GO·STEM Partnership Plan

Greater Oregon Science Technology Engineering & Math

Greater Oregon STEM (GO STEM) was formed in 2014 and serves a large geographic area with a small population. The GO STEM Partnership represents seven counties: Baker, Grant, Harney, Morrow, Umatilla, Union and Wallowa. Although each county in eastern Oregon is unique, commonalities around the region include rural living, an abundance of public lands, and a history of natural resource based economies (primarily logging, agriculture and ranching).

Although it is a large area, there is great value in bringing the seven counties together under one partnership. There is commonality in the geographic isolation of these small populations along with similar economic and educational issues. Coming together to address regional concerns allows the region to benefit from the sharing of perspectives, resources, and experiences.

The economic vitality of eastern Oregon depends on a diverse grouping of public and private sector enterprises. Current STEM workforce vacancies in the region include jobs related to health care, natural resources, manufacturing and information technology. A sustainable regional workforce is required to fill both current and foreseeable occupations and to prepare for businesses and industries planning to expand or relocate to eastern Oregon. A ready workforce that is skilled in technical and applied STEM fields is essential to ensure that the region is able to realize economic stability and growth.

Enhancing STEM awareness, pipelines, and pathways is crucial in connecting educational resources with regional needs. Education is central in preparing students for existing jobs and in building capacity to serve new industries. As statewide initiatives, policies, and resources are developed, the rural perspective must be part of the overall plan for the state.

Based on the overarching need of a skilled workforce the GO STEM Hub constituent components, including workforce development, educational institutions, non-profits and industry, came together to establish the Hub's mission, vision and priorities.

Contents

Executive Summary

Hub Leadership

GO-STEM convenes an Advisory Board made up of key stakeholders with broad representation throughout a large geographic region.

Mission

GO-STEM is a regional partnership cultivating a community that values STEM learning, prepares youth for successful STEM careers, and builds pathways and pipelines to meet workforce needs.

Vision

Realize regional prosperity through a thriving STEM workforce and career-ready rural youth.

Priorities

In response to the needs identified and the mission and vision established, GO STEM has identified the following priorities:

STEM Awareness, Pipelines & Pathways

Grow the workforce: Eastern Oregon has a vital STEM workforce with a variety of opportunities at different educational levels

STEM Systems for Education

Improve educational opportunities: Schools in eastern Oregon are known for quality STEM education and employable graduates

Communicating Rural STEM Perspectives, Needs, Solutions and Opportunities

Advance rural viewpoints: Rural areas are seen as valuable contributors to statewide learning and growth

GO-STEM Highlights in Eastern Oregon

STEM Awareness, Pipelines & Pathways

- Convened partners to develop STEM career professionals courses that offer early college credit
- Collected and conveyed resources through go-stem.org including: STEM careers videos, K-12 lessons, Lending Library materials, and a Regional Business Map

STEM Systems for Education

- Connected regional partners to statewide resources and networks that led to curricular changes in pre-K-12 and post-secondary classrooms
  - Math in Real Life
  - Oregon Science Project
  - STEM at Head Start
  - STEM Methods for pre-service teachers at EOU
- Connected regional partners to resources to support out-of-school STEM programs
  - STEM Beyond School
  - Robotics Club resources

Communicating Rural STEM Perspectives, Needs, Solutions & Opportunities

- Convened partners to build STEM Ambassadors program
- Led statewide group to develop and share Solar Eclipse resources

2017-2018 STEM Ambassadors

Who we are

The GO STEM partnership includes representatives from seven counties in eastern Oregon. The partners represent broad-ranging interests including preschool through post-secondary education, community leaders in education and workforce development, and STEM business and industry. Through the development of the partnership, a deeper understanding of the breadth of STEM and the value of collective impact work has grown. Resources secured by the STEM Hub make it possible to identify needs and assets at a regional level, coordinate similar efforts, and build on high quality work that is already happening in the region.

Values

1. We believe all students have the potential to succeed in STEM careers and the courses required to attain those careers. We strive to meet the needs of rural students, students of color, students navigating poverty, and young women as all of these groups choose STEM careers at a lower rate than their peers.
2. We believe a vital economy and job opportunities are essential for rural areas to thrive. Economic vitality affects the opportunities available in our communities and schools. We strive to support STEM business and industry in meeting their needs for qualified employees and supporting youth as innovative entrepreneurs.
3. We believe STEM education takes place throughout the community. STEM learning involves hands-on, integrated learning applied authentically in the real world. We strive to involve STEM professionals in the classroom and to connect students with STEM experiences outside the classroom.
4. We believe all learners benefit from STEM learning and experiences. STEM skills including teamwork, problem-solving, and critical thinking applied to real-world problems are essential skills for all people in our society.
5. We believe teachers need to be provided with long-term, research-based professional development in order to increase pedagogical skills related to STEM disciplines. We strive to provide resources, opportunities, and support for academically rich STEM learning.
6. We believe rural people from eastern Oregon need a powerful voice at the state level. Though small in numbers and geographically dispersed, rural people must participate in statewide discussion and receive appropriate statewide services to meet their needs.

Hub Governance and Structure

(see Appendix A)

GO STEM is led by an Advisory Board that provides strategic advice to GO STEM staff and helps determine the direction of regional work through consideration of the interests and needs of the region, capacity of regional resources and the long-term vision of success.

GO STEM Backbone staff are responsible for carrying out actions that accomplish the long-term goals of the partnership. This includes seeking funding for the hub backbone and regional programs, forming and supporting Action Teams, providing regional program support and management, representing the partnership in the statewide STEM network, and serving as a STEM communications hub for the region.

Members of the Advisory Board are active in promoting GO STEM and participating in Action Teams to seek funding, advance youth voice and rural perspectives and increase outreach and communication. The Board will elect a chairperson to assist in leading meetings, planning agendas, communicating with Board members and leading assessments of the board and the Executive Director. The Advisory Board includes at least one representative from each county in the region and at least one representative from each of the following sectors:

- K-12 schools
- Education Service Districts
- Post-secondary education
- Early Learning
- Workforce Board
- STEM Business or Industry
- Tribes
- Career Technical Education
- Community Educators
- Non-Profit

Hub Summary Work Statement

The region's economic vitality rests on a skilled workforce. A significant proportion of that workforce is in STEM careers ranging from 33% in Union County to 63% in Morrow County. Not only are STEM jobs on the rise, but also the wages of STEM workers are significantly higher and are growing faster than comparable positions. Although the capacity of educational entities, industry, and business are robust, preparing the right students for the right jobs requires communication, coordination, and filling of gaps. GO STEM's main goals are to connect current resources to those entities who need to have a specific workforce, to anticipate workforce needs and develop methods to address emerging educational needs, and to communicate and promote best practices of STEM industry training, para educational support, and formal education programming to maximize resources.

The Plan

The GO STEM partnership envisions a future with a thriving STEM workforce and career-ready rural youth. To accomplish this GO STEM will build STEM awareness in the community, build upon and make connections between existing educational pathways and pipelines, support community educators and school districts to provide high quality STEM education throughout the region and support the communication for rural perspectives throughout Oregon.

Preparatory work and research created connections between regional stakeholders concerned with rural economic development focused on STEM and STEM-related enterprises and industries. Results of this work have included advancing STEM education preK-12, creating early college credit opportunities for high school students, development of a youth STEM Ambassadors program, Family STEM events, STEM teaching units, videos and resources available on the GO STEM webpage (http://go-stem.org) and the inclusion of STEM Methods courses in EOU's education programs. See Appendix F for details about progress and accomplishments of the partnership. GO STEM has built a viable and effective partnership with stakeholders throughout the region and remains in an excellent position to continue moving forward with next steps to address workforce needs and develop educational opportunities that prepare students for successful STEM careers.

