program activities and leverage State and local resources, both financial and human, around common student outcomes to advance the State 40/40/20 goals.

(c) Address ongoing access, opportunity, interest, and attainment gaps for underserved and underrepresented students in STEM consistent with the Equity Lens.

(d) Engage local communities to elevate the importance of STEM to the prosperity of individuals, and the local and state economy.

(e) Promote effective instructional practices by providing professional learning opportunities and to support educators in ways that are consistent with the implementation of the Common Core State Standards and Oregon Science Standards.

(f) Provide age-appropriate career exploration opportunities in STEM for students along the education continuum including career guidance, tours, and internships.

(g) Expand effective STEM learning experiences for students both in and out of school.

(h) Share knowledge, expertise, insights, and leadership to assist other communities in their efforts to create similar STEM partnerships.

(i) Foster greater coherency across institutions to smooth student transitions and support services along education and career pathways.

(j) Diminish the sense of academic isolation and silos, both locally and statewide.

(k) Increase interactions of STEM practitioners with students and educators.

Stat. Auth.: [ORS 327.8202013 OL Ch. 661, Sec. 4 \(Enrolled HB 3232\)](#)

Stat. Implemented: [ORS 327.8202013 OL Ch. 661, Sec. 4 \(Enrolled HB 3232\)](#)

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581-017-0309

Eligibility of Regional STEM Hubs

The Oregon Department of Education shall allocate funds for Regional STEM Hubs based on the following criteria:

(1) The following entities shall be eligible ~~to be the fiscal agent~~ for the Regional STEM Hub Grant:

(a) Existing STEM Hubs;

~~(b) School districts;~~

(c) Education service districts;

~~(d) Student-focused nonprofit organizations;~~

(e) Postsecondary institutions for the purpose of supporting STEM & CTE education; and

(f) Any of the nine federally recognized Native American Tribes in Oregon.

(2) A Regional STEM Hub must be established by a school district, postsecondary institutions or student-focused nonprofit and is required to include the following additional partners at a minimum:

(a) A School District or ESD,

(b) A Postsecondary Education Partner,

(c) A Student-focused nonprofit; and

(d) An Industry, Business or STEM focused Community Partner.

(3) A Regional STEM Hub must be able to demonstrate that the Hub has the following five key elements:

(a) A common agenda;

(b) Shared measurement systems;

(c) Mutually reinforcing activities;

(d) Continuous communication; and

(e) Backbone support organizations.

Stat. Auth.: [ORS 327.820; 2015 OL Ch. 763, Sec. 1 \(Enrolled HB 3072\)](#) ~~2013 OL Ch. 661, Sec. 4 (Enrolled HB 3232)~~

Stat. Implemented: [ORS 327.820; 2015 OL Ch. 763, Sec. 1 \(Enrolled HB 3072\)](#) ~~2013 OL Ch. 661, Sec. 4 (Enrolled HB 3232)~~

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581-017-0312

Criteria of Regional STEM Hubs Awards

(1) The Oregon Department of Education shall establish a ~~request for proposal~~ solicitation and approval process to be conducted each biennium for which the Regional STEM Hub grant funds [for operations support and program support](#) are available. [The solicitation and approval process](#) ~~All proposals~~ must comply with the requirements of section 1, Chapter ~~661-763~~, Oregon Law ~~2013-2015~~ (Enrolled House Bill ~~3232~~[3072](#)) and rules adopted to implement that section.

(2) The Oregon Department of Education may only award grants [for operations support](#) to Regional STEM Hubs which meet the minimum criteria by having a record of success in , or clearly established plans for , addressing the following:

(a) ~~Each eligible recipient must establish~~ [Establishing](#) a partnership for a Regional STEM Hub consisting of [the partners identified in OAR 581-017-0309\(2\)](#) ~~a school district, post-secondary, student-focused nonprofit, and industry, business;~~

[\(b\) Selecting and supporting a backbone organization to coordinate and support the various partners of the Regional STEM Hub and ensure effective communication, a focus on data and outcomes, and alignment of programming to address the STEM-related needs of the community; and](#)

[\(c\) Creating, implementing, and improving a Partnership Plan that guides the vision, goals, strategies, and outcomes of the Regional STEM Hub; incorporates the principles of the Equity Lens adopted by the Chief Education Office; and contributes to the achievement of the State's education goals and the STEM-related goals identified by the STEM Investment Council.](#)

[\(3\) The Oregon Department of Education may only award grants for program support to Regional STEM Hubs which meet the minimum criteria by having a record of success in or clearly established plans for addressing the following:](#)

[\(a\) An established Regional STEM Hub with a formalized and approved Partnership Plan, and contributions by partners of human, material, and financial resources;](#)

(b) An established backbone organization to coordinate and support the various partners of the Regional STEM Hub and ensuring effective communication, a focus on data & outcomes, and aligning programming to address the STEM-related needs of the community; and

(c) An approved Partnership Plan that guides the vision, goals, strategies, and outcomes of the Regional STEM Hub; incorporates the principles of the Equity Lens adopted by the Chief Education Office; and contributes to the achievement of the State's education goals and the STEM-related goals identified by the STEM Investment Council.

