

## Cover Page: CTE Revitalization Grant

APPLICATION COVER PAGE  
(Please Print or Type – All Fields Must Be Completed)

Project Name: Real Science Creating Real Industry Skills in CTE
Amount Requested: \$388,850

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	Participating High School or Middle School Name <small>(add additional rows as needed)</small>	Lead Contact Name	Grade Levels	Student Enrollment
1.	La Grande High School	Scott Carpenter	9-12	650
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

## **Application Narrative: Real Science Creating Real Industry Skills in CTE**

### **Project Abstract**

La Grande High School will use CTE revitalization dollars to provide legitimate, cutting edge, and essential regionally-specific scientific exploration to develop skills within CTE programs for high wage/high demand fields. In our Agriculture/Natural Resources Pathway, Oregon Department of Forestry, USDA, and local business Plantworks will collaborate to repurpose and expand greenhouses for research and development to improve reforestation success after wildland fires across Oregon, utilizing Biochar technology and other strategies. In our Medical Pathway, we will continue to implement internationally recognized Project Lead The Way curriculum and network with NEOAHEC, EOU, and local medical providers to build a fully articulated, science-oriented medical pathway well beyond standard CNA programs. Lastly, working with local higher education institutions and businesses, we will continue to secure and integrate curriculum and tools, like our new virtual welder, to engage more diverse students and provide equitable access in a fully articulated Mechatronics Pathway. In summary, we will seamlessly connect our curriculum to industry needs through the integration of legitimate scientific exploration that incorporate essential skills for students entering 21<sup>st</sup> Century industry.

Word Count: 175

## **Application Narrative: Real Science Creating Real Industry Skills in CTE**

### **CTE Revitalization Grant Vision**

La Grande High School (LHS) recognizes the expansion and growth of Career and Technical Education (CTE) programs as an essential component of regional workforce development. With no community college or vocational training center in our valley, students gain skills within high school, and then either pursue college/university or enter directly into the workforce. Local businesses, like Barreto Manufacturing, compete locally and internationally, and yet provide much of their training in-house, in part due to the lack of regional facilities to provide appropriate training. In the 2014-15 school year, we worked with Regional Solutions, Union County Economic Development, Eastern Oregon University (EOU), and the City of La Grande petitioning for state funds in the 2015-17 Biennium to expand LHS's new, bond-funded CTE building to become a regional workforce training center. While the project has not yet been funded, we continue to work with these agencies and have expanded the conversation to local businesses so that LHS can meet this need regardless of additional state funds.

In discussions with local agencies, businesses, community members, and students, we have identified high wage/high demand fields both locally and statewide and have worked to move curriculum and programming to meet those needs. School administration has not shied away from making changes to existing CTE programs, but has embraced the idea that CTE programming must respond to and foresee workforce needs to maintain a strong state and local economy. CTE Advisory Committee members have aided our progress by providing expertise to curriculum changes, identifying essential skills, donating materials, and providing valuable insight and experiential learning opportunities that will make CTE programs much more effective for students.

Adjustments to CTE programming are focused on the integration of identified, requisite workforce skills and innovative curriculum that challenges students to become critical thinkers. In 2013, we surveyed our community about what adjustments were needed to revitalize CTE programs. Overwhelmingly, responses indicated the need to find ways to address the medical field, as La Grande is the hub for health services in Eastern Oregon. Construction trades, including welding, were also viewed as a high priority by many respondents.

As a result of ongoing dialogue with stakeholders, a new Medical Pathway using internationally recognized Project Lead The Way (PLTW) curriculum was implemented. PLTW curriculum is highly innovative, grounded in science inquiry, and requires critical thinking to solve hypothetical medical issues. Students report the classes to be highly engaging, “their favorite class,” and want to see the program continue to be expanded. We are currently partnering with Grande Ronde Hospital (GRH), Oregon Tech/Moda Dental, Northeast Oregon Area Health Education Center (NEOAHEC) to meet these needs and develop real-world opportunities for students outside the classroom. In addition, we have integrated Paxton/Patterson Construction modules within the Woods curriculum. This curriculum focuses integration of industry tools and experiential learning through hands-on demonstration of real-world skills. With implementation in the 2015-16 school year, we are excited to see the student response to this new curriculum.

LHS has striven to maintain quality CTE programs even during periods of budgets shortfalls. Currently, LHS offers a wide variety of CTE pathways including: Agriculture, Business, Woods/Construction, Forestry/Fire School, Medical (added 2015), Culinary Arts, and Welding/Fabrication. While various courses in these areas were maintained, a decade of budget cuts made them isolated singleton classes within our master schedule. Since 2013, we have

bolstered and reorganized our courses into cohesive pathways. Central to these pathways, we have incorporated required internships/job shadows with more than twenty community partners, required participation in recognized clubs, and successful completion of 2-3 course credits within each pathway. Students who complete a pathway earn an endorsement on their transcript and diploma, also becoming eligible for our local business-funded pathway scholarships.

In November 2014, LGSD voters passed a \$32 million bond. Support for the CTE building included in the bond was overwhelming – our community recognized the critical need for investment in vocational education, training, and skills. Design is ongoing, and construction begins in May 2016 on the new \$1.9 million CTE building. The combination of redesigned or new pathways, community partnerships, a new building, and the possibility of CTE revitalization dollars provides a critical mass of local and state investment that will create a dramatic and sustainable shift in CTE opportunities for all learners.

CTE revitalization funds will provide a catalyst for high-quality curriculum, innovative technologies, and new opportunities outside the classroom for all students. This includes:

- Medical: In 2015, we purchased the first course in the PLTW Medical Pathway, and have seen great results with our special needs and female students with high-quality hands-on science within that career field. The PLTW curriculum has quickly and highly engaged our students. This grant funding will allow us to purchase the remaining two years of curriculum, and medical simulation tools that we and NEOAHEC will be able to access in regional trainings for participating schools. NEOAHEC trainings are online, and students will help demonstrate the skills with these simulation tools and curriculum to a regional audience.
- Agriculture: In our Agriculture Pathway, we will update our curriculum to match industry standards through the purchase of Curriculum of Agricultural Science Education (CASE)

curriculum, along with redesign and expansion of our greenhouses to better utilize cutting edge science using Biochar technology. This also allows special education students to grow, sell, and harvest produce for Culinary Arts Pathway and to the local community.