The following information outlines GO STEM's geography and unique socio-economic reality, carefully details educational opportunities and needs of the region, lists the current resources of the region and the GO STEM partners, and systematically marshals a strategic plan to affect the aims of GOSTEM.

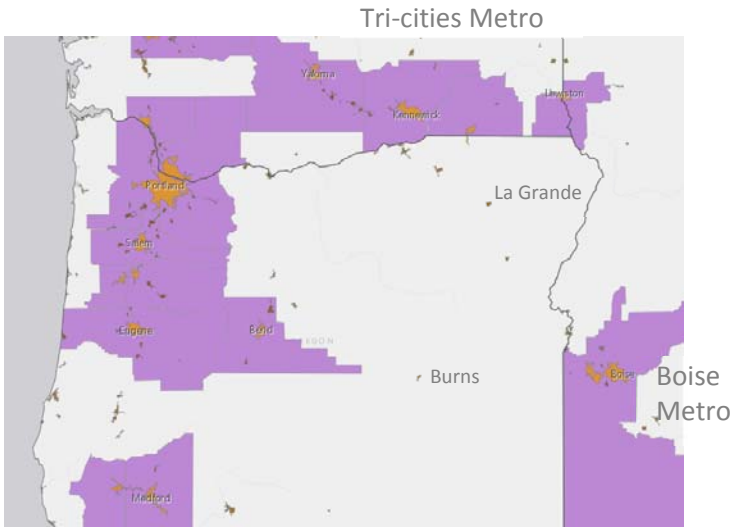
STEM for Eastern Oregon

Interest in STEM education is rising across eastern Oregon. Schools and ESDs are promoting CTE programs of study, workforce development centers are seeking individuals to fill STEM workforce positions, numerous entities are providing STEM job shadow opportunities, computer science and health care courses are seeing an increase in numbers, STEM professional development programs for in-service and pre-service educators are being offered and non-profit agencies are promoting STEM.

There is an untapped market for innovating solutions, products and businesses that are uniquely targeted to rural problems and populations. Eastern Oregon youth could become leaders in these fields leading to new STEM-related enterprises, industries and careers in rural communities. The GO-STEM partnership can be the force that promotes system-wide support for rural students to access high quality education and pathways and pipelines in computer science, technology, engineering, manufacturing, natural resources, agriculture and entrepreneurial enterprises.

Many of the GO STEM partners have been building programs that add value to both students and workforce partners through better alignment within communities and around the region. With the influx of Career Technical Education (CTE) Revitalization funds, school districts have built relationships with workforce partners and recognize the need to extend this effort throughout the district as well as align STEM and CTE learning opportunities from within. All of these efforts are intended to meet the demands of the regional workforce as well as the needs of a technologically changing society.

Geographic Data



Purple areas are counties containing an urbanized area. Brown spots are urban clusters where there is a town with a population larger than 2,500.
https://storymaps.geo.census.gov

Although eastern Oregon encompasses 29% of the land area in Oregon, it is home to less than 4% of Oregonians. It consists of a complex set of communities separated by distance and time. In this region, which is larger than the state of West Virginia, there are no metropolitan areas. There are six towns that have a population over 5,000 and four of the seven counties do not have any towns with a population above 3,500. The nearest metropolitan areas for residents of eastern Oregon are located in the neighboring states of Washington (Tri-cities) and Idaho (Boise). See map for proximity to metropolitan areas. This level of geographic isolation from a metropolitan area and from state level functions has an impact on both the services provided to people and the opportunities available to business and industry. It also builds a strong culture of independence and resourcefulness. STEM initiatives bring people together around issues that are at the heart of every community – youth education and the local economy. Through its established and potential partnerships, GO STEM is well positioned to bring these resourceful people together to find solutions to these broad issues.

The majority of school districts (32 out of 38) in the region are considered either rural or remote or both according the National Center for Education Statistics (NCES). See Appendix B for a table showing the locale codes for school districts in the GO-STEM region. In the six school districts that are considered distant from an urban area rather than remote, the student population is made up of at least 34 percent students of color and in four of these districts the majority of students are non-white. See Appendix C for a summary of regional demographics. Many of the students in eastern Oregon also fall within a disadvantaged group and are underrepresented in STEM careers.

According to “International Studies in Educational Inequality” (2007), the effects of geographic isolation include: poor access to support services, high staff turnover, lack of breadth of curriculum, limited access to quality information technology and infrastructure, and limited access to cultural and social facilities and activities. An example of how this manifests in eastern Oregon schools is that courses like physics and chemistry are taught every other year, even in the larger schools, and courses like calculus and computer science are not available in many smaller schools. Due to the multitude of challenges associated with geographic isolation students in eastern Oregon are likely to have less access to educational opportunities, less exposure to the variety of STEM careers and less exposure to adults who have attained a degree or certificate of higher education.

In addition to being geographically isolated rural areas across the nation are in decline and many indicators reveal that this region of Oregon is also facing declining populations.

- Population growth rates are in decline in four of the seven counties with a range across the region from 1.3% to -3.9% as compared to Oregon's average growth rate of 6.8%.
- Poverty rates are above the Oregon average of 15.4% in five of the seven counties with a range from 15.0% to 19.4%.
- The population of eastern Oregon has a lower rate of college graduates than the Oregon average of 30.8%. The seven counties range from 10.5% to 24.3% of adults with a Bachelor's degree or higher. These numbers are below the statewide goal of 40% by 2025 set forth in 2011 by the 40-40-20 Goal.

Workforce Data

According to the Oregon Department of Employment, in 2016 eastern Oregon had the highest rate of difficulty in filling job vacancies compared to any other region statewide (74% versus the statewide average of 64%). Workforce partners in eastern Oregon express a challenge in filling both health care and entry-level manufacturing/construction/utilities positions. There are jobs but employers find it hard to secure the qualified workforce needed to fill the job vacancies. The positions in manufacturing have specific educational requirements such as technical certificates or high school programs of study. Health care has needs for registered nurses, doctors and health care workers in numerous other related fields.

Thirty three percent of job vacancies in eastern Oregon during 2016 were in the Health Care and Social Assistance industry. Job vacancies in other STEM-related industries can be seen in the table at right and make up another 33%. Healthcare, Manufacturing and Natural resource-based industries and their management are the most influential STEM industries in the region.

Eastern Oregon Job Vacancies by Industry 2016

Health Care and Social Assistance	33%
Natural Resources and Mining	7%
Construction	7%
Manufacturing	7%
Information	6%
Transportation, Warehousing & Utilities	4%
Professional & Technical Services	2%

www.qualityinfo.org

Regional STEM Needs Assessment

Regional needs have been identified through regionally available data, surveys, interviews, and community discussions. Analysis of the information resulted in three regional priorities, which guided the development of the GO STEM Strategic Plan. The following sections: Understanding the Community, STEM Workforce Data, and Post-secondary Education Data summarize these needs.

Understanding the Community

During the first years of the GO STEM Partnership from 2014 to 2016, several needs surveys, interviews and community meetings took place throughout the seven county region. These were conducted by GO-STEM staff, partners and outside evaluators. The following table is a summary of the needs that were identified.

