



JIM PIRO, Chair

HERB FRICKE

LISA GRAHAM

DWAYNE JOHNSON

ERIC MESLOW

THOMPSON  
MORRISON

3 VACANT POSITIONS

Staff:

MARK LEWIS  
STEM and CTE Policy  
Director

LISA J. GIBSON  
Council Administrator

# STEM Investment Council

May 18, 2016

9:00 a.m. – 12:00 p.m.

Portland State University  
Meyer Memorial Trust Board Room (URBN 710)  
Urban Center, 506 SW Mill Street, Level 7  
Portland, OR 97201

Call-In Information: Dial: (888) 204 5984; Access Code: 992939#

## AGENDA

1. **Welcome and Introductions**
2. **Director Update**  
Mark Lewis, STEM and CTE Education Director, Chief Education Office (CEdO)
3. **Oregon Workforce System and WIOA (Workforce Innovation and Opportunity Act)**  
Karen Humelbaugh, Higher Education Coordinating Commission, Community Colleges and Workforce Development
4. **Investment Updates**
  - A. **Math in Real Life Grants** – Mark Freed and Tom Thompson, Department of Education
  - B. **Oregon Talent Council Grants** – Melissa Leoni, Oregon Employment Department
  - C. **Post-Secondary Equity Support Grants** – Blanca Torres de Hawkins, Higher Education Coordinating Commission
5. **STEM Week Highlights**  
Jerian Abel, Portland Metro STEM Partnership  
Mark Redmond, STEM Director, Malheur Education Service District
6. **STEM Institute Report**  
Beth Unverzagt, Oregon ASK
7. **Central Oregon STEM Hub**  
Whitney Swander, High Desert Education Service District
8. **Public Comment**  
*Members of the public wanting to give public testimony must sign in. There will only be one speaker from each group. Each individual speaker or group spokesperson will have three (3) minutes.*

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# Workforce Innovation & Opportunity Connections

STEM Investment Council

May 18, 2016

Karen M. Humelbaugh, Workforce Division Director  
Office of Community Colleges and Workforce Development

# PURPOSE

2

- Workforce Innovation and Opportunity Act (WIOA)
- State Workforce Board
- Local Workforce Development Boards
- Initiatives
- Connectivity

# WORKFORCE INNOVATION & OPPORTUNITY

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- Federal job-driven public system
  - Links talent pipeline and business needs
  
- Four Titles
  - Adult, Dislocated Worker, Youth- \$36m
  - Adult Basic Skills- \$5m
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# WIOA PRINCIPLES

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- Integrated
- Industry driven
- Individual skills
  - Training
  - Credentials
  - Certificates
  - Badges