- Mechatronics: A new virtual welder – acquired through our new partnership in the Intermountain ESD (IMESD) Perkins Consortium – will allow students who may have avoided welding in the past, especially female and special needs students, to successfully participate with confidence and without risk or fear of failure. This grant will allow us to expand these types of acquisitions, while providing the funds to modernize the equipment in our new building to create an inviting, open, and safe place for all students to work.

Our overarching goal is to expand the depth of our programming and opportunities for students in these pathways through cutting-edge, science-based curriculum, experiential learning, while increasing access points in and outside the classroom for all learners.

### **Partnerships**

La Grande High School has a proud tradition as an active member of the La Grande community. In 2014, we redesigned CTE classes into coherent pathways, and hired a full-time CTE Coordinator to connect students to local businesses and agencies to provide real-world experience within their CTE coursework. That year, we had nearly 25 businesses open their doors to over a third of our graduating class to provide these job shadow/intern experiences in various pathways. From those partnerships we created a scholarship funded with local donations from community partners. Last year, five students were awarded Pathway Scholarships to support them in their post-secondary vocational training, and the program has continued to grow in the 2015-16 school year with more students and partners participating. Additionally, the passage of our district bond supports construction of a new CTE building (\$1.9 million direct

building budget) is a strong indicator of the commitment and partnership the district and community have in supporting CTE.

CTE Pathway partners and advisory committee members work with teachers and administrators to identify individuals and businesses who had yet to be invited to work together to identify improvements within CTE. Those brought to the table were told the focus of this grant application would be to make the relationship between curriculum and identified industry needs seamless through the integration of legitimate scientific explorations that will provide essential skills for students entering 21<sup>st</sup> century industry. Business and agency partners worked directly with their respective CTE teachers to detail necessary curriculum innovations, propose experiential learning opportunities, and workforce connections in the community for all learners. As teams worked, it became apparent that scientific inquiry and problem solving were key components of the Mechatronics, Agriculture, and Medical Pathways discussions. It also became apparent that hands-on skills were essential to all the projects from these same groups. All of the groups agreed an essential component of CTE and the various pathways was to train the hands as well as mind. The following paragraphs detail specific projects and outcomes.

In the Medical Pathway, partnerships are working to create a new model for providing medical services training for high school students. The school district spent the last two years researching various curriculum and methods of delivery and has chosen to work with PLTW, an internationally recognized STEM education provider. PLTW curriculum, unlike other Certified Nursing Assistant (CNA) programs, focuses on scientific exploration, career exploration of multiple medical fields, and uses professional learning communities to provide annual updates and training to teachers. To date, student feedback has been extremely positive, and instructors report the available professional development to be the most dynamic and relevant they've

experienced. This grant funding will help secure the remainder of the courses and equipment needed to complete the pathway. NEOAHEC has committed to help us integrate their Future Health Professionals of Oregon (FHPO) curriculum within our classes, so that students can earn college credit, access medical placements outside of school, and receive fundamental skills in the medical field. Additionally, NEOAHEC has applied for a Ford Family Foundation Grant to help us network with GRH, EOU, and other medical services to provide students multiple opportunities to learn outside the classroom and develop a clear pipeline from the high school to university and/or employment with local medical providers. Lastly, we will secure and integrate various simulation technologies within the medical field, allowing students to safely practice medical techniques, while granting access to NEOAHEC or GRH to our facilities for their courses or trainings with state-of-the-art equipment. Rather than simply proposing a CNA pathway, we are exposing students to curriculum and experiences that lend themselves to a wide-range of medical careers within the high wage/high demand medical field.

In June 2014, La Grande High School led the charge to create a new regional professional learning community among Agriculture teachers to improve student learning. Since then, Agriculture teachers, from across the region, have met monthly to identify strengths and deficiencies in their programs, review student learning data, and make curriculum changes. One of the key deficiencies that all of these teachers indicated in their notes was that students, across the region, were weak in Plant Sciences, and they agreed efforts needed to be made to improve in this area. All agriculture teachers in our professional learning community acknowledged that the CASE curriculum is the best, much like PLTW, in providing science-based agricultural curriculum to fill this gap in learning. As part of our CTE revitalization plan, La Grande High School will purchase CASE curriculum to strengthen instruction in Plant Science and Bio-



Technology. Additionally, La Grande High School will work with partners to transition two large greenhouses into three medium-sized greenhouses to better meet student and community needs in the area of Agriculture/Forestry.

LHS' special education department and our Vocational Rehabilitation Coordinator will partner to provide special education students the opportunity to integrate with mainstream students to explore crop production, marketing, and sales. Produce will be managed and grown by students, marketed by these students, and sold to the Culinary Arts Pathway and community members. These students will take a leadership role in the greenhouse focused on community gardening and be involved with the other projects to the degree they can. This is a significant way for special needs students, especially, to work with their peers to develop job-related skills and interact with our community in meaningful and productive ways.

In partnership with the Oregon Department of Forestry (ODF) and Plantworks we will use a second greenhouse to explore scientific techniques that could boost survival rates of pine seedlings. Currently, ODF has a shortage of seedlings to plant in regions burned during summer wildland fires. Additionally, the survival rate of these seedlings is reported to be only 2.5% a year after they are planted. We will work with Plantworks and ODF to research the impact of Biochar and other growing techniques to improve this survival rate. The local ODF office will provide seeds and materials, and is also seeking grant funds to support this greenhouse and our efforts to improve the region's reforestation efforts.

The last greenhouse will be an extension of CASE curriculum and become lab space for experimentation in splicing, cloning, hydroponics, and the creation of new varieties of flowers. For our already focused agriculture students this is an opportunity to explore the field, do research, and communicate new learning. Additionally, Plantworks, will use this greenhouse as

an opportunity to share their 30 years of specialized experience with students by exploring a variety of agricultural processes and providing mentorship for various student projects.

Our last identified area for revitalization is the Welding/Fabrication Pathway. Since budget cuts starting in 2002, many of the courses within the pathway were discontinued or combined. Research by Regional Solutions and BMCC and input from the community indicate that Mechatronics (a combination of drafting, welding, and engineering) is a growing field needing strong regional support. BMCC district voters recently passed a bond to innovate their vocational offerings, with Mechatronics identified as one of three redesigned pathways for students in their college.