Topic area	Needs
Qualified workforce	Worker commitment (particularly in trade level positions) Improved soft skills (work ethic and professionalism) Improved technical and problem-solving skills Promoting value of the high school diploma with solid math and science content as preparation for high-paying local careers (trade level positions in manufacturing and utilities)
Career Connections	Awareness of high paying trades careers Connections to natural resources careers Opportunities for student internships, field experience, mentors Access to a wider variety of careers in rural counties
Opportunities for Students	Increase out-of-school opportunities (summer or Saturday activities, robotics clubs and competitions, Math Counts, Science Olympiad) Bring in outside providers (OMSI) Provide STEM training for local out-of-school leaders Increase tech learning and exposure Increase access to core STEM classes at all schools (physics, calculus, chemistry, computer science, engineering) Increase events for high school students Provide opportunities for experts to connect with schools Increase relevant learning in school
Opportunities for Educators	PD that can be accessed locally, not travel Assistance aligning to standards (rural schools do not have administrative roles to support this) Classroom resources (teaching kits, STEM teaching technology) Integrated curriculum PD Authentic math learning PD Bring in outside PD providers
Broader Interests	Provide student leadership opportunities Improve students' basic math skills and number sense Improve student motivation, problem solving and critical thinking skills Communicate regional concerns to statewide decision makers Provide a STEM School criteria or rating system Prioritize demands on educators Align PD program options within region

STEM Jobs in Eastern Oregon

Currently the top employing STEM industry in each of the seven counties is either Manufacturing or Healthcare. Other top employing industries include: Agriculture & Forestry, Forestry & Logging, Construction, Administration of Environmental Programs and other Professional & Technical Services. Healthcare and Forestry & Logging are two top-paying STEM industries that are consistent in every eastern Oregon County. Forestry & Logging refers to public employees in this sector, such as those employed by the US Forest Service. Other top-paying industries include: Utilities, Construction, and Administration of Environmental Programs. The private Utilities sector is the highest paying sector in four of the seven counties although relatively few people are employed by this industry outside of Morrow County. In summary, Healthcare, Manufacturing and Natural resource-based industries and

their management are the most influential STEM industries in the region. See Appendix D for a detailed summary of STEM occupations and wages for each county.

Post-secondary Education data

The population of eastern Oregon has a lower rate of college graduates than the Oregon average of 30.8%. The seven counties range from 10.5% to 24.3% of adults with a Bachelor's degree or higher. These numbers are well below the statewide goal of 40% by 2025 set forth in 2011 by the 40-40-20 Goal. In all counties except Morrow, people in eastern Oregon attain Associates degrees at a rate at or slightly above the statewide average. The range for all counties is 7% to 11% whereas the Oregon average is 8%. The low rate is still a problem for eastern Oregon but is at or above the current status of other Oregon counties.

The types of Bachelor's degrees earned by residents of eastern Oregon are outlined in the table below as well as how they compare to all Oregonians. In summary, people in eastern Oregon who have earned a Bachelor's degree or higher are most likely to have a degree in a biological field or in education and less likely to have a degree in engineering, communications, business or a computer science/math related field.

	Oregon	**Baker**	**Grant**	**Harney**	**Morrow**	**Umatilla**	**Union**	**Wallowa**
Bachelor's degree or higher	30%	21%	19%	17%	11%	16%	23%	24%
Associates degree	8%	8%	11%	10%	7%	10%	8%	10%
Some college but no degree	26%	29%	26%	27%	23%	28%	28%	26%
BS - computers, mathematics, statistics	4%	2%	2%	< 1%	3%	4%	1%	3%
BS – biological, agricultural, environmental	8%	17%	26%	22%	15%	11%	16%	24%
BS - physical science	4%	4%	13%	4%	6%	4%	7%	2%
BS - engineering	7%	3%	4%	4%	2%	5%	4%	3%
BS - science and engineering	9%	9%	9%	10%	9%	10%	10%	15%
BS - business	14%	14%	6%	13%	10%	12%	13%	7%
BS - education	11%	19%	19%	22%	26%	20%	21%	21%
BS - communications	4%	2%	8%	0%	1%	2%	1%	1%

http://www.towncharts.com/Oregon/Oregon-state-Education-data.html

Regional Partnerships and Resources

Post-secondary Educational Opportunities

There is one university in eastern Oregon, Eastern Oregon University (EOU) located in Union County. Bachelor's degrees offered include: Biology, Chemistry-Biochemistry, Computer Science, Mathematics, and Physical Activity and Health. The site also hosts two branch campuses: Oregon Health Science University (OHSU) which offers a Bachelor's level Registered Nursing degree and Oregon State University (OSU) which offers degrees in Agriculture and Natural Resources.

There are two community colleges in the region and one high school that offers post-secondary technical training. These include: Blue Mountain Community College (BMCC) located in Umatilla County with branch campuses in Morrow County and Baker County, Treasure Valley Community College (TVCC) located outside the GO-STEM region in Malheur County, and Baker Technical Institute (BTI) located in Baker County. Grant, Harney and Wallowa Counties do not have any post-secondary institutions located within the county.

Post-secondary Pipelines

EOU, BMCC, TVCC and BTI have a regional partnership to expand pipelines and offer new opportunities for people in eastern Oregon to transition between high school, workforce, technical certifications, applied science Associate's degrees and Bachelor's degrees. The goal of this work is to support people to achieve the highest level of education needed for a successful career by allowing a variety of entry points and options for non-traditional students.

See Appendix E

Workforce Collaborations

The Blue Mountain Workforce Training Center is a Blue Mountain Community College (BMCC) branch campus located in Morrow County that opened in 2017. The training center offers a variety of services including: job skills workshops, college preparatory classes (adult basic education, credit recovery, GED preparation, ESL courses), as well as customized training for business and industry. Multiple partners are connected through this center where Port of Morrow (POM) employs a Workforce Training Coordinator and Portland General Electric (PGE) employs a Generation Training Specialist. The Workforce Training Center and partners bring in regional students to introduce them to STEM Education offered through the facility. In addition, industry tours are offered that allow professionals to engage with students about career opportunities.

In order to establish a thriving workforce, Port of Morrow industries are investing time in events, helping to develop local training opportunities, and serving on advisory boards. These industries include Lamb Weston, Calbee North America, Tillamook, Oregon Potato, Boardman Foods, Cascade Specialties, Portland General Electric, Pacific Ethanol, Threemile Canyon Farms, and Amazon Web Services. Two programs that were developed to be offered completely through the Workforce Training Center are the Industrial System Technology and Data Center Technician Programs. These programs were designed to fill a workforce gap that has been increasing each year. Through a collaboration with regional school districts, colleges, and industries we are seeing a direct increase in STEM career awareness and training opportunities that are available at the local level.

CTE Revitalization

Several schools in the region have been recipients of Career Technical Education (CTE) Revitalization grants where they have been supported to invest in key structural and programmatic improvements. These districts are expanding existing programs of study and developing new pathways to meet current workforce demands. This work can include forging deeper connections to local STEM business and

industry as well as updating facilities to allow for modern project-based and hands-on learning connected to those workforce needs. Following this influx of funding and energy, many districts are looking toward how they can also align these opportunities internally and connect STEM/CTE learning in a cohesive and systemic way. Recipients include: Baker, Elgin, Harney County #3, La Grande, Morrow County, and Pendleton School Districts.

Connecting the Partners

Members of the GO STEM Advisory Board are representative of a broad range of interests connected to STEM throughout eastern Oregon. The Organizations they represent are listed in the table below. Counties represented by each organization are abbreviated as: Baker (BA), Grant (GR), Harney (HA), Morrow (MO), Umatilla (UM), Union (UN), Wallowa (WA).