# OREGON WORKFORCE INVESTMENT BOARD (OWIB)

5

## ■ Strategic Plan- 2020

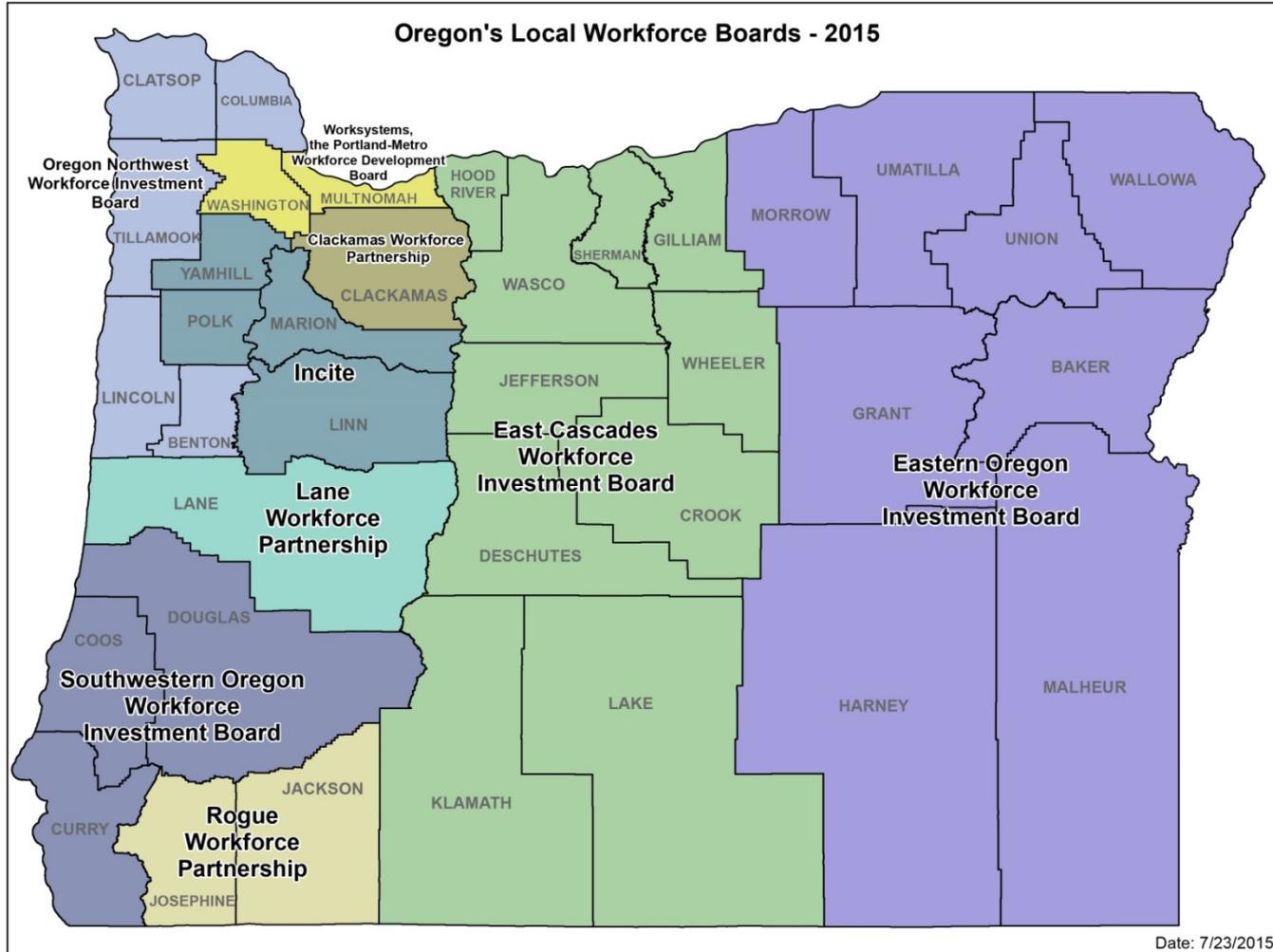
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  - Work experience

# LOCAL BOARDS

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- Locally Driven Strategies
- Neutral Convening Table
- Maximize Resources
- High Value Solutions and Results
- Industry Sector Strategies

# OREGON'S NINE LOCAL BOARDS



Date: 7/23/2015

# WORKFORCE INITIATIVES

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- Work based learning
  - Oregon Youth Conservation Corps (OYCC)
  - Work experience
  - Internships
  - On the Job Training
  - Apprenticeship

# STEM CONNECTIVITY

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- Industry Driven
- Out of School Youth
- Career Technical Education
- Apprenticeship
- STEM Hubs-Local Boards

# WORKFORCE QUESTIONS

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- Questions?

- Karen M. Humelbaugh

[karen.m.humelbaugh@oregon.gov](mailto:karen.m.humelbaugh@oregon.gov)