Working with Cross L Welding, Barreto Manufacturing, and BMCC, we have identified what courses (Design, Welding I, Welding II, and Intro to Engineering) will better serve students in this pathway. With partners' input, we have identified tools to update welding/mechatronics shops in the new CTE building. Additionally, our partners' wealth of experience helps us continue to identify technology that would help underserved students feel comfortable welding. For example, they encouraged the purchase of a water-cooled tig welder. The handle stays cooler, and the smaller torch is a better fit for a small hand. This grant funding will allow the purchase of this and other identified technologies to outfit the welding shop. Cross L Welding and Barreto Manufacturing have committed to provide equipment, assorted welding supplies, and the ability to have students work with them to design and build, powder coat, and install new welding booths for our new facilities. Additionally, Cross L Welding and Barreto have agreed to provide additional instruction to students outside the classroom to extend learning, provide internships/job shadows, and share expertise with our teacher as classroom consultants. They see an immediate and ongoing need for welders in the region and want to see our program grow.

Lastly, BMCC has committed to articulate credit with Mechatronics courses, and is working with us to lobby Union County to re-instate funding by the county for renewed operations. The City of La Grande has pledged their support to bring BMCC back to La Grande, and we will meet with county commissioners beginning in November 2015 to lobby for this program. With re-instated funding, BMCC will use LHS CTE facilities to teach adult education classes to anyone in our valley, effectively reducing travel barriers to building workforce skills in the region.

While this grant supports multiple projects, we feel strongly that we have the right partners at the table who have made significant commitments to these programs because they see a critical need both in the local community and region for revitalization of CTE. We recognize that the combination of new facilities, our work with local/regional partners, and the possibility of CTE Revitalization funds provides a critical mass to make these programs dynamic. All proposed projects connect directly to our overall vision of using real science, teaching industry-level skills, and engaging all students as the foundation of all CTE courses.

### **CTE Programs of Study**

LHS has limited CTE programs of study that meet minimum requirements, most with few completers. Currently, programs of study exist in Culinary Arts, Business, and Agriculture Pathways. These pathways have CTE licensed teachers, are articulated for college credit, and offer students the opportunity to participate in leadership clubs (i.e. FBLA, FFA, and FCCLA). However, the absence of program of study completers indicates the need to make critical adjustments to these programs of study to increase student engagement, as well as providing learning opportunities later in the pathway that incentivize students to complete the pathway. Our focus in the Agriculture Pathway is to innovate the curriculum to make it highly engaging and add experiential learning projects with partners (i.e. reforestation greenhouse, community

garden, experimental plant science, etc.) in order to make completing the Agriculture program of study a highly sought-after achievement.

Currently, we do not have programs of study fully articulated for Mechatronics and Medical Pathways. Through our bond and various other efforts, previously outlined in this application, we will be able to create CTE programs of study in these areas as we work to secure teacher licensure in these areas, articulate credits, offer a complete course program, and effectively network with our community. Students are highly engaged in these areas, and offering programs of study will be essential and rather easy as we reformat two welding courses into a complete Mechatronics Pathway and purchase the remaining courses in the Medical Pathway and integrate with NEOAHEC and EOU. In short, creating these programs of study will increase our number of completers, increase Perkins funding, and make our CTE programs more sustainable.

To boost effectiveness in CTE and to better meet students' needs, we moved from the Region 13 Perkins Consortium to the IMESD Consortium in January 2015. While Region 13 served our programs well, the move to IMESD Consortium has allowed us to focus on underserved student populations. Work in this consortium has secured a virtual welder, allowing us to better serve students who may be initially fearful of welding. These students now have an opportunity to experience welding virtually, and then have less fear when using a real welder for the first time. We will continue to work with IMESD to bolster programs of study and focus on underserved students.

## **High Wage and High Demand Occupations**

Industry research focused on high wage/high demand fields indicates that this proposal is on target and will result in students having far better opportunities post-high school in Mechatronics, Agriculture/Forestry, and Medical Sciences.

OregonBusinessPlan.org (2015) indicates that manufacturing companies in Oregon are facing significant challenges as, “our workforce is aging and exhibiting significant turnover in the near future.” BMCC, in connection with Greater Eastern Oregon Region of Regional Solutions, has identified Mechatronics as a significant growth area in our region, and one of the reasons BMCC’s recent bond measure included a focus in this area. Conversations with Boise Cascade, Cross L Welding, Barreto Manufacturing, and others indicate our local population of welders and engineers are aging and need a new generation of trained employees. The average salary in this field in 2011 was just over \$60,000 which makes it one of the better paying industries in Oregon (Oregonbusinessplan.org, 2015).

According to Oregonbusinessplan.org (2015), Oregon is a forestry state with 48% of Oregon’s landmass covered in forests. Oregon exports in timber “increased 50% from 2009 to 2011” and is a statewide industry (Oregonbusinessplan.org, 2015). Regional Solutions - Greater Eastern Oregon Region set priorities to “improve forest health” and to “develop technology for biomass utilization” (Regional Solutions Office, 2015). Additionally, La Grande is a hub in Oregon’s forestry economy with many LHS graduates spending summers fighting wildfires or doing technician level work during their university studies. Our reforestation project with Plantworks and ODF will allow La Grande High School to help Oregon develop a pipeline to better meet reforestation needs in Oregon, and to conduct research to see if Biochar, a biomass derivative, will lead to a healthier Oregon forest.

Lastly, Oregonbusinessplan.org (2015) indicates that the Bioscience Cluster is one of the fastest growing industries in Oregon with a 21.9% growth in the industry from 2005-10. With an aging population, Oregon needs, and will continue to need, individuals trained to meet its growing healthcare needs. Again, La Grande is a medical hub with GRH, OHSU Extension, EOU Nursing program, MODA Dental Training Facility, and scores of local businesses and physicians' offices. In visits with all of these, they have indicated that the field is continuing to grow and that they are searching for qualified graduates for their programs where students have jobs prior to graduation. This is certainly a high wage and high demand field!