Organization	Position	County	Resources and regional involvement represented
Workforce Representatives			
Eastern Oregon Workforce Board	Grants and Contracts Administrator	Regional	Board's role is to ensure that the local workforce development system is market-driven and responsive in meeting the employment and training needs of employers and job seekers, leads a work group called the Advanced Manufacturing Talent Team.
NASA Ames Research Station	Post-doctoral fellow	At-large	Post-doctoral fellow studying impacts of climate change on forests using NASA supercomputer, graduated from La Grande High School and has interest in improving opportunities for rural students.
Port of Morrow	Workforce Training Coordinator	MO	POM offers industrial building sites in Morrow county and serves the industrial community located there.
Portland General Electric	Generation Training Specialist	MO	Utility company in Morrow county, partner in workforce development through Blue Mountain Workforce Training Center.
K-20 and Community Education Representatives			
Baker Technical Institute	CTE Teacher	BA	Offers a variety of technical training courses as well as career pathways to high school students
Dayville School District	Superintendent	GR	District cultivates active partnerships with local STEM professionals and other schools to provide opportunities for their rural students.
Eastern Oregon University	Dean of College of STM/HS	UN	College of Science, Technology, Math and Health Science (STM/HS) was formed in 2017 and houses multiple projects and programs related to STEM.
InterMountain ESD	Regional CTE Coordinator	UM	Regional leader in providing supports to K-12 schools.
OSU Extension	Assistant Professor	UN	Provides youth and adult programs throughout the region.
Umatilla School District	ELL Family Liaison	UM	District has nationally recognized robotics program and serves student body that is approximately 70% Hispanic/Latino.

Wallowa ESD	Superintendent	WA	Regional leader in providing supports to K-12 schools.
Wallowa Resources	Youth Education Coordinator	WA	Community educator providing long-term engagement with students in K-12. Students work on place-based scientific field research, also offers internships for high school and college students.
Tribal Representatives			
Confederated Tribes of the Umatilla Indian Reservation	STEP Project Manager	UM	Tentative commitment from Education department at CTUIR
Youth Representatives			
Youth Representative	STEM Ambassador	At-large	High school youth representative from Youth Voice and Leadership program

GO-STEM Strategic Plan

GO STEM's plan for long-term success is connected to the GO STEM Vision to "*Realize regional prosperity through a thriving STEM workforce and career-ready rural youth*". Although there are many avenues to approach this work, GO STEM has chosen to focus on the following three areas based on the needs described previously and current efforts in the region.

STEM Awareness, Pipelines & Pathways

Long-term Outcome:
Eastern Oregon has a vital STEM workforce with a variety of opportunities at different educational levels

Long-term Indicator of Success:
Increase collaborations between employers and educational institutions to provide specific skills needed to fill workforce gaps.

STEM Systems for Education

Long-term Outcome:
Schools in eastern Oregon are known for quality STEM education and employable graduates

Long-term Indicator of Success:
Increase in number of high school graduates with full-time employment plans or accepted into post-secondary education for STEM fields

Communicating Rural STEM Perspectives, Needs, Solutions and Opportunities

Long-term Outcome:
Rural areas are seen as valuable contributors to statewide learning and growth

Long-term Indicator of Success:
Increase interactions between GO STEM partners and statewide interest groups and stakeholders

GO STEM has prioritized understanding and addressing the needs that are common to a vast area where communities are under similar pressures to address workforce, economic and educational needs. Partnerships have been formed with community leaders from various entities, even in the most rural parts of eastern Oregon. Simultaneously, post-secondary institutional leaders and workforce representatives in the region have been deepening their partnerships to expand pipelines and offer new opportunities for people to transition between high school, workforce, technical certifications, applied science Associates degrees, and Bachelor's degrees with the goal of allowing a variety of entry points and options for non-traditional students as well as attending to job skills for new technological industries. All of these partners know eastern Oregon well and are deeply committed to the final outcome of thriving rural places.

The hub backbone works to build STEM awareness and common vision through key regional resources that support institutional improvements in STEM education and connections to STEM professionals. Within each of the priorities, external funds are sought to build opportunities that improve the awareness and continuity of educational pathways and pipelines, support school leaders to learn about STEM, build STEM learning opportunities for students, provide high quality professional development for teachers, and provide an avenue for statewide youth voice and leadership. The table below summarizes the needs and the strategies developed to address these needs. Detailed progress within each of these priorities is described in Appendix F.

1. STEM Awareness, Pipelines & Pathways

Long-term Outcome	*Eastern Oregon has a vital STEM workforce with a variety of opportunities at different educational levels*
Needs Addressed	• Inspire local youth to pursue STEM careers including careers in Technology, Healthcare, Manufacturing and Natural Resources. • Fill job vacancies in Healthcare, Manufacturing and Natural Resources with local applicants.
Description	This work is accomplished through awareness of STEM learning and STEM careers in the community and by building consensus among regional partners providing education and workforce development. Partners are aware of and can communicate how their individual work aligns with regional initiatives and youth are aware of STEM careers and the educational pathways available to reach those careers. The hub backbone and the partners develop and expand on available resources and strategies to increase awareness and connections between existing opportunities.
Strategies	Maintain a regional partnership with a variety of stakeholders in education and workforce that will identify existing resources and promote the work of regional STEM champions Expand communications through investment in website resources, social media, newsletters and other interactions to develop STEM awareness for educators, families and STEM professionals Provide connections to STEM professionals for career connected learning, through Oregon Connections and online regional map (http://go-stem.org/regional-map-2/)

	Include career connections in all STEM professional development and STEM student programs led by the partnership Align career learning opportunities within communities to provide career awareness, exposure and experiences Collaborate with regional post-secondary partners to connect students and adults with STEM educational pathways and entrepreneurial skill building opportunities
Key Performance Indicators	Increase in number of followers on GO-STEM social media Increase in number of participants in Oregon STEM Week Increase in number of professionals included on the regional business map Increase in common understanding of STEM initiatives among regional partners as measured by EPIC and OSU (common measurements for all STEM Hubs) Increase in number of graduates in regional STEM post-secondary educational programs
Long-term Indicator of Success	Increase collaborations between employers and educational institutions to provide specific skills needed to fill workforce gaps.

2. STEM Systems for Education

Long-term Outcome	*Schools in eastern Oregon are known for quality STEM education and employable graduates*
Needs Addressed	• Increase access to authentic and relevant learning opportunities that provide practice in communication, teamwork, problem-solving and critical thinking. • Increase access to high-level core STEM and CTE classes at all schools (physics, chemistry, computer science, health sciences, agriculture, and engineering). • Align and connect opportunities for students within school districts.
Description	This work is accomplished by supporting school districts and education providers to increase and align opportunities for STEM learning within the preK-12 system. The GO STEM partnership will seek funds and locate programs to provide quality professional development in STEM, math, science and CTE for teachers, and will help develop pathways and pipelines for students that lead to successful employment after graduation. Important components for students include both rigorous academics and 21st century workplace skills including: leadership, teamwork, communication, critical thinking and problem-solving.
Strategies	Collaborate with school leaders and education providers to develop a plan to align STEM and CTE opportunities, provide resources and expertise on STEM learning, and promote pathways and connections that lead to STEM workplace and academic skills Identify “most wanted” skills from STEM industry and develop a program for industry awards to top STEM school programs