503.551.9322



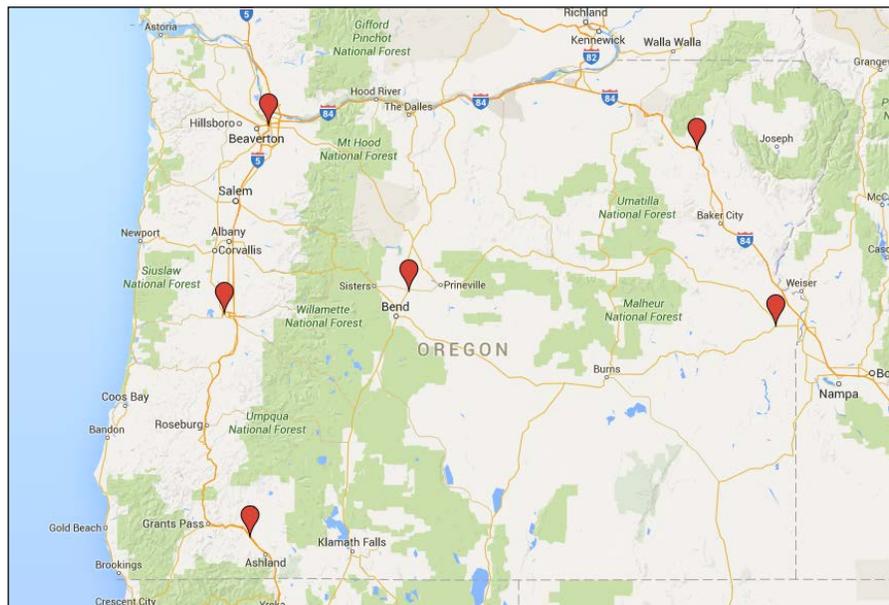
## *Purpose*

The Math in Real Life project supports the expansion of regional networks to create an environment of innovation in math teaching and learning. The focus on applied mathematics supports the natural interconnectedness of math to other disciplines while infusing relevance for students.

During 2015 to 2017, the project will support six networked math learning communities that will focus on developing and testing applied problems in mathematics in grades 7 to 10. The networks will help math teachers refine innovative teaching strategies with the guidance of regional partners and the Oregon Department of Education.

## *Recipients*

Recipient	Related STEM Hub
Eastern Oregon University	Greater Oregon STEM Hub
High Desert ESD	Central Oregon STEM Hub
Lane ESD	Lane County STEM Hub
Malheur ESD	Frontier Oregon STEM Hub
Portland State University	Portland Metro STEM Hub
Southern Oregon ESD	Southern Oregon STEM Hub



## *Progress*

### Team Leader Meeting

Team leaders from each project met in Salem on April 19 as a networked community to develop a common understanding of math in real life, math-rich context, and context-rich lesson planning.

### Common Measures

Projects met on May 13 to discuss use of common measures of outcomes across projects. Teams agreed to use instruments developed by the Portland Metro STEM Hub.

### First Progress Report

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### Developing Teams

Each regional project is currently assembling teams of teachers for networked learning communities. Most will have teachers meet starting in the summer at a central location. Malheur ESD is using a TOSA model for implementation to reduce the need for extensive travel by teacher teams.

### Networking Website

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## *Next Steps*

### Regional Professional Development

Regional projects have scheduled professional development through the summer. Greater Oregon STEM Hub had one day of professional development in May. Lane ESD is holding a session on June 3 to focus on cultural competency in lesson planning.

### Implementing Lessons

Teams will be required to implement designed lessons during the school year and make changes based on what they have learned from the implementation.

### Second Team Leader Meeting

A team leader meeting in October will focus on improving lesson quality and assessing student work.

The logo for the Oregon Talent Council features the text "Oregon TALENT Council" in a dark red serif font. The word "Oregon" is in a smaller size than "TALENT" and "Council". A large, thin red circle is positioned behind the text, partially overlapping the word "Oregon" and "Council".

# Oregon TALENT Council

A hand in a white shirt is holding a white eraser, with a red circle drawn around a blue person icon on a whiteboard. The background is a blurred office setting with many blue person icons scattered across it.

## Council Grants & Lifecycle

May 18, 2016

Melissa Leoni | Executive Director

*Making Oregonians the first and best choice of Oregon employers*

# Mission and Goals

Bridge needs of industry to education and workforce so:

- **Oregon employers can quickly find qualified workers** that can hit the ground running
- **Oregon enhances its reputation** as a go-to state for high quality talent



# Round 1 Grants



## **Mount Hood Community College (\$453,129)**

### *Advanced Manufacturing Certification Center (AMC Center).*

- MHCC will design and implement the AMC Center to incorporate a career pathway model for industry certifications as well as develop an Associate of Applied Science degree program in Mechatronics.
- Planned and developed with industry leaders and will have the capacity to train 500 new and existing manufacturing workers by 2021.
- Increases the quantity and quality of the talent available to the over 600 manufacturers in the region by providing the best-educated and most skilled workforce possible for the community.

# Round 1 Grants



## **Oregon Health & Science University (\$672,403)**

*Industry Relevant Training and Research Experiences for Biomedical Engineering and Data Science Students.*

- OHSU in partnership with Oregon State University will provide the skilled professionals needed to sustain Oregon's growth in biomedical engineering and will integrate industry-centric training and experiential learning activities within new transdisciplinary undergraduate and graduate programs at OHSU and OSU.
- With Oregon Bioscience Association will establish a program enabling trainees to cross traditional disciplinary boundaries and transition from academia into commercial enterprise through the use of industry-oriented BioPro short courses, including e-campus courses and internships.