### **Project Outcomes (See Table D)**

#### **Equity**

To provide greater equity, teachers have used their professional learning communities to design specific curriculum meant to help recruit underserved students (i.e. females, minority, and special education students). A focus of CTE professional learning communities in the coming year will be to work with special education teachers to make curriculum more accessible to students (Outcomes 2.2, 2.3, 2.4). Additionally, specific projects like the community garden greenhouse, reforestation greenhouse, and design class (Outcomes 1.4, 2.2) will attract underserved groups, especially females, into CTE programs, as surveys have indicated a keen interest in these areas. Lastly, new technologies such as virtual welders and the commitment to continue to search out these technologies will help reduce fear, help students access CTE courses, and provide all students a chance to explore many career fields while in high school (Outcomes 2.3, 5.2).

While curriculum, programming, and technology provide access points for students to engage in CTE courses, what will retain students is their ability to participate in meaningful

partnerships and on-site work experience. Students might feel comfortable in the classroom, but will not pursue a career if they do not feel they can adequately integrate into that field. We will continue to work diligently with local partners and agencies to get underserved students into job shadows or internship experiences. With the addition of a full-time vocational rehabilitation coordinator in our district, we can now facilitate even severely handicapped special education students' ability to access employment opportunities with a job coach or other personnel. Last year, we placed over 30 students with business partners, and students came back with positive feedback about their experiences. By 2017, we plan to have students participating in CTE to a greater degree, with the majority having engaged in real-world career experiences, thereby helping retain them in the program and later entering the field (Outcomes 1.1, 1.2, 1.3, 1.4, 4.2).

### **Diploma Connections**

LHS currently offers a La Grande Diploma (26 credit), State of Oregon Diploma (24 credits), State of Oregon Modified Diploma (24 credits), and the State of Oregon Extended Diploma (12 credits). Each of these diplomas require 1 to 2.5 credits of CTE courses in order to graduate from La Grande High School. However, for those earning the Extended Diploma, an art or choir class has usually been the realistic option for CTE credits needed to graduate. With new technologies previously discussed, accessibly integrated projects (i.e. Community Garden, etc.), and effective collaboration between special education and CTE teachers, we are confident that more students earning this diploma will actively participate in CTE courses and have the opportunity to work with skilled workers from local businesses/agencies both on-campus and off. It is important to note that employers can be reluctant to hire students qualifying for an Extended Diploma because of the severe physical or mental impairments they face. It takes time for employers to get used to, gain empathy for, and develop a commitment to employ these

students. By focusing on these students, we will better meet their employment needs and facilitate their entry into a job after high school (Outcomes 1.1, 2.1, 2.3, 2.4, 5.1).

### **Sustainability**

Sustainability is a core concept in this grant application. LHS proposes no new staff or funding any level of staffing or benefits with grant funds, because we need programs facilitated by the grant to persist beyond the grant cycle. LGSD is committed to staff appropriately to make CTE programs as sustainable as possible. What this grant does ask for is investment in integrated experiential learning, new technologies to innovate current curriculum, and support for our efforts to incorporate real science into Agriculture and Medical Pathways through the purchase of STEM aligned curriculum. These purchases are relatively easy to maintain after their initial purchase. In addition, commitments of supplies (i.e. steel supplies, seeds, biochar, etc.) from local agencies and businesses will reduce these costs significantly. LHS's CTE Advisory Committee will regularly review the costs of these programs during and after the grant and provide feedback about how we may better fund these programs (Outcome 5.2). Specific strategies to sustain this grant are:

- Recruitment of BMCC back to La Grande in the new facility will result in a cost share of technology and supplies in Mechatronics facilities and reduce district costs.
- ODF commitment to donate seeds, biochar, and materials to grow pine seedlings in greenhouse.
- The Clayton & Loree Fox FFA Enhancement Foundation has committed at least \$4,000 annually to support the costs of CASE curriculum after the initial purchase.
- Local businesses, like Barreto Manufacturing, have committed to donate supplies, provide teacher training at their facilities, and support work experience opportunities for students.



- Increased CTE program of study completers will increase Perkins funds.
- Recent legislation (i.e. HB 3072) will help provide additional funds for CTE programs when students complete 3 or more credits in a Pathway.

These and other ongoing efforts will offset some of the costs associated with our innovation and expansion of CTE at La Grande High School and make programs sustainable.

### **Communication**

Innovations to CTE pathways, proposed in this grant, will be advertised through local media outlets, LHS counseling office, by word of mouth, and, most importantly, through our CTE Coordinator. In 2014, administration hired a full-time CTE Coordinator after we had re-organized CTE courses into formal pathways. We needed someone on staff who would communicate with students about CTE Pathways, help them secure a job shadow/work experience opportunity in the field, and help them work towards Pathway completion and graduation. The district funded this position, and last year we had 33 pathway completers in our first year's work. From May to Aug. 2015, LHS registered 62 new students beyond anticipated numbers. We attribute some of this to the Coordinator's work and a summer marketing campaign for CTE at LHS. Many homeschool and online students asked how they could participate in CTE opportunities at La Grande High School. We are confident that LHS will continue to see increases in enrollment (LGSD projections show LHS enrollment increasing for at least another 3 years) and more students actively pursuing CTE classes. This year our CTE Coordinator is already scheduled to be at Parent-Teacher Conferences, Chamber of Commerce, Lion's Club, and other community organizations to offer parents, students, and community members the chance to participate in quality programming that meets employment needs in our region by building real science and real skills into everything we do in CTE.

## **Bonus Narrative: Real Science Creating Real Industry Skills in CTE**

### **Out of School Time Programming**

Securing the CTE Revitalization Grant is essential to providing adequate educational opportunities outside the school day. In our Mechatronics Pathway discussions, we have garnered commitments from Blue Mountain Community College (BMCC) to offer dual credit in a new drafting course and retooled welding class based on securing technology that would support these two classes. Currently, we have very old single phase welders that will not allow us to secure dual credit. Our grant proposes the purchase of new technology that will allow for dual credit and be at industry standard. When guest instructors visit (see commitment letters from Barreto Mfg. and Cross L Welding) to provide additional instruction during and after school, this instruction will be effective and helpful in building relevant skills with relevant equipment. Additionally, if we are able to secure the right technology for dual credit, it makes bringing BMCC back into La Grande economically realistic for the community and means adults and students will have access to college credits and instruction outside the school day in our facility.