	Support students to develop and promote STEM events in their schools and communities Build opportunities for students to develop leadership, critical thinking and problem-solving skills through STEM learning Build opportunities for students to earn early college credit aligned to educational pathways at community colleges and EOU Provide high-quality STEM professional development for educators and support the development of regional professional learning communities Track and share positive STEM attributes of each school district on the GO-STEM website Track and share success stories from local STEM industry hiring local students
Key Performance Indicators	Increase in STEM interest and awareness of pathways to college and career among K-12 students in participating school districts Increase in number of early college credit courses offered at regional institutions Increase in number of school districts participating in development of District-wide alignment of STEM and CTE opportunities
Long-term Indicator of Success	Increase in number of high school graduates with full-time employment plans or accepted into post-secondary education for STEM fields

3. Communicating Rural STEM Perspectives, Needs, Solutions and Opportunities

Long-term Outcome	*Rural areas are seen as valuable contributors to statewide learning and growth*
Needs Addressed	• Communicate rural perspectives at the statewide level • Develop future leaders in STEM from underrepresented communities (rural, students of color, students navigating poverty, and young women)
Description	This work is accomplished by supporting opportunities for youth voice and leadership. We support rural youth to be representatives of the region at statewide events and to share their accomplishments with local leaders in their communities. We also support regional stakeholders to share their expertise at statewide STEM events.
Strategies	Secure funds to maintain and advance the regional youth program for high school students, initiated by GO STEM, and coordinate the program with statewide efforts related to youth voice and leadership Identify opportunities for students, educators and other partners to attend STEM events and share their perspective with audiences in their communities and around the state Host key annual events including a Summer STEM Camp and Dinner with STEM Pros

	Advocate for effective online options for rural and remote people to attend statewide meetings Participate in and lead statewide committees Share social media and newsletters with statewide audiences
Key Performance Indicators	Increase participation in regional youth voice and leadership program Increase STEM community projects and presentations accomplished by youth leaders Track attendance and leadership of both in-person and online statewide meetings
Long-term Indicator of Success	Increase interactions between GO STEM partners and statewide interest groups and stakeholders

Evaluation

Multiple Key Performance Indicators (KPIs) and a Long-term Indicator of Success (LIS) have been chosen for each priority area in the strategic plan. These indicators utilize a combination of data sources: regional employment and educational databases, annual surveys, statewide EPIC and OSU annual data, and measurable outcomes related to participation in hub activities. A detailed description of the current status and targets can be found in the table below.

Evaluation measures for GO-STEM activities and long-term goals				
	Measurable Outcome	Current status (2017)	Target	Annual growth target
STEM Awareness, Pipelines & Pathways	Increase in number of followers on GO-STEM social media	64 Followers on GO STEM Facebook page 67 followers on go.stem Instagram account	To be determined during development of communications plan	
	Increase in number of participants in Oregon STEM Week as measured by STEMOregon participation	6 participants	40	Increase by 5 each year
	Increase in number of professionals included on the regional business map (http://go-stem.org/regional-map-2/)	30 participants	100	Increase by 10 each year
	Increase in common understanding of STEM initiatives among regional partners as measured by EPIC and OSU	See OSU "Focus of the Hub" Data	All respondent scores fall within agreement spectrum (either below 50% or above 75%)	One area of agreement per year
	Increase in number of graduates in regional STEM post-secondary educational programs	See Appendix G	None	Increase at same rate as population growth
	Long-term Indicator of Success			
	Increase collaborations between employers and educational institutions to provide specific skills needed to fill workforce gaps.	Collect baseline data	To be determined	
	Measurable Outcome	Current status (2017)	Target	Annual growth target

STEM Systems for Education	Increase in STEM interest and awareness of pathways to college and career among K-12 students in participating school districts	Set up surveys using Common Measures with participating STEM school districts	To be determined	
	Increase in number of early college credit courses offered at regional institutions	Collect baseline data	To be determined	
	Increase in number of school districts participating in development of District-wide alignment of STEM and CTE opportunities	1	12	Increase by 2 each year
	Long-term Indicator of Success			
	Increase in number of high school graduates with full-time employment plans or accepted into post-secondary education for STEM fields	Collect baseline data Set up surveys using Common Measures with participating STEM school districts	To be determined	
	Measurable Outcome	Current status (2017)	Target	Annual growth target
Communicating Rural STEM Needs & Solutions	Increase participation in regional youth voice and leadership program	5 counties 12 schools 23 students	7 counties 35 schools 70 students	Increase 5 schools and 10 students each year
	Increase STEM community projects and presentations accomplished by youth leaders	0	35 projects	70% of participants complete project
	Track attendance and leadership of both in-person and online statewide meetings	Led statewide solar eclipse and youth voice committees 2 STEM ambassadors attended and spoke at STEMposium 2 math teachers presented at statewide meeting for MIRL	Lead a statewide STEM committee each year Bring all youth to present at statewide leadership summit	
	Long-term Indicator of Success			
	Increase interactions between GO STEM partners and statewide interest groups and stakeholders	Collect baseline data	To be determined	

Sustainability

GO STEM partners work together in a variety of ways to build pathways and pipelines that serve both students and workforce partners. Each partner is intricately woven into the fabric of the region and almost always connect to one another through more than one common thread. Through working together, the partners engaged with GO STEM are now able to weave together ends that previously did not quite meet. GO STEM endeavors to bring additional resources to the region through statewide STEM innovation grants and backbone support in addition to pursuing funding from foundations and business partners.

As a partner and the host of the GO STEM Hub, Eastern Oregon University is tasked with providing higher education and workforce development over a geographically large area. Thus, EOU naturally comprises a focal point for activities and programs that extend into all aspects of rural economic, cultural and educational needs.

EOU's new strategic plan embraces this role, which is expressed in strategic goals such as:

- Relevance and Interconnection – Serve as the educational, economic, and cultural engine for rural places
- Student Success – Graduate students with the competence and confidence to succeed
- Grow the Number of Lives Impacted – Expand student access, opportunity, and completion

These goals chart a course consistent with GO STEM's mission and vision of engagement with and support for regional partners for the common goal of strengthening the regional vitality. For EOU, the new engagement paradigm necessitates addressing the educational needs of people in all stages of their professional life and the needs of employers for a competent and adaptable workforce.

Given the complexities and rapid pace of innovation today, traditional educational and training pathways cease to characterize the educational progression for most students. Seventy percent of students pursuing higher education today are non-traditional. Hence, the traditional pathway for most becomes in reality an intricate web that connects a multitude of providers of education and training. These providers include public school districts, community & technical colleges, industry trainee and other employer provided programs, economic development agencies, etc.

Given its status as the only provider of baccalaureate and, in some fields, graduate education in Eastern Oregon, EOU is well-positioned to lead the regional conversation for definition and coordination of pathways, and to contribute instructional elements to these pathways, whether these lead to baccalaureate degrees, associate's degrees, or provide on-the-job career/professional development, as well as offering college-level programs of study at secondary schools. Thus, EOU embraces all components of the legislature's 40-40-20 goal.

GO-STEM with its focus on the STEM disciplines constitutes an important component in the broader EOU efforts. As such, GO-STEM is solidly anchored in EOU's identity, mission, and vision.

The GO-STEM Hub has successfully established a network of partners with interest and needs in the STEM disciplines, which will continue to grow. GO STEM has established key partnerships with business, industry and educational providers and has become an important organization in connecting and convening partners around STEM and the common goal of supporting STEM careers and enhancing economic vitality in Eastern Oregon.

