

**STATE BOARD OF EDUCATION – ADMINISTRATIVE RULE SUMMARY**

**Title/OAR #: STEM Lab School Grant**

**OAR# 581-017-0335 to 581-017-0347**

**Date:** May 23, 2014

**Staff/Office:** Jamie Rumage, Office of Learning;

Mark Lewis, OEIB,

Cindy Hunt, Superintendent's Office

**New Rule**     **Amend Existing Rule**     **Repeal Rule**

**Hearing Date:** May 29, 2014     **Hearings Officer Report Attached**

**Prompted by:**  **State law changes**     **Federal law changes**     **Other**

**Action Requested:**

**First Reading/Second Reading**     **Adoption**     **Adoption/Consent Agenda**

**PROPOSED/AMENDED RULE SUMMARY:**

The proposed rules implement the provisions of House Bill 3232 by establishing STEM Lab School Grant. The board previously adopted these rules as temporary rules.

**BACKGROUND:**

In 2013, under the leadership of Governor John Kitzhaber, the Oregon Education Investment Board proposed key strategic investments to support Oregon's attainment of 40/40/20.

HB 3232 directs the Oregon Education Investment Board (OEIB) to design, implement and report on programs that make strategic investments in three areas:

- Oregon Early Reading Program
- Guidance and Support for Post-Secondary Aspirations Program
- Connecting to the World of Work Program

The OEIB is charged with developing timelines, performance measures and other requirements related to the accumulation and evaluation of data collected in relation to the programs. The State Board of Education is directed to adopt rules necessary for the Department of Education to administer the programs within the strategic investments. The rules must be consistent with the actions taken by the OEIB.

The purposes of the Connecting to the World of Work Program are to:

- Increase students' proficiency, interest, and attainment in science, technology, engineering and mathematics (STEM); and
- Increase the number of students who earn a postsecondary degree requiring proficiency in science, technology, engineering or mathematics.

To accomplish the purposes of the Connecting to the World of Work Program, monies shall be distributed for strategic investments that advance the following missions:

- (a) Providing opportunities for students, with a specific focus historically underserved and underrepresented, to fully engage in STEM education & design-related industries.
- (b) Supporting effective STEM & design-related industries learning environments that promote students' deeper understanding of real-world complex problems.
- (c) Developing public schools that focus on STEM & design-related industries to serve middle school, high school and community college students.

Under the Connecting to the World of Work Program a strategic investment of \$2.25M for STEM Lab Schools was designated by the Legislature and the Department of Education for the purpose of:

Distributing moneys to public schools, school districts, postsecondary institutions and student-focused nonprofit organizations to develop public schools focusing on science, technology, engineering, and mathematics & the design-related industries to serve middle school, high school and community college students.

The rules establish new grant programs as methods to specifically address the direction of HB 3232 to increase student' proficiency in science, technology, engineering and mathematics and to connect students to the world of work. In addition, doubling the percentage of students in 4<sup>th</sup> and 8<sup>th</sup> grades who are proficient or advanced in mathematics & science and doubling the number of students who earn a postsecondary degree requiring proficiency in science, technology, engineering or mathematics are identified as goals in related legislation- specifically HB 2636 (2013). This funding stream will support STEM, STEAM and CTE focused organizations to close the achievement gap and raise student achievement. The awards will be distributed following the review of detailed program proposals submitted through the RFP process.

The STEM Lab School Grant program is a competitive grant and will award between \$300,000-\$700,000 to applicants who identify how the funds will be used to achieve STEM education and design-related industry goals. In addition, applicants need to demonstrate support, commitment and readiness to provide opportunities to the historically underserved and underrepresented populations.

**CHANGED SINCE LAST BOARD MEETING?**

- N/A; first read—hasn't been before board
- No; the board previously adopted these rules as temporary rules
- Yes – As follows:

**Fiscal Impact:**

There will also be some cost to the Department of Education to administer the grant program. However, the legislature designated new positions and funding to cover these costs and other costs associated with administering HB3232.

**STAFF RECOMMENDATION:**

- Adopt administrative rule at this meeting
- Adopt administrative rule at next meeting
- No recommendation at this time (rarely used)

## **Oregon STEM (Science, Technology, Engineering and Mathematics) Lab School Grant**

### **581-017-0335**

#### **Definitions and Establishment of STEM Lab Schools**

(1) The following definitions apply to 581-017-0335 TO 581-017-0347:

- (a) “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.
- (b) “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.
- (c) “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.
- (d) “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.
- (e) “Effective STEM Instruction” means the use of evidence-based practices that support interconnected, relevant STEM instruction as stated in definition number fourteen.
- (f) “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.
- (g) “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 concepts. Such learning environments must engage all students in solving complex problems, using highly interactive learning opportunities that create new opportunities for STEM learning across the core curriculum.
- (h) “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.
- (i) “Postsecondary Institution” means:
  - (A) A community college operated under ORS chapter 341.
  - (B) The following public universities within the Oregon University System:
    - (i) University of Oregon.
    - (ii) Oregon State University.
    - (iii) Portland State University.
    - (iv) Oregon Institute of Technology.
    - (v) Western Oregon University.