In the Medical Pathway, our partnership with NEOAHEC will facilitate ongoing medical training from their agency to our community (i.e. students and adults) and to other schools. Currently, NEOAHEC operates out of outdated facilities on EOU's campus. Virtually all of their trainings/curriculum are online, but in a recent review of the curriculum they have identified several areas they would like to update. In discussions with them, we are pursuing a plan where they use our Medical Pathway students, curriculum and simulation tools (grant funded), and new facilities (bond funded) to update their current curriculum/training suite. NEOAHEC and local partners have committed to use our facilities to during the school year and summer to provide ongoing training and certifications to students and adults that were not as readily available

previously. Additionally, trainings will be streamed live or available online to other high school medical programs or be accessible through NEOAHEC website. Again, this is a great opportunity made available both locally and regionally, if we are able to secure funds to acquire industry-relevant tools for students, adults, and professionals.

### **Focus on Regional, Statewide, or Systemic Changes**

To date, most districts have pursued medical programs of study that focus on CNA licensure and have a limited focus on the medical field in general. Our proposal articulates a medical pathway that is broad and challenges students to explore a wide-range of career fields through both quality, science-based curriculum, simulation technology, and community partnerships that provide students multiple opportunities over their four years to job shadow/intern and explore various medical occupations in greater depth. CNA employment opportunities are not typically high wage positions that can sustain a family over time, and schools can quickly glut the market if they are all producing CNA licensed students. Our partners in the medical field have identified that students and future employees need a broader array of experiences and training. To accomplish this for LHS students, we will work towards a more comprehensive Medical Assistant preparation, giving these students a direct pathway to employment or further certifications without the restrictions of CNA certification. Our partnerships with Eastern Oregon University, NEOAHEC, Grande Ronde Hospital, and Oregon Tech Dental Hygiene Program will allow us to provide dual credit and Medical Assisting training to meet workforce needs on top of a solid foundation of PLTW science-based curriculum. We believe the format of STEM-based curriculum paired with simulation technology, dual credit, Medical Assisting trainings, and quality job experiences will provide a model that other districts and/or regions can duplicate and see tremendous results.

Lastly, our region's greenhouses are primarily used as a vehicle to secure funds for programs rather than a laboratory to extend learning and make a regional difference in the environment. Every year, in May, parents and community members have the opportunity to visit one of multiple school districts that sell an assortment of potted plants for Mother's Day and to beautify their homes. Generally, FFA programs sell these plants and use the funds to help sustain their program. In our model, we will use our three greenhouses to provide a community garden, growth of pine seedlings to reforest lands burned by wildland fires, and to house innovative methods in exploring plant sciences. The annual regional wildland fires will continue to supply a significant and continuing regional need for pine seedlings on an annual basis. Our proposed format, created in conjunction with Plantworks and Dept. of Forestry, makes greenhouses more sustainable in schools because 100% of our pines seedlings will be sold by agreement for a specific regional need. The shortage of pine seedlings is at critical levels given the large wildfires over the last decade. Additionally, the community garden greenhouse will provide fresh vegetables to our community to our Culinary Arts program, staff, and community members. We have already had significant interest in providing access to fresh produce, and are excited to add a business component to our greenhouse that isn't essential to the continuation of the project. Revitalization of our greenhouses will offer a more sustainable and responsive program to the health and timber needs of the state and become an active participant in the supply pipeline of these essential market.

## Outcomes and Measures: CTE Revitalization Grant

### Project Outcomes and Progress Measures

Identify at least five outcomes and their measures that describe what will be achieved or accomplished with the help of this project. Outcomes should be measurable, manageable, and meaningful. The measurement of progress and expected results constitute your evaluation plan.

**Project Outcome** – These should focus beyond the life of the grant funds and be measurable, manageable, and meaningful. There must be at least one outcome in each of the five areas. For ease of reference later in the application, you may wish to number each outcome.

**Progress Markers** – Include specific methods you will use to measure short-term progress toward the outcome. Measurement can be qualitative and quantitative. More than one measurement can be used in each outcome.

**Expected Results** – Include specific results you would expect for the progress measurements if the project is successful. These should be realistic and ambitious.

<b>Area 1 - Improved and sustainable partnerships with business, industry, labor, and educational providers.</b>		
<b>Project Outcome</b>	<b>Progress Markers</b>	<b>Expected Results</b>
1.1 La Grande High School will have an extensive network of local and regional partners with whom to place students in job experiences, obtain needed instructional expertise, and maintain access to needed equipment and materials.	<ol style="list-style-type: none"> <li>1. CTE Coordinator will track numbers of community partners, student placements, and guest instruction opportunities and report quarterly to administration and CTE Advisory Committee.</li> <li>2. Growth in CTE partnerships will be reported annually at our CTE Partners Banquet where they are recognized.</li> </ol>	<ol style="list-style-type: none"> <li>1. Current active partners for student placement number from 25 to 50.</li> <li>2. Guest instructors and those providing industry-relevant training will number 20.</li> <li>3. Cross L Welding and Barreto Manufacturing will staff and provide trainings once to twice a month after school to students and adults at LHS.</li> <li>4. Local medical partners will provide job shadows/internships for 5-10 students annually.</li> <li>5. Plantworks staff will communicate at least once per week with students working in greenhouse projects.</li> </ol>