References

International Studies in Educational Inequality, Theory and Policy, Volume 2, Educational Inequality: Persistence and Change, Editors: Richard Teese, Stephen Lamb & Mari Duru-Bellat 2007

Appendices

Appendix A – Hub Structure

GO-STEM Organizational Structure and Roles

Hub Backbone

GO-STEM staff are responsible for carrying out actions that accomplish the long-term goals of the partnership. This includes seeking funding for the hub backbone and regional programs, forming and supporting Action Teams, providing regional program support and management, representing the partnership in the statewide STEM network, and serving as a STEM communications hub for the region.

Advisory Board

The Advisory Board provides strategic advice to GO-STEM staff and helps determine the direction of the regional work through thoughtful consideration of partner interests and needs, capacity of regional resources and the long-term vision of success. A current list of Advisory Board members can be viewed at http://go-stem.org/advisory-board/.

Representation

At least one representative from each county in the region

At least one representative from each of the following sectors:

- K-12 schools
- Education Service Districts
- Post-secondary education
- Early Learning
- Workforce Board
- STEM Business or Industry
- Tribes
- Career Technical Education
- Community Educators

Responsibilities

Members of the Advisory Board represent the interests of their county, their sector and their employer.

Examples of Board member actions, expectations and roles:

- Contribute to discussions about the mission, vision, and goals of GO-STEM and support GO-STEM to achieve planned outcomes
- Seek out and represent the needs and interests of regional partners; recruit new partners in their community
- Elect a chairperson to assist with Advisory Board meetings and outreach
- Promote statewide and regional STEM initiatives and opportunities
- Seek funding sources for STEM programs
- Provide exemplars of regional STEM programs and events
- Be aware of the statewide expectations for Oregon STEM hubs
- Advocate for GO STEM with State Representatives and in Salem
- Communicate with GO-STEM staff and other Advisory Board members about opportunities, needs, issues and interests related to STEM in the region

Appendix A – Hub Structure

Meetings

Meetings will occur quarterly during September, November, February, and May. The September meeting will be held in La Grande and should be attended in person when possible. All other meetings will be attended on-line.

Terms

Members will be asked to serve 2-year terms with option for renewal.

STEM Champions

STEM Champions are leaders of their organizations and can impact systemic change around the region. They play a key role in successfully bringing STEM opportunities to students, families, educators, STEM professionals or communities in eastern Oregon. GO STEM will offer opportunities for STEM Champions to learn more about STEM and how they can advance STEM in their regions and organizations.

STEM Champions pledge to:

- Support the advancement of STEM programming through their organization
- Promote statewide and regional STEM initiatives

GO-STEM will:

- Promote STEM Champion work in the region and statewide
- Provide semi-annual updates on STEM programming and initiatives
- List STEM Champions on the GO-STEM website

Partners

GO-STEM is a Collective Impact Partnership made up of individuals and organizations that are all committed to the betterment of youth education and STEM career pathways in eastern Oregon. Partners take an active role to develop, support, promote and implement STEM initiatives and programs. Partners may offer a variety of resources in support of STEM programming including: staff time, event venues, internships, STEM area expertise, educational workshops or materials, and more. STEM Partners can be individuals or organizations.

STEM Partners are essential to the daily and programmatic activities of the regional STEM network. STEM Partners participate on Action Teams and take ideas from dream to reality.

Action Teams

Action Teams form around themes, issues or projects on which GO-STEM is currently working. For example, Action Team members may offer their time and expertise to execute a program, identify funding for planned projects, write proposals, participate in GO STEM initiatives and/or strategize around identified themes. Members may include any interested individual from the region including Partners, STEM Champions, Advisory Board members or unaffiliated individuals.

Appendix B – NCES School Districts

School Districts in the GO-STEM region listed by county and National Center for Education Statistics (NCES) Locale Classification

NCES Locale Code	# of districts	Baker	Grant	Harney	Morrow	Umatilla	Union	Wallowa
Cities (large, midsize, small)	0							
Suburb: Small	1					Milton-Freewater SD		
Town: Distant	5				Morrow County SD	Hermiston SD Pendleton SD Stanfield SD Umatilla SD		
Town: Remote	3	Baker SD		Harney County SD			La Grande SD	
Rural: Fringe	1					Echo SD		
Rural: Distant	4					Athena-Weston SD Helix SD Pilot Rock SD	Imbler SD	
Rural: Remote	24	Burnt River SD Pine Eagle SD	Dayville SD John Day SD Long Creek SD Monument SD Prairie City SD	Diamond SD Double O SD Drewsey SD Frenchglen SD Pine Creek SD Suntex SD South Harney SD	Ione SD	Ukiah SD	Cove SD Elgin SD North Powder SD Union SD	Enterprise SD Joseph SD Troy SD Wallowa SD

Data from nces.ed.gov (2015)

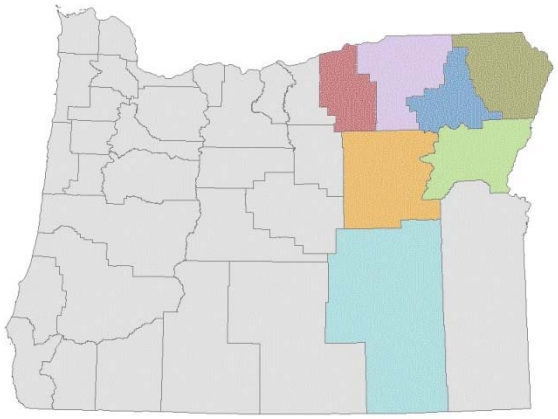
Appendix C – Summary of Population Demographics

Summary of Population Demographics and Top Employing STEM Industries in Eastern Oregon Counties (2016)

Key		
County Population Largest Town, Pop. Pop. Density Pop. Growth Rate	County Population Demographics % in poverty	Post-secondary institution located in the county
#1 STEM Employment Industry	#2 STEM Employment Industry	#3 STEM Employment Industry
#1 Highest Paying STEM Industry	#2 Highest Paying STEM Industry	#3 Highest Paying STEM Industry

Morrow County		
11,274 people Boardman, 3,329 12 people/mi^2 0.9% Growth	White 59.4% Hispanic/Latino 36.3% American Indian 2.2% 15.0% poverty	BMCC Branch Campus
Manufacturing 30.8%	Ag & Forestry 20.5%	Healthcare 4.0 %
Utilities (private) $113,047	Healthcare $61,571	Utilities (public) $57,987

Umatilla County		
76,456 people Hermiston, 17,295 23.6 people/mi^2 0.8% Growth	White 66.4% Hispanic/Latino 26.4% American Indian 4.4% 19.2% poverty	Blue Mountain Community College
Manufacturing 11.4%	Healthcare 11.0%	Ag & Forestry 10.4%
Utilities $100,329	Professional & Technical Services $90.948	Forestry & Logging $63,506



Union County		
26,087 people La Grande, 13,229 12 people/mi^2 1.3% Growth	White 90.8% Hispanic/Latino 5.2% American Indian 1.3% 16.5% poverty	Eastern Oregon University
Manufacturing 12.9%	Healthcare 4.4%	Construction 4.4%
Forestry & Logging $65,348	Construction $62,795	Healthcare $57,383

Wallowa County		
6,946 people Enterprise, 1,886 2.2 people/mi^2 Declining 0.9%	White 93.4% Hispanic/Latino 2.8% American Indian 0.8% 16.1% poverty	No college or post-secondary training in the county
Healthcare 9.2%	Ag & Forestry 7.5%	Construction 6.0%
Utilities $67,464	Forestry & Logging $60,247	Healthcare $58,540