# Round 1 Grants



## **Oregon Institute of Technology/Oregon Tech (\$340,783)** *Cybersecurity Workforce Development.*

- Undergraduate dual major and a graduate level certificate in cybersecurity starting in the Fall of 2016 at both the Klamath Falls and Wilsonville campuses and online.
- Undergrads will earn a degree with a second major in cybersecurity in four years by completing additional specialized coursework during the summers.
- Cybersecurity courses will be aligned with industry standard certifications, and where possible, use actual certification exams in place of final exams, giving students additional credentials and immediate industry qualifications while they are completing their degree.

# Round 1 Grants

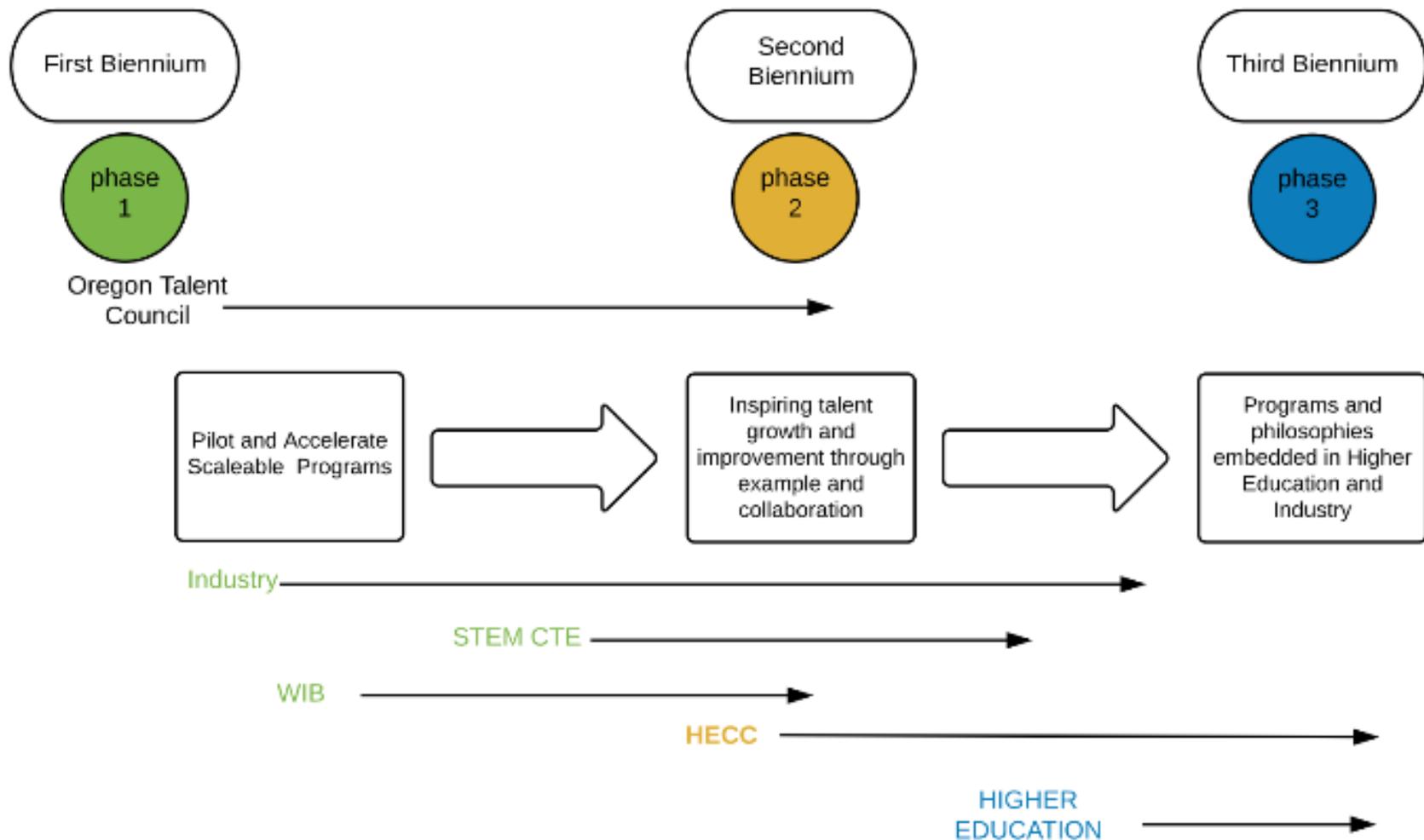


## **Oregon State University (\$533,686)**

### *Pacific NW Electrical System Resiliency/Disaster Preparedness Training.*

- Addresses the urgent talent gap for energy systems engineers.
- OSU will partner with Portland State University and industry partners Central Lincoln Public Utility District, Portland General Electric and Pacific Power to develop graduate level, professional development, and industrial short-courses for incumbent and emerging talent in the electrical power systems area.
- Electrical power systems engineers will be trained for disaster preparedness and electrical system resiliency, with particular attention to a Cascadia Subduction Zone event.

# Recurring Investment Lifecycle





# Central Oregon STEM Hub

*Science, Technology, Engineering, and Math in the heart of Oregon*



**Whitney Swander**  
*STEM Hub Executive Director*  
High Desert Education Service District





# STEM in the Heart of Oregon



- **Fastest growing industries by 2022:** Healthcare, Construction, Professional and Business Services (24%+); Advanced Manufacturing (19%+)
- **Established STEM Industries:** Aerospace, Semiconductors, Software, Renewable Energy, Medical Devices, Natural Resources, Agriculture, and Brewing
- **Key Industries targeted for development and growth:** High Tech (hardware and software); Bio-Tech; Recreation Equipment; Brewing/Distilling; Data Centers

\*Sources: Business Oregon, *Regional Competitive Industry Analysis*; EDCO, *Business and Economic Data*

# Key **needs** driving our partnership:

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Student **Achievement** and  
College and Career **Readiness**



Meeting the demand for  
“**Home Grown Hiring**”



**Equity** in Opportunity and  
Access