<p>1.2 Medical Pathway will be fully integrated with NEOAHEC, provide increased job experiences with local industry partners, and provide dual credit opportunities.</p>	<ol style="list-style-type: none"> <li>1. Notes of quarterly meetings between NEOAHEC, LHS, and local medical providers.</li> <li>2. Scope and Sequence documents will be accessible on Google Docs and progress monitored regularly towards full integration between two curriculums.</li> <li>3. By May 2016, students will have access to college credit in pathway.</li> <li>4. By January 2017, student will be earning college credits in pathway.</li> <li>5. By the end of 2015-16 school year 15% of students will be placed in job experience.</li> <li>6. By end of 2016-17 school year 30% of students will be placed in job experiences.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fully articulated scope and sequence for Medical Pathway between the PLTW curriculum and NEOAHEC curriculum by the end of 2017.</li> <li>2. 30% of students in pathway will be placed in a job experience with industry partners.</li> <li>3. Dual Credit Articulation agreements will be in place for Medical Pathway through NEOAHEC and Eastern Oregon University by May 2016.</li> </ol>
<p>1.3 Mechatronic Pathway will be integrated with BMCC for dual credit and adult education opportunities.</p>	<ol style="list-style-type: none"> <li>1. In 2015-16, LHS will add Mechatronic Pathway to LHS Curriculum Guide as official pathway.</li> <li>2. In 2015-16, LHS will get articulation agreements in drafting and welding courses.</li> <li>3. In 2016-17, students will earn credit from pathway through BMCC.</li> <li>4. By Dec. 2015 County will approve/deny re-instatement of BMCC funding.</li> <li>5. In 2016, LHS will work with BMCC, City of La Grande, and County Commissioners to outline BMCC program in Union County</li> </ol>	<ol style="list-style-type: none"> <li>1. Mechatronic Pathway will increase credits offered from 0 to 6 in the next two years (i.e. Drafting and Basic Welding)</li> <li>2. By 2017, La Grande, Union County, City of La Grande will have created agreements that allow BMCC back into Union County and offer at least one class for adults in our valley.</li> </ol>

	6. By May 2017, BMCC courses in Union County will become active in providing adult education courses.	
1.4 Agriculture/Forestry Pathway in connection with partners become a fixed part of the pipeline of growers supplying Department of Forestry with pine seedlings.	<ol style="list-style-type: none"> <li>1. In 2016, the Forestry Greenhouse will come online.</li> <li>2. In 2016-17 school year, students will raise their first batch of seedlings using Biochar.</li> <li>3. In 2016-17, all students in pathway will have access to at least one opportunity to access local forests.</li> </ol>	<ol style="list-style-type: none"> <li>1. Dept. of Forestry will purchase 100% of our seedlings, and use students to help plant.</li> <li>2. 100% of our students in pathway will have direct contact with the forest and Dept. of Forestry personnel, at some point, during their classroom experience.</li> </ol>
1.5 Students and partners will present research on reforestation/seeding techniques at a conference by the end of 2018 and annually thereafter.	<ol style="list-style-type: none"> <li>1. Greenhouses will come online in 2016-17 school year.</li> <li>2. Seedlings will be grown by students in 2016-17 school year.</li> <li>3. Students will use a wide range of techniques and generate weekly reports on progress of seedlings.</li> <li>4. Student data will be compiled and shared with Department of Forestry and local partners in May 2017.</li> <li>5. Dept. of Forestry and LHS will work to publish student research data on reforestation techniques.</li> </ol>	<ol style="list-style-type: none"> <li>1. Students will present or publish with partners at least one forestry conference or in an industry journal by the end of 2018.</li> </ol>
<b>Area 2 – Improved student access to CTE programs of study with particular attention to historically underserved students.</b>		
<b>Project Outcome</b>	<b>Progress Markers</b>	<b>Expected Results</b>
2.1 LHS will increase underserved students enrolled in CTE courses by 2017.	1. Progress on goal tracked quarterly by CTE Coordinator based on SchoolMaster Data.	1. LHS will increase the number of underserved students (i.e. female, special education, and minority students) in pathways by 25%.

<p>2.2 LHS will improve facilities in Agriculture/Forestry, Welding, and Medical Pathway to better help underserved students access curriculum/skills.</p>	<ol style="list-style-type: none"> <li>1. Construction of new building will meet code for ADA, and designs will demonstrate floor plan that provides safe facilities for all learners to work or observe.</li> <li>2. Phase I – New Mechatronics/Welding facilities completed for 2016-17 school year (Bond).</li> <li>3. Phase II – CTE Building Completed in Spring 2017 (Bond).</li> <li>4. Greenhouses moved, installed, and equipment installed to start planting in 2016-17 school year.</li> </ol>	<ol style="list-style-type: none"> <li>1. New CTE building/facilities will be 100% accessible to all students by September 2017.</li> </ol>
<p>2.3 LHS will invest annually in technology/equipment/tools that will help underserved populations better access programs as identified by CTE Advisory Committee.</p>	<ol style="list-style-type: none"> <li>1. LHS will document quarterly CTE Advisory Committee meeting minutes.</li> <li>2. LHS will ensure through purchase order that annually identified technology, equipment, tools are purchased.</li> <li>3. Enrollment data in pathways will document annual improvement in underserved populations enrolling within CTE programs.</li> </ol>	<ol style="list-style-type: none"> <li>1. Each pathway will annually identify and purchase at least one new piece of technology/equipment/tools to boost underserved student access to the pathway.</li> </ol>
<p>2.4 CTE and Special Education will work together to create curriculum to help highly impacted learners access CTE opportunities.</p>	<ol style="list-style-type: none"> <li>1. In 2015-16 special education teachers will be invited to participate on the CTE Advisory Committee.</li> <li>2. In 2016-18 special education teachers will work in PLCs with CTE teachers to develop 2-4 experiential learning opportunities in each pathway</li> </ol>	<ol style="list-style-type: none"> <li>1. By 2018, all pathways will develop at least one experiential learning opportunity for highly impacted special needs students per quarter.</li> </ol>



	3. By 2018, highly impacted special needs students will participate, at an appropriate level, in CTE programs designed to meet their needs and expose them to industry tools.	
<b>Area 3 – Increased rigor in technical and academic content align to diploma requirements, industry-recognized technical standards such as the Oregon Skill Sets, and employability skills.</b>		
<b>Project Outcome</b>	<b>Progress Markers</b>	<b>Expected Results</b>
3.1 All Agriculture/Forestry classes will be CASE certified classes able to support dual credit.	<ol style="list-style-type: none"> <li>1. Feb. 2016 purchase orders will prove order of curriculum.</li> <li>2. March-June 2016, teacher training secured for CASE curriculum.</li> <li>3. 2016-17 full implementation of CASE curriculum.</li> </ol>	1. 100% implementation of CASE curriculum for the 2016-17 school year.
3.2 All Medical Pathway classes will be Project Lead the Way STEM-certified courses.	<ol style="list-style-type: none"> <li>1. Feb. 2016 purchase orders will prove order of PLTW Human Body Systems curriculum.</li> <li>2. June-July 2016, teacher training secured for PLTW course.</li> <li>3. 2016-17 implementation of two courses in medical pathway curriculum.</li> <li>4. Feb. 2017 purchase orders will prove purchase of final PLTW course, Medical Interventions.</li> <li>5. June-July 2016, teacher training secured for PLTW course.</li> <li>6. 2017-18 Implementation of full pathway with all three courses active.</li> </ol>	1. 100% implementation of PLTW curriculum for the 2017-18 school year.
3.3. All Mechatronic course scope and sequences will be approved by industry partners and be able to support dual credit.	1. Winter 2016, work to create new Mechatronics Pathways in curriculum guide for 2016-17. Meet with CTE	1. 100% articulation for Beg/Int Drafting (DRF112) through BMCC, and Welding (WLD111) by 2017-18 school year.