- (vi) Southern Oregon University.
- (vii) Eastern Oregon University.
- (viii) Oregon Health and Science University.
- (C) An Oregon-based, generally accredited, not-for-profit institution of higher education.
- (j) “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).
- (k) “School” means a public middle school, high school, community college, or postsecondary institution offering a comprehensive instructional program. A school may include a discreet comprehensive instructional program within a larger school or college.
- (l) “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.
- (m) “STEAM Education” means the incorporation of strategies to enhance science, technology, engineering and mathematics (STEM) education by integrating art and design, and promoting creative possibilities.
- (n) “STEM Education” means an approach to teaching and lifelong learning that emphasizes the natural interconnectedness of the four separate STEM disciplines which mirrors the practices and rich contexts of STEM practitioners. 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 authentic 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.
- (o) “STEM Lab School” means to establish a school that has a student-centered school culture of inquiry with meaningful and authentic learning environments that integrate STEM and/or STEAM education aligned with state, national and industry standards. This cutting-edge learning center will deepen connections between other educational institutions, business, industry, out-of-school educators, and the local community to create and promote STEM career pathways for students. An intentional focus of a lab school is to support the professional learning of current and future educators, the implementation of innovative education models, and educational research in a manner that increases knowledge and capacity of systems and institutions beyond the school itself.
- (p) “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.
- (q) “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 and/or educators who's goals or mission are focused on impacting and improving student outcomes in STEM education.

(r) "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.

(s) "Underrepresented Students" in STEM are from demographic groups whose 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.

(2) The STEM Lab Schools Grant is established as part of the Connecting to the World of Work Program.

(3) The purpose of the STEM Lab School Grant is to:

(a) Engage middle school, high school and/or community college students in authentic, inquiry-based learning environments that increase experiential learning opportunities focused on Science, Technology, Engineering, and Mathematics (STEM) education and design-related industries to improve, enhance, and enrich students' problem-solving capabilities and to foster 21<sup>st</sup> Century Skills.

(b) Address ongoing access, opportunity, interest and attainment gaps for underserved and underrepresented students in STEM and design-related industries consistent with the Equity Lens.

(c) Promote more effective STEM and design-related industries instructional practices consistent with Common Core State Standards, Oregon State Science Standards and Oregon State Arts Standards by offering educator professional learning opportunities.

Stat. Auth.: ORS 327.800

Stat. Implemented: ORS 327.820

### **581-017-0338**

#### **Eligibility of STEM Lab Schools**

(1) The Oregon Department of Education may allocate funds for STEM Lab Schools to the following entities:

(a) Public Schools;

(b) School districts;

(c) Student-focused nonprofit organizations; or

(d) Postsecondary institutions for the purpose of supporting STEM education.

(2) A single grant proposal may include more than one eligible applicant and other entities but the lead agency for the proposal must be one of entities listed in subsection (1) of this rule.

Stat. Auth.: ORS 327.800

Stat. Implemented: ORS 327.820

### **581-017-0341**

#### **Criteria of STEM Lab Schools**

(1) The Oregon Department of Education shall establish a request for proposal solicitation and approval process to be conducted each biennium for which the STEM Lab School grant funds are available. All proposals must comply with the requirements of ORS 327.800 and 327.820 and rules adopted to implement those statutes.

(2) Eligible public schools, school districts, postsecondary institutions, and student-focused nonprofit organizations will focus on STEM education and design-related industry with a specific agenda that demonstrates a record of success or clearly established plans for addressing the following:

(a) Closing the achievement gap for underserved students and those underrepresented in STEM fields with innovative approaches.

(b) Support effective implementation of the Common Core State Standards, the Oregon State Science Standards and the Oregon State Arts Standards.

(c) Successfully move students along a P-20 STEM workforce pathway.

(d) Engage students in meaningful, authentic, problem-based learning that will support the Oregon's 40-40-20 goal.

(e) Provide professional learning opportunities that support educator effectiveness.

(3) Eligible public schools, school districts, student-focused nonprofit organizations, and post-secondary institutions must have a comprehensive system for measuring students' quantitative and qualitative outcomes, provide documented data and ensure that the resources received will be used to provide STEM career pathway opportunities to students.

Stat. Auth.: ORS 327.800

Stat. Implemented: ORS 327.820

#### **581-017-0344**

##### **Implementation of Grant Funding of STEM Lab Schools**

(1) The Oregon Department of Education shall allocate funds to support STEM Lab Schools.

(2) Each grantee may receive funds between \$300,000 and \$700,000 for use during the 2013-2015 biennium.

Stat. Auth.: ORS 327.800

Stat. Implemented: ORS 327.820

#### **581-017-0347**

##### **Reporting of STEM Lab Schools**

The Department of Education shall develop partnership-reporting requirements for allocation of funds for implementation of STEM Lab Schools as required by the Oregon Education Investment Board.

Stat. Auth.: ORS 327.800

Stat. Implemented: ORS 327.820