Harney County		
7,292 people Burns, 2,722 0.7 people/mi^2 Declining 1.8%	White 87.4% Hispanic/Latino 5.2% American Indian 3.9% 16.3% poverty	No college or post-secondary training in the county
Healthcare 14.5%	Ag & Forestry 8.6%	Admin of Environmental Prog 5.6%
Admin of Environmental Prog $61,708	Healthcare $55,113	Forestry & Logging $54,745

Grant County		
7,158 people John Day, 1,680 1.6 people/mi^2 Declining 3.9%	White 91.5% Hispanic/Latino 3.7% American Indian 1.7% 16.4% poverty	No college or post-secondary training in the county
Healthcare 13.2%	Forestry & Logging 10.1%	Ag & Forestry 9.6%
Healthcare $61,076	Forestry & Logging $56,772	Admin of Environmental Prog $52,478

Baker County		
16,059 people Baker City, 9,770 5.3 people/mi^2 Declining 0.5%	White 90.8% Hispanic/Latino 4.2% American Indian 1.4% 15.3% poverty	Baker Technical Institute
Manufacturing 9.8%	Construction 4.4%	Professional & Technical Services 3.8%
Utilities $88,118	Healthcare $65,907	Forestry & Logging $65,904

Data from US Census Bureau www.census.gov/quickfacts and Oregon Department of Employment qualityinfo.org (2016)

Appendix D – Summary of STEM Employment Industries in Eastern Oregon Counties (2016)

	Wallowa County Summary			Union County Summary			Umatilla County Summary		
Average wage for STEM Career in county	$ 40,718			$ 46,226			$ 40,388		
Average overall wage	$ 33,700			$ 36,419			$ 37,455		
% of total employment provided by STEM jobs	37.4%			33.7%			41.3%		
% of STEM jobs from public sector	27.4%			13.3%			4.8%		
Top 3 STEM employment industries	Healthcare (private/public)	Ag & Forestry (private)	Construction (private)	Manufacturing (private)	Healthcare (private/public)	Construction (private)	Manufacturing (private)	Healthcare (private/public)	Ag & Forestry (Private)
% of total employment in the county	9.2%	7.5%	6.0%	12.9%	4.4%	4.4%	11.4%	11.0%	10.4%
Average Pay	$ 50,606	$ 36,396	$ 36,014	$ 47,911	$ 57,069	$ 39,377	$ 36,618	$ 42,346	$ 31,091
Highest earning STEM employment industries	Utilities (private)	Forestry & Log (public)	Healthcare (public)	Forestry & Log (public)	Construction (public)	Healthcare (private)	Utilities (Private)	Prof & Tech Serv. (public)	Forestry & Log (public)
% of total employment in the county	0.6%	2.9%	5.7%	1.3%	1.6%	4.2%	0.5%	0.5%	0.4%
Average Pay	$ 67,464	$ 60,247	$ 58,540	$ 65,348	$ 62,795	$ 57,383	$ 100,329	$ 90,948	$ 63,506
Lowest earning STEM employment industries	Utilities (public)	Prof & Tech Serv. (private)	Manufacturing (private)	Ag & Forestry (private)	Repair & Maint Serv.(private)	Information (private)	Ag & Forestry (private)	Repair & Maint Serv. (private)	Information (public)
% of total employment in the county	0.2%	3.2%	5.9%	3.9%	0.7%	1.1%	10.4%	1.0%	0.1%
Average Pay	$ 15,766	$ 35,731	$ 24,714	$ 29,605	$ 33,151	$ 34,183	$ 31,091	$ 33,061	$ 35,254

Morrow County Summary			Harney County Summary			Grant County Summary			Baker County Summary		
$ 49,163			$ 41,368			$ 44,950			$ 44,680		
$ 51,362			$ 34,655			$ 36,852			$ 34,990		
62.7%			40.3%			45.4%			35.0%		
8.2%			45.0%			51.4%			15.3%		
Manufacturing (private)	Ag & Forestry (private)	Healthcare (private/public)	Healthcare (private/public)	Ag & Forestry (Private)	Admin of Env Prog (public)	Healthcare (private/public)	Forestry & Log (public)	Ag & Forestry (Private)	Manufacturing (private)	Construction (private)	Prof & Techl Serv (private)
30.8%	20.5%	4.0%	14.5%	8.6%	5.6%	13.2%	10.1%	9.6%	9.8%	4.4%	3.8%
$ 47,262	$ 42,168	$ 47,545	$ 43,470	$ 30,280	$ 61,708	$ 48,800	$ 56,772	$ 34,632	$ 46,279	$ 31,927	$ 33,268
Utilities (private)	Healthcare (public)	Utilities (public)	Admin of Env Prog (public)	Healthcare (public)	Forestry & Log (public)	Healthcare (public)	Forestry & Log (public)	Admin of Env Prog (public)	Utilities (private)	Healthcare (public)	Forestry & Log (public)
3.2%	1.6%	1.9%	5.6%	8.1%	2.6%	7.6%	10.1%	3.2%	1.9%	0.1%	2.3%
$ 113,047	$ 61,571	$ 57,987	$ 61,708	$ 55,113	$ 54,745	$ 61,076	$ 56,772	$ 52,478	$ 88,118	$ 65,907	$ 65,904
Information (public)	Healthcare (private)	Ag & Forestry (private)	Repair & Maint Serv (private)	Healthcare (private)	Prof & Tech Serv (private)	Construction (private)	Repair & Maint Serv (private)	Healthcare (private)	Information (public)	Utilities (public)	Ag & Forestry (private)
0.1%	2.4%	20.5%	0.8%	6.3%	2.5%	2.5%	1.2%	5.6%	0.6%	0.1%	3.7%
$ 19,358	$ 38,463	$ 42,168	$ 23,385	$ 28,512	$ 29,859	$ 24,679	$ 28,370	$ 31,978	$ 18,208	$ 21,459	$ 30,047

Data from Oregon Department of Employment qualityinfo.org (2016)

Appendix F – GO-STEM Progress

GO-STEM Progress and Alignment to Strategic Plan			
Priority	Strategies	Accomplishments (2014 – 2017)	Plans (2018)
STEM Awareness Pipelines and Pathways	Maintain a regional partnership with a variety of stakeholders in education and workforce that will identify existing resources and promote the work of regional STEM champions Invest in website resources, social media and other communications to reach educators, families and STEM professionals Promote participation in Oregon STEM Week Provide connections to STEM professionals for schools and students through Oregon Connections and an online regional map Include career connections in all STEM professional development and STEM student programs led by the partnership Align career learning opportunities within communities to provide a clear progression of career awareness, exposure, and preparation Collaborate with regional post-secondary partners to connect students and adults with STEM educational pathways Collaborate with EOU College of Business to connect STEM students and adults with entrepreneurial skill building opportunities	An Advisory Board with representation from seven counties including K-12, ESDs, post-secondary education, workforce board, STEM business and industry, CTE, Latino outreach, and community educators. Website resources include: Event Calendar, Lending Library, Regional Business Map, STEM Units, Real-life Math lessons, STEM Careers videos. Other communications: monthly newsletter during school year, presence on Facebook and Instagram. Created two sets of STEM Careers videos for use in classrooms during STEM week. Supported development of first GO Career Professionals course related to Health Careers. Applied for planning grant to develop Career Connected Learning opportunities in Harney, Morrow, Umatilla and Wallowa counties.	Publish monthly newsletter and updates to the online event calendar. Increase participation in regional map by 20% (30 original participants). Market regional map to schools through career centers, ESDs, newsletter and hub presentations. Promote the use of STEM careers video resources to increase STEM week participation by 6 sites (2016 n=2, 2017 n=6). Develop a social media campaign plan including Facebook, Instagram, and Twitter feed updates. Begin implementation by Fall 2018. Develop a short presentation to communicate the work and structure of GO-STEM. Provide promotional materials to partners and track delivery at five events. If awarded, develop plans for implementing the Career Connected Learning grant through OCF based on expansion and alignment of technology careers and connections.