# Central Oregon STEM Hub **Goals** and **Key Indicators**

**COMMUNITY** is aware and connected to regional STEM opportunities.

Priority Indicator:

- Increase participation of underrepresented populations.



**EDUCATORS** are equipped to engage students in exceptional STEM curriculum.

Priority Indicators:

- Increasing educator STEM pedagogical content knowledge.
- Increasing availability of STEM programs of study and dual credit courses.



**STUDENTS** are interested and ready to enter a STEM post-secondary track.

Priority Indicators:

- Increasing # of students taking STEM courses.
- Increasing math and science achievement scores.



Central Oregon has a skilled, homegrown **WORKFORCE** and **ECONOMY** that attract and retains STEM businesses.

Priority Indicators:

- Increase # of STEM certificates and degrees, especially for underrepresented and nontraditional students.



# Central Oregon STEM Hub

*Science, Technology, Engineering, and Math in the heart of Oregon*



# Collective Impact Strategy and Framework

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# What we are **learning**:

---

Collaboration is an *iterative* and *ongoing* process.



- *Intentionally re-structuring* Advisory Board (Balance: PreK-12, higher ed, industry, and business)
- *Making new connections* and building relationships to **sustain change processes**
- *Collaboratively* defining and empowering workgroups to use **outcomes and indicators to drive initiative planning**
- **Systems** must established to make programs **impactful**



# The Path Ahead:

- Building a **cross-sector STEM System** across Central Oregon **that honors the diversity** of our STEM industries, our region, and our community
- Connecting the **STEM System** with other Systems, particularly Better Together (RAC) and East Cascade WIB, **reinforcing our shared priorities** around workforce capacity and **leveraging resources**.



# Central Oregon STEM Hub

*Science, Technology, Engineering, and Math in the heart of Oregon*

## Advisory Board

*Responsible for central Hub governance, strategic direction, and support of Hub workgroups.*

*Current Priority Indicators: C1, E1, E2, S1, S2, W1*

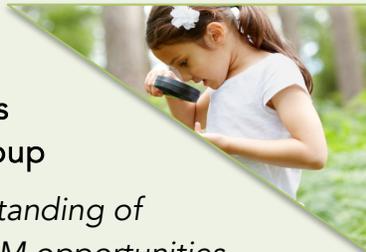
## Executive Committee

*Represents core partners carrying out hub backbone operations.*

## Hub Director

*Manages day-to-day hub operations and facilitates workgroups.*

## Community Literacy & Awareness Workgroup



*Raising understanding of STEM and STEM opportunities, particularly among underrepresented populations.*