~~(b) In creating a Regional STEM Hub, network leadership that has a plan to demonstrate the needs of ALL students and incorporate the principles of the Equity Lens adopted by the Oregon Education Investment Board.~~

~~(c) Regional STEM Hubs must identify a common agenda that contributes to the achievement of STEM to the State 40/40/20 goal and the STEM-related goals, which states by 2025 to:~~

~~(A) Double the percentage of students in 4th and 8th grades who are proficient or advanced in mathematics and science.~~

~~(B) Double the number of students who earn a post-secondary degree requiring proficiency in science, technology, engineering or mathematics.~~

~~(d) Regional STEM Hub Partnerships will be expected to:~~

~~(A) Participate in the development and dissemination of a minimum set of shared measurements and reporting of progress as determined by Oregon Department of Education in collaboration with the Oregon Education Investment Board~~

~~(B) Engage in mutually reinforcing activities for improving STEM/CTE education that will focus on instructional systems, communication, student support systems, human resource systems, and governance~~

~~(C) Engage in continuous communication both within and between Regional STEM Hubs~~

~~(D) Establish a backbone support organization to manage and support the Regional STEM Hub Partnership by serving the roles of project manager, data manager, communications hub and professional development facilitators.~~

Stat. Auth.: ORS 327.820; 2015 OL Ch. 763, Sec. 1 (Enrolled HB 3072)~~2013 OL Ch. 661, Sec. 4 (Enrolled HB 3232)~~

Stat. Implemented: ORS 327.820; 2015 OL Ch. 763, Sec. 1 (Enrolled HB 3072)~~2013 OL Ch. 661,~~

581-017-0315

Implementation of Grant Funding of Regional STEM Hubs

(1) The Oregon Department of Education shall allocate funds to support [the operations and programs of](#) expanding and newly established Regional STEM Hubs.

(2) [The Department of Education, in collaboration with the Chief Education Office and the STEM Council, shall determine for each biennium the portion of the funds available for operations support and program support grants. Each grantee may receive funds between \\$100,000 to 750,000 which shall be distributed as followed:](#)

~~(a) Phase 1 — Initial funding will be no more than 10 percent or \$25,000, whichever is higher, of the grant awarded amount.~~

~~(b) Phase 2 — Full funding will be released up to the awarded amount within six months of the date of the initial funding if the Oregon Department of Education, in collaboration with the Chief Education Officer or their STEM designee, determines that the grantee has established evidence of readiness.~~

~~(c) Evidence of readiness will consist of a business plan addressing the following:~~

~~(A) Formalized partnership agreements in place with commitments of human and financial resources.~~

~~(B) Agreed upon goals and common outcomes related to student, teacher and community needs, with particular attention to closing the achievement gap and furthering 40/40/20.~~

~~(C) Needs analysis related to student, teacher, and community challenges.~~

~~(D) Community profile of STEM-related programs, initiatives, and resources.~~

~~(E) Program implementation plan to address goals.~~

~~(F) Demonstrated leadership and capacity to implement grant.~~

~~(G) Evaluation plan to identify records of success and/or challenges.~~

~~(H) Plan for sustaining partnership and activities beyond the funding period.~~

~~(I) Commitment to participating and supporting the statewide STEM Network.~~

(3) Grantees and the associated Regional STEM Hub will be expected to:

(a) Participate in data collection and reporting progress against agreed upon outcomes determined by the Chief Education Office, the STEM Investment Council, and the Oregon Department of Education;

(b) Engage in mutually reinforcing activities for improving STEM/CTE education with partners within and outside the formal education system;

(c) Engage in collaboration and communication, within and between Regional STEM Hubs, including regular coordination calls, site visits, and convenings; and

(d) Identify and select a backbone organization to coordinate and support the various partners of the Regional STEM Hub and ensuring effective communication, a focus on data & outcomes, and aligning programming to address the STEM-related needs of the community.

Stat. Auth.: ORS 327.820; 2015 OL Ch. 763, Sec. 1 (Enrolled HB 3072)~~2013 OL Ch. 661, Sec. 4 (Enrolled HB 3232)~~

Stat. Implemented: ORS 327.820; 2015 OL Ch. 763, Sec. 1 (Enrolled HB 3072)~~2013 OL Ch. 661, Sec. 4 (Enrolled HB 3232)~~

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581-017-0318

Reporting of Regional STEM Hubs

(1) The Department of Education shall develop partnership-reporting requirements for allocation of funds for implementation of Regional STEM Hubs as required by the ~~Oregon Education Investment Board~~ Chief Education Office.

(2) The Department of Education, in collaboration with the STEM Investment Council and the committee established under ORS 344.075, shall submit a biennial report to the Legislative Assembly related to distributions made under this section. The report must include metrics that identify how distributions made under this section are contributing to the development of a skilled workforce that is able to secure high wage and high demand jobs.

Stat. Auth.: ORS 327.820; 2015 OL Ch. 763, Sec. 1 (Enrolled HB 3072)~~2013 OL Ch. 661, Sec. 4 (Enrolled HB 3232)~~

Stat. Implemented: ORS 327.820; 2015 OL Ch. 763, Sec. 1 (Enrolled HB 3072)~~2013 OL Ch. 661, Sec. 4 (Enrolled HB 3232)~~

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