Appendix F – GO-STEM Progress

Priority	Strategies	Accomplishments (2014 – 2017)	Plans (2018)
STEM Systems for Education	Work with school leaders and other education providers to develop a plan to align STEM and CTE opportunities, provide resources and expertise on STEM learning, and promote pathways and connections that lead to a progression of STEM workplace and academic skills Identify "most wanted" skills from STEM industry and develop a program for industry awards to top STEM school programs Support students to develop STEM opportunities and events in their schools and communities Build opportunities for students to develop leadership, critical thinking and problem-solving skills through STEM learning Build opportunities for students to take advanced course work in STEM subjects and earn early college credit aligned to educational pathways at EOU, BMCC and TVCC Provide high-quality STEM professional development for educators Provide support for K-12 math teachers to increase growth mindset learning models, real-life applications and student discourse about mathematical concepts Support the development of regional professional learning communities for teachers Track and share positive STEM attributes of each school district on the GO-STEM website Track and share success stories from local STEM industry hiring local students	Began meeting with school districts to establish interest in district-wide alignment of STEM and CTE learning opportunities and career awareness. Supported the development of Head Start STEM programs in Union, Baker and Harney counties. Supported the development of out-of-school STEM opportunities in Baker, Grant, Union and Wallowa counties through STEM Beyond School (SBS). Provided year-long STEM Unit development PD for 5th grade teachers from Baker, Grant, Morrow, Umatilla, and Union counties. Provided year-long Math in Real Life PD for secondary math teachers from Morrow, Umatilla and Union counties. Applied for continued funding to expand and develop regional PLCs. Partnered with Oregon Science Project (OSP) to develop NGSS teacher leaders in Baker, Harney, Umatilla and Union counties. Partnered with a variety of PD providers to bring one-day workshops to eastern Oregon teachers.	Seek and apply for funding and develop regional strategies to support school districts to align STEM and CTE learning opportunities and career awareness. Collaborate with statewide STEM hubs to identify and implement program to engage administrators in discussion and STEM and CTE alignment. Support expansion of STEM Head Start program to additional counties Support SBS sites to continue integrating STEM learning and seek to align sites with other opportunities within their communities. Continue development of regional math PLCs through Math in Real Life and increase administrator involvement. Partner with PD providers to bring one-day workshops to eastern Oregon teachers. Partner with OSP to connect regional educators with NGSS resources and local teacher leaders.

Appendix F – GO-STEM Progress

Priority	Strategies	Accomplishments (2014 – 2017)	Plans (2018)
Communicating Rural STEM Perspectives, Needs, Solutions and Opportunities	Develop and maintain a regional youth program for high school students that is coordinated with statewide efforts related to youth voice and leadership development in STEM Identify opportunities for students, educators and other partners to attend STEM events and share their perspective with audiences in their communities and around the state Host key annual events including a Summer STEM Camp and Dinner with STEM Pros Advocate for effective online options for rural and remote people to attend statewide meetings Participate in and lead statewide committees Share social media and newsletters with statewide audiences	Hosted 3 Dinner with STEM Professionals. Events in Baker, Umatilla and Union Counties. Partnered with Umatilla School District to host 2nd Summer STEM Camp for STEM Ambassadors (23 participants from 12 school districts in 5 counties). Led statewide STEM hub committees for Solar Eclipse and Youth Voice. Shared rural perspectives and supported teacher leaders from Math in Real Life to attend statewide meetings.	Lead statewide STEM hub committee on Youth Voice to develop consensus around a statewide youth program. Align regional youth program to statewide program. Seek funding to support implementation of youth program and STEM projects in their communities. Advocate for effective online options for remote participants to attend STEM Investment Council meetings. Support educators and partners to attend and present at statewide meetings.

Appendix G – Post-secondary STEM Degrees 2015-2016

School/Program	Under-graduate certificate	Associate	Bachelor
Eastern Oregon University			
Biochemistry			10
Biology			14
Computer and Information Sciences			8
Computer programming/programmer	0		
Web page, digital/multimedia and information resources design	0		
Health and medical administrative services			0
Fire Services Administration			44
Mathematics			5
Health and Physical Education/Fitness			37
Chemistry			3
BMCC			
Agricultural Productions Operations	5	6	
Animal Livestock Husbandry and production	14	13	
Crop Production	14	12	
Accounting Technology/Technician and Bookkeeping	14		
Computer and Information Sciences	11		
Construction Trades	2	0	
Electrical and power transmission installation/installer	0	0	
Electrician	0		
Civil engineering technology/technician		1	
Drafting and design technology/technician	1	0	
Engineering-related fields	0		
Dental assisting/assistant	12		
EMT Paramedic	0		
Medical Administrative executive assistant	7	4	
Medical office assistant/specialist	0		
Registered Nursing/registered nurse		17	
Veterinary/animal health technology/technician and veterinary assistant	0		
Criminal justice/safety studies	4	4	
Fire science/fire-fighting		0	
Diesel mechanics technology/technician	8	10	
Industrial mechanics and maintenance technology	0	0	
Mechanics and repairers	0		
Welding technology/welder	3		
TVCC			
Agricultural Business and Management	3	2	
Agricultural Economics		0	
Agriculture		0	
Agronomy and crop science		1	
Animal sciences		2	
Farm/farm and ranch management	4	0	
Horse husbandry/equine science and management	28	5	
Horticultural science		0	
Range science and management	36	0	
Soil science and agronomy		0	

Appendix G – Post-secondary STEM Degrees 2015-2016

Viticulture and enology	0		
Biology/biological sciences		4	
Accounting Technology/Technician and Bookkeeping	0		
Business/office automation/technology/data entry	4		
Management information systems	16	6	
Computer and Information Sciences	14	8	
Computer Science		2	
Carpentry/carpenter	22	0	
Engineering		5	
Drafting and design technology/technician	2	0	
Solar energy technology/technician		1	
Athletic Training/trainer		1	
Dental hygiene/hygienist		0	
EMT Paramedic	0		
Health/medical preparatory programs	0		
Licensed practical/practical vocational nurse training	0		
Medical Administrative executive assistant		5	
Medical radiologic technology/science – radiation therapist		0	
Medical transcription/transcriptionist		0	
Physical therapy/therapist		3	
Practical nursing, vocational nursing and nursing assistants		0	
Pre-dentistry studies		0	
Pre-medicine/pre-medical studies		2	
Pre-nursing studies		12	
Pre-pharmacy studies		0	
Pre-veterinary studies		1	
Registered Nursing/registered nurse		18	
Substance abuse/addiction counseling		2	
Criminal justice/ police science	1	4	
Criminal justice/safety studies		3	
Fire prevention and safety technology/technician	2	0	
Fire science/fire-fighting		2	
Mathematics		0	
Mechanics and repairers	0		
Natural resources/conservation		9	
Wildlife, fish and wildlands science and management		3	
Chemistry		1	
Geology/earth science		0	
Physics		0	
Welding technology/welder	45	12	
Airline/ commercial/professional pilot and flight crew	27	6	

2015-2016 data from NCES.ed.gov