	<p>Advisory Committee, BMCC, and counselors to complete.</p> <p>2. Spring 2016 visit with BMCC instructors about curriculum requirements to articulate in Drafting and Welding.</p> <p>3. Fall 2017 complete articulation agreements for Drafting and Welding courses.</p> <p>3. Fall 2017 official Mechatronics Pathway Program of Study submitted to IMESD for Perkins.</p>	<p>2. Optional articulation agreements in Industrial Safety (IAT131) and Intro to Mechatronics (IAT109) completed for 2017-18 school year.</p> <p>3. Mechatronics Advisory Committee final approval of Mechatronic Pathway complete curriculum by May 2017.</p> <p>4. Submitted Mechatronics Program of Study for Perkins funding in 2017-18 school year.</p>
<b>Area 4 – Increased student awareness of career opportunities through exposure to employers.</b>		
<b>Project Outcome</b>	<b>Progress Markers</b>	<b>Expected Results</b>
4.1 Students will gain greater exposure to career fields in CTE Pathways through integrated and updated course curriculums.	1. Student grade reports and writing tasks will indicate student exposure and research to career fields.	1. 100% of students will be exposed to employment options in every unit of study using CASE/PLTW curriculum.
4.2 Students will be exposed to employment opportunities through ongoing partnerships with local employers in all of our CTE programs.	<p>1. LHS Calendar will indicate field trips to local partners (i.e. Barreto, Plantworks, etc.).</p> <p>2. CTE Coordinator tracking documents will indicate students completion of internships, job shadows, or formal employment during enrollment at LHS.</p>	1. 100% of students will have contact with local employers annually through field trips, job shadows, internships, or formal employment.
<b>Area 5 – Improved ability to meet workforce needs in the region with a focus on high wage and high demand occupations.</b>		
<b>Project Outcome</b>	<b>Progress Markers</b>	<b>Expected Results</b>
5.1 Increased number of LHS graduates in 2017 will enroll in post-secondary training in high wage/high demand fields.	1. 2016 LHS Senior Exit Survey will indicate 10% increase in students leaving to pursue high wage/high demand fields.	1. LHS will increase the number of graduates in 2017 going into identified high wage/high demand fields by 20%.

	<p>2. 2017 LHS Senior Exit Survey will indicate 20% increase in students leaving to pursue high wage/high demand fields.</p>	
<p>5.2 LHS will maintain CTE Advisory Committee made up of local business partners, high education, and governmental agencies to review programming and make regular adjustments.</p>	<ol style="list-style-type: none"> <li>1. Fall 2015, LHS re-instituted CTE Advisory Committee.</li> <li>2. Fall 2015, recruitment and formal calendar produced for LHS CTE Advisory Committee.</li> <li>3. 2016-18, Agendas/Notes from regular CTE Advisory Committee Meetings to oversee grant funds and CTE programming adjustments.</li> <li>4. 2018, Agendas/Notes demonstrate regular meetings and continued focus on high wage/high demand field.</li> </ol>	<p>1. LHS CTE Advisory Committee will meet at least quarterly to review programming and make continued adjustments as needed to maintain focus on high wage/high demand fields.</p>

## Activities and Timeline: CTE Revitalization Grant

### Activities and Timeline

Describe the specific activities associated with the attainment of each of the project outcomes in the table in Appendix F.

**Activity** – Activities may include planning and implementation. The project should have significant implementation activities by Fall 2016.

**Outcome(s) addressed** – List the specific outcomes or areas of outcomes related to the activity. These can be listed by the numbers from the table in Appendix F.

**Timeline** – Indicate the beginning and ending month and year for each activity.

**Person(s) responsible** – Indicate the names, positions, or groups that will be responsible for making sure the activity will be accomplished within the proposed timeline.

<b>Activity</b>	<b>Outcome(s) addressed</b>	<b>Timeline</b>	<b>Person(s) responsible</b>
<i>(Activities prior to distribution of funds) Placement of Students in local businesses through LHS CTE Pathways program (Started in 2014 – 15 local partners to date).</i>	1.1, 1.2, 4.2, 5.1	9/2015-4/2016	CTE Coordinator, Administration, Students, Local Partners
<i>Quarterly CTE Advisory Committee Mtg. – Grant Funded! What’s Next!</i>	1.1, 5.2	11/2016	Administration, Teachers, Local Partners
<i>Finalize building designs for bond construction and greenhouses to begin in March 2016</i>	1.3, 1.4, 2.2	8/2015-2/2016	CTE Site Committee
<i>Meet with Union County Commissioners to propose BMCC return to Union County in La Grande High School facilities.</i>	1.3, 3.3, 4.2, 5.1, 5.2	11/2015	La Grande SD/BMCC/Union County Commissioner/City of La Grande/UCEDC
<b>(Funds distributed – January 2016)</b> Work with CTE Advisory Committee, Business Partners, BMCC, Teachers, and Counselors to propose new courses, course adjustments, and	1.1, 1.2, 1.3, 1.4, 2.2, 2.4, 3.1, 3.2, 3.3, 4.1	11/2015-2/2016	CTE Advisory Committee, BMCC, Teachers, Administrator,