*Priority Indicators: C1*

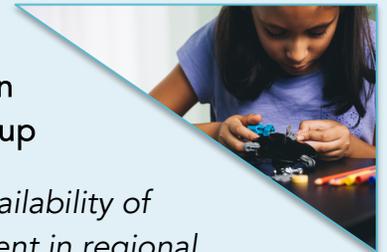
## Teaching & Learning Workgroup



*Addressing formal and informal learning opportunities, educator advancement, including professional development, and other education support.*

*Priority Indicators: E1, S2, (C1)*

## Pathways & Participation Workgroup



*Addressing availability of and engagement in regional pathways to STEM careers, such as CTE programs and vertical alignment preK-career.*

*Priority Indicators: E2, S1, W1, (C1)*

**Share your expertise!** There's always room at the table and our success hinges on having the voices of preK through higher education teachers and administrators, informal educators and community organizations, business and industry leaders, and other stakeholders well represented in each workgroup. Strong representation from the entire region (Crook, Deschutes, and Jefferson Counties) and advocates from groups underrepresented in STEM fields are also critical. Have a passion for STEM? Join us today!

*For more information or to join a workgroup, please contact [info@centraloregonstem.org](mailto:info@centraloregonstem.org).*

# Central Oregon STEM Hub

Science, Technology, Engineering, and Math in the heart of Oregon

## Long Term Outcomes & Indicators\*



The Central Oregon **COMMUNITY** is aware of and connected to regional STEM opportunities.

- C1. Increasing participation of underrepresented populations.**
- C2. Increasing number of times kids have been exposed to STEM experiences.
- C3. Increasing engagement of businesses in community.
- C4. Utilization of unique assets and environment to raise STEM interest.



Central Oregon **EDUCATORS** are equipped to engage students in exceptional STEM curriculum.

- E1. Increasing educator STEM pedagogical content knowledge.**
- E2. Increasing availability of STEM programs of study and dual credit courses.**
- E3. Increasing time allocated for science instruction in elementary school.
- E4. Increasing educator confidence in teaching STEM subjects.
- E5. Increasing number of STEM professionals involved in classrooms.
- E6. Increasing resources and equipment available to teachers.



Central Oregon **STUDENTS** are interested and ready to enter a STEM post-secondary track.

- S1. Increasing number of students taking STEM courses.**
- S2. Increasing math and science achievement scores.**
- S3. Increasing STEM career choice at graduation.
- S4. Decreasing post-secondary enrollments in remedial math.
- S5. Increasing student retention in STEM certificate and degree programs.
- S6. Increasing participation in out-of-school STEM experiences.



Central Oregon has a skilled, homegrown **WORKFORCE** and **ECONOMICS** that attract STEM businesses.

- W1. Increasing number of STEM certificates and degrees, especially for underrepresented and nontraditional students.**
- W2. Increasing number of people ready to choose a STEM career.
- W3. Increasing recognition of STEM skills and opportunities in traditionally non-STEM fields.

**Z1. Increasing interaction and communication within and between stakeholder audiences.**

\*Current priority indicators in bold.

# Central Oregon STEM Hub

Science, Technology, Engineering, and Math in the heart of Oregon

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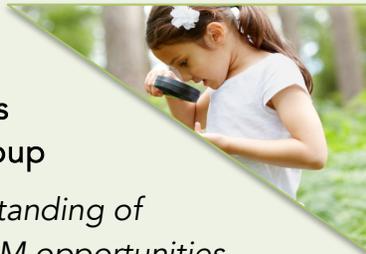
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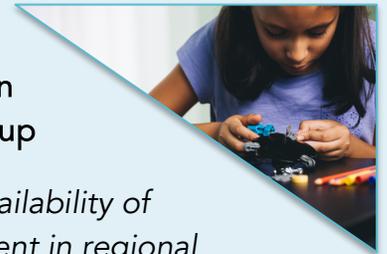
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# Opportunity: Connecting CTE-STEM at the HDES

*Leadership Team, Projects to Build Capacity (Advancing Career Pathways and Math in Real Life*

Impact: Meaningfully *engaging* and *sustaining* partnerships with Business and Industry



# The Path Ahead:

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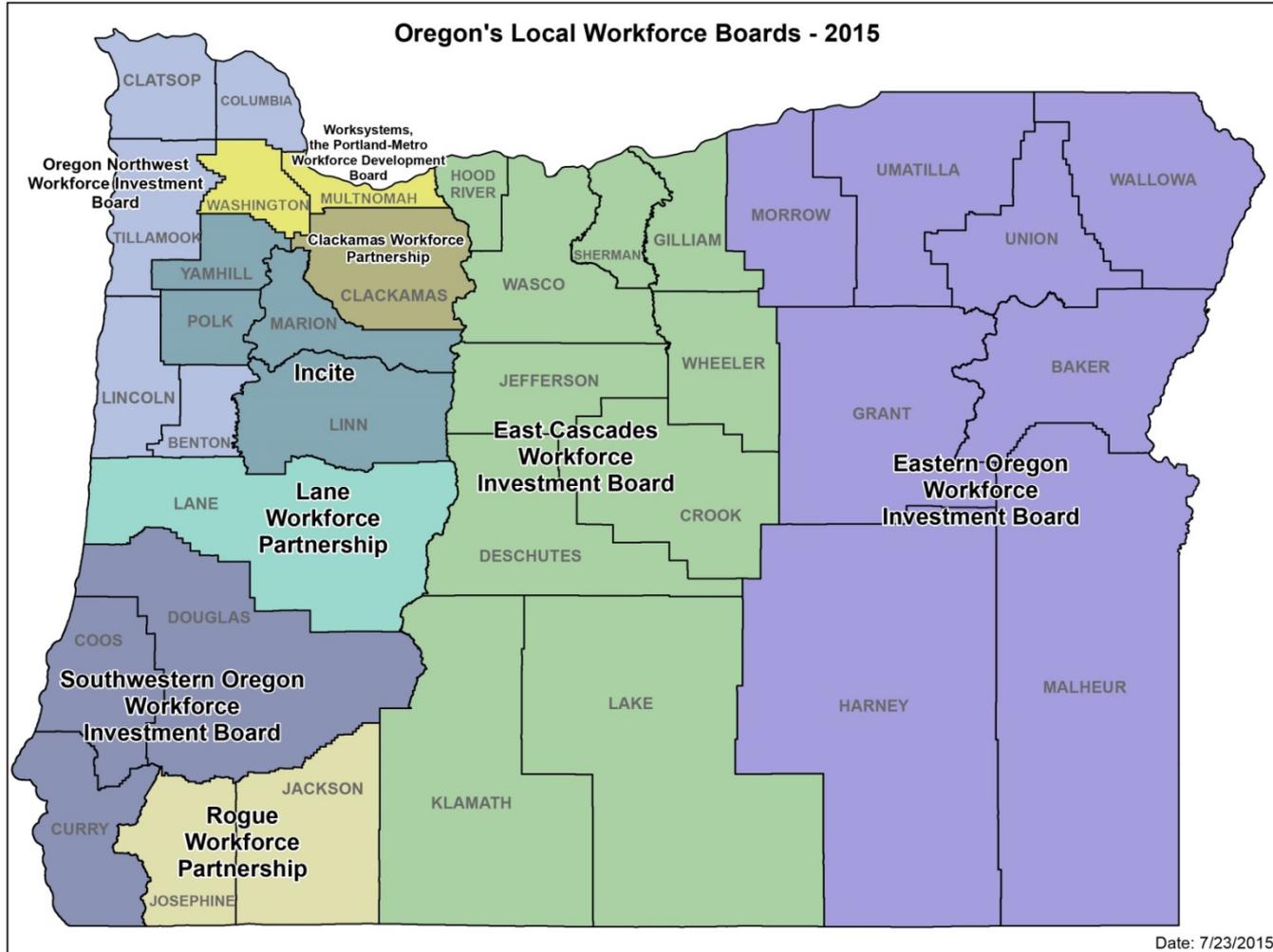
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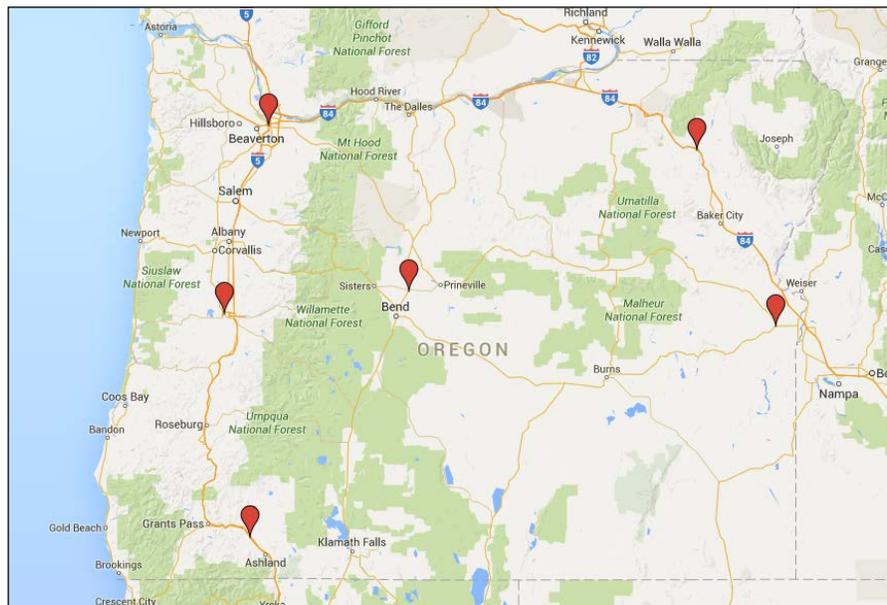
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### Second Team Leader Meeting