deleted courses to LHS Curriculum Guide for School Board approval.			Counselors, and School Board
Meet with IMESD about new pathways and make adjustments to programs of study	1.2, 1.3, 1.4, 2.3, 3.1, 3.3, 5.1	1/2016	IMESD, CTE Coordinator, Administration
Propose Course/Curriculum Adjustments in CTE programming to School Board for Review and Feedback	1.1, 1.2, 1.3, 1.4, 2.2, 2.4, 3.1, 3.2, 3.3, 4.1	3/2016	Administration, School Board
Quarterly CTE Advisory Committee Mtg. – Finalize Curriculum Changes / Review Purchase Orders.	1.1, 5.2	3/2016	Administration, Teachers, Local Partners
Order CASE/PLTW curriculum and equipment for Medical, Mechatronics, and Agriculture/Forestry Pathways	1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.1, 3.2	3/2016-5/2016	LHS Administration, Teachers, District Business Office Personnel.
Follow-up Meeting(s) with Union County to propose plan for courses offered and attached budget to bring back BMCC	1.3, 3.3, 4.2, 5.1, 5.2	1/2016-5/2016	La Grande SD/BMCC/Union County Commissioner/City of La Grande/UCEDC
Construction on new CTE building started.	1.3, 1.4, 2.2	3/2016	School District, Administration, Contractors
Pilot integrated NEOAHEC curriculum in Medical Pathway Courses	1.1, 1.2, 3.2, 4.1, 5.1	Semester 2 2016	Teacher, NEOAHEC, students
CTE and Special Education Staff meet bi-weekly in Professional learning communities to address underserved students.	2.1, 2.3, 2.4, 4.1, 4.2	3/2016-5/2016 (Mondays weekly)	Teachers, Administration
Quarterly CTE Advisory Committee Mtg. – Summer Projects.	1.1, 5.2	5/2016	Administration, Teachers, Local Partners
Senior Exit Survey, CTE Scholarship Awards, CTE Pathways Banquet, Graduation	1.1, 2.1, 4.2, 5.1	5/2016	Administration, Teachers, Students

Data Results for CTE Program	All Outcomes	6/2016	Administration
Send Teachers to Training: CASE (Agriculture/Forestry), PLTW(Medical), Barreto Manufacturing Internship (Mechatronics)	1.2, 1.3, 1.4, 4.2	6/2016-8/2016	Teachers, Administration
Greenhouses moved, reconfigured, and installed with new equipment for Community Garden, Reforestation, and Science Applications	1.1, 1.4, 1.5, 2.2, 2.3, 2.4, 3.1, 4.1, 4.2	6/2016-8/2016	Contractor, Teachers, Plantworks, Dept. of Forestry, Administration
Equipment Installed	1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.1, 3.2	6/2016-8/2016	Teachers, Administration
Advertising of CTE Programs / Student Registration	1.1, 2.1, 2.4, 4.1, 5.1	8/2016	Students, Administration, Teachers
Completion of Dual Credit Agreements for CTE Pathways Courses	1.1, 1.2, 3.2, 4.1, 5.1	9/2016-10/2016	Teachers, Administration, BMCC
Start BMCC Offerings for Adult Education at LHS.	1.1,1.3, 2.2, 4.2, 5.1	9/2016	BMCC, Administration, Community
Quarterly CTE Advisory Committee Mtg. – Schedule / "To Do's" / Review Expenditures to Date	All Outcomes	9/2016	Administration, Teachers, Local Partners
Start new Courses in Mechatronic, Medical, and Agriculture/Forestry in 2016-17	All Outcomes	9/2016	Administration, Teachers, Students
Pine Seeds / Soil / Biochar delivered to LHS	1.4, 1.5, 2.2, 2.4, 4.1, 4.2, 5.1	9/2016	Dept. of Forestry, Teacher, Students
Placement of Students in local businesses through LHS CTE Pathways program (Started in 2014-15 local partners to date).	1.1, 1.2, 4.2, 5.1	9/2016-4/2017	CTE Coordinator, Administration, Students, Local Partners
Guest welding instructors from Cross L Welding and Barreto Manufacturing (twice per month)	1.1, 1.3, 2.2, 2.4, 4.2, 5.1	9/2016-4/2017	CTE Partners, Teachers, Students
Plantworks, Dept. pf Forestry, USDA work in reforestation project/instruction.	1.1, 1.4, 1.5, 2.2, 2.4, 4.2, 5.1	9/2016-4/2017	CTE Partners, Teachers, Students

Introduction of Structured Learning Center (severely handicapped youth) and Vocational Rehabilitation to Community Garden greenhouse, Virtual Welder, and other CTE programs in structured projects.	1.1, 2.1, 2.4, 4.1, 4.2, 5.1	9/2016-5/2017	Special Ed, CTE Teachers, Students
Quarterly CTE Advisory Committee Mtg. – Progress Review / Next Steps	All Outcomes	11/2016	Admin, Teachers, Local Partners
CTE and Special Education Staff meet weekly in Professional learning communities to address underserved students.	2.1, 2.3, 2.4, 4.1, 4.2	9/2017-5/2018 (once per month)	Teachers, Administration
Quarterly CTE Advisory Committee Mtg. – Progress Review / Next Steps	All Outcomes	2/2017	Admin, Teachers, Local Partners
Order Last Phase of medical curriculum	1.2, 2.2, 3.2, 4.1	3/2017	Administration, Teachers
Construction Phase II of CTE Building	1.3, 1.4, 2.2	3/2017-8/2017	Contractors, School District
Data Collection: Biochar Research, Seek Presentation Opportunities	1.1, 1.4, 1.5, 4.2, 5.1	3/2017-5/2017	Teacher, Students, Local partners
Senior Exit Survey, CTE Scholarship Awards, CTE Pathways Banquet, Graduation	1.1, 2.1, 4.2, 5.1	5/2017	Administration, Teachers, Students
Report to School Board on CTE Revitalization Implementation – Next Steps	All Outcomes	5/2017	Administration, Teachers, Students, Partners
Quarterly CTE Advisory Committee Mtg. – Full Implementation Review / Review Scope & Sequence for new pathways	All Outcomes	4/2017	Admin, Teachers, Local Partners
Data Results for CTE Program	All Outcomes	6/2017	Administration
Send Teachers to Training: PLTW(Medical), Barreto Manufacturing Internship (Mechatronics)	1.2, 1.3, 1.4, 4.2	6/2016-8/2016	Teachers, Administration
Full Implementation	All Outcomes	8/2017	All