A team leader meeting in October will focus on improving lesson quality and assessing student work.

The logo for the Oregon Talent Council features the text "Oregon TALENT Council" in a dark red serif font. The word "Oregon" is in a smaller size above "TALENT", which is in a larger, bold font. "Council" is below "TALENT" in a similar size to "Oregon". A large, thin red circle is positioned behind the text, partially overlapping the word "Council".

# Oregon TALENT Council

A hand in a white shirt is holding a whiteboard marker, pointing at a blue person icon on a whiteboard. The whiteboard is covered with many other blue person icons, some of which are circled in red. The background is a blurred office setting.

## Council Grants & Lifecycle

May 18, 2016

Melissa Leoni | Executive Director

*Making Oregonians the first and best choice of Oregon employers*

# Mission and Goals

Bridge needs of industry to education and workforce so:

- **Oregon employers can quickly find qualified workers** that can hit the ground running
- **Oregon enhances its reputation** as a go-to state for high quality talent



# Round 1 Grants



## **Mount Hood Community College (\$453,129)**

### *Advanced Manufacturing Certification Center (AMC Center).*

- MHCC will design and implement the AMC Center to incorporate a career pathway model for industry certifications as well as develop an Associate of Applied Science degree program in Mechatronics.
- Planned and developed with industry leaders and will have the capacity to train 500 new and existing manufacturing workers by 2021.
- Increases the quantity and quality of the talent available to the over 600 manufacturers in the region by providing the best-educated and most skilled workforce possible for the community.

# Round 1 Grants



## **Oregon Health & Science University (\$672,403)**

*Industry Relevant Training and Research Experiences for Biomedical Engineering and Data Science Students.*

- OHSU in partnership with Oregon State University will provide the skilled professionals needed to sustain Oregon's growth in biomedical engineering and will integrate industry-centric training and experiential learning activities within new transdisciplinary undergraduate and graduate programs at OHSU and OSU.
- With Oregon Bioscience Association will establish a program enabling trainees to cross traditional disciplinary boundaries and transition from academia into commercial enterprise through the use of industry-oriented BioPro short courses, including e-campus courses and internships.

# Round 1 Grants



## **Oregon Institute of Technology/Oregon Tech (\$340,783)** *Cybersecurity Workforce Development.*

- Undergraduate dual major and a graduate level certificate in cybersecurity starting in the Fall of 2016 at both the Klamath Falls and Wilsonville campuses and online.
- Undergrads will earn a degree with a second major in cybersecurity in four years by completing additional specialized coursework during the summers.
- Cybersecurity courses will be aligned with industry standard certifications, and where possible, use actual certification exams in place of final exams, giving students additional credentials and immediate industry qualifications while they are completing their degree.

# Round 1 Grants



## **Oregon State University (\$533,686)**

### *Pacific NW Electrical System Resiliency/Disaster Preparedness Training.*

- Addresses the urgent talent gap for energy systems engineers.
- OSU will partner with Portland State University and industry partners Central Lincoln Public Utility District, Portland General Electric and Pacific Power to develop graduate level, professional development, and industrial short-courses for incumbent and emerging talent in the electrical power systems area.
- Electrical power systems engineers will be trained for disaster preparedness and electrical system resiliency, with particular attention to a Cascadia Subduction Zone event.

# Recurring Investment Lifecycle

