

Appendix B – Cover Page

APPLICATION COVER PAGE

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

Project Name: Manufacturing by Design
Amount Requested: \$500,000.00

Project Director: Brian Robin		
District, School or ESD: Southern Oregon ESD		
Address: 101 North Grape Street		
City: Medford	State: OR	Zip: 97501
Phone: 541-776-8593	Email: brian_robin@soesd.k12.or.us	

Grant Fiscal Agent Contact: Howard George		
District, Charter School or ESD: Southern Oregon ESD		
Address: 101 North Grape Street		
City: Medford	State: OR	Zip: 97501
Phone: 541-776-8580	Email: howard_george@soesd.k12.or.us	

Superintendent: Scott Beveridge		
District or ESD: Southern Oregon ESD		
Address: 101 North Grape Street		
City: Medford	State: OR	Zip: 97501
Phone: 541-776-8590	Email: scott_beveridge@soesd.k12.or.us	

	Participating High School or Middle School Name (add additional rows as needed)	Lead Contact Name	Grade Levels	Student Enrollment
	Grant Pass High School	Brenda Bunge	9-12	1831
	North Medford School	Kevin Campbell	9-12	1711
	South Medford High School	Kevin Campbell	9-12	1812
	Central High School	Kevin Campbell	9-12	244
	Ashland High School	Carroll Newcomb	9-12	1000
	Butte Falls High School	Dave Bone	K-12	146
	Crater High School	Mike Rogan	9-12	1250
	Eagle Point School	Roger Gabica	9-12	1255
	Phoenix School	Tami Ingerswon	9-12	747
	Prospect School	Don Alexander	K-12	253

	Rogue River Jr/Sr High Sch	Sam Herringshaw	7-12	374
11.	North Valley High School	Casey Alderson	9-12	565
12	Hidden Valley High School	Casey Alderson	9-12	719
13	Illinois Valley High School	Casey Alderson	9-12	356
14	North Middle School	Doug Ely	6-8	678
15	South Middle School	Jeff Weiss	6-8	607
16	McLoughlin Middle School	Linda White	6-8	838
17	Hedrick Middle School	Beth Anderson	6-8	954
18	Ashland Middle School	David DiGirolamo	6-8	571
19	Scenic Middle School	Brad Eaton	6-8	806
20	Hanby Middle School	Scott Dipple	6-8	253
21	Eagle Point Middle School	Jenn Whitehead	6-8	463
22	Talent Middle School	Aaron Santi	6-8	583
23	Fleming Middle School	P. Hastings	6-8	402
25	Lorna Byrne Middle School	Scott Polen	6-8	275
26	Lincoln Savage Middle Sch	Mark Higgins	6-8	397
27	Allen Dale Elementary Sch	Jake Musser	K-5	461
28	Highland Elementary Sch	George Personius	K-5	390
29	Lincoln Elementary Sch	Missy Fitzsimmons	K-5	451
30	Parkside Elementary Sch	M. Lewis	K-5	417
31	Redwood Elementary Sch	Pattie Davidson	K-5	434
32	Riverside Elementary Sch	Jessica Durrant	K-5	434
33	A Lincoln Elementary Sch	Patti Frazer	K-6	475
34	Griffin Creek Elem. Sch	Louis Dix	K-6	601
35	Hoover Elementary Sch	Lynn Cataldo	K-6	627
36	Jackson Elementary Sch	Kelly Sotor	K-6	439
37	Jacksonville Elementary Sc	Joe Frazier	K-6	409

38	Jefferson Elementary Sch	Richard Snyder	K-6	493
39	Lone Pine Elementary Sch	Kristi Anderson	K-6	605
40	Kennedy Elementary Sch	Tom Ettl	K-6	489
41	Oak Grove Elementary Sch	Liz Landon	K-6	513
42	Roosevelt Elementary Sch	Isis Contreras	K-6	404
43	Ruch Elementary Sch	Julie Barry	K-8	187
44	Washington Elementary Sc	Sallie Johnson	K-6	419
45	Wilson Elementary School	Gary Flock	K-6	509
46	Bellview Elementary Sch	Steve Retzlaff	K-5	321
47	Helman Elementary Sch	Steve Retzlaff	K-5	310
48	John Muir Elementary Sch	Dierdre Pearson	K-8	98
49	Walker Elementary Sch	Tiffany Burns	K-5	272
50	Butte Falls Elementary	Dianne Gorman	K-12	156
51	Sams Valley Elementary Sc	Christine Beck	K-5	236
52	Patrick Elem. School	Sara Hanberg	K-5	242
53	Mae Richardson Elem. Sch	Lynn Scott	K-5	532
54	Jewett Elementary School	Mr. Rambo	K-5	525
55	Central Point Elem. Sch	Walt Davenport	K-5	466
56	Eagle Rock Elem. Sch	Harry Hedrick	K-5	315
5758	Evergreen Elem. School	David Regal	K-5	419
58	Fort Vannoy Elem. School	Kirk Bauman	K-5	296
59	Fruitdale Elem. School	Heather Yount	K-5	354
60	Hillside Elem. Sch	Jodi Salinas	K-5	482
61	Mountain View Elem. Sch	Karina Rizo	K-5	315
62	White City Elem. Sch	Jose DeJesus Melendez	K-5	766
63	White Mountain Middle Sch	Karina Rizo	6-8	390
64	Orchard Hill Elem. Sch	Brent Barry	K-5	351

65	Phoenix Elem. Sch	Jeff Carpenter	K-5	366
66	Talent Elementary School	Kurt Shenk	K-5	514
67	Prospect Elementary	Tim Dexter	K-12	253
68	Rogue River Elem. Sch	Jennifer Bakker	K-6	401
69	Applegate Elem. School	Darrell Erb Jr.	K-8	108
71	Madrona Elem. School	Miranda Carpenter	K-5	395
72	Manzanita Elem. School	Renee Hults	K-5	390
73	Williams Elementary Sch	Darell Erb Jr.	K-5	66

A. Project Abstract

There are multiple Career & Technical Education programs in Southern Oregon schools providing rich, hands-on, real world learning experiences for students. However, not all students in the region have access to a broad array of these programs, and some programs are hampered by a lack of industry-standard equipment that would allow students to understand and experience today's cutting-edge technology. *Southern Oregon STEM Manufacturing by Design* is an innovative project designed to provide mobile CTE labs to the region that can travel between schools, as well as industry-standard equipment that will dramatically expand student access to quality CTE programming aligned with our region's economic development plan. Through this, many more students will access these high interest courses that build solid knowledge foundations through hands-on, real world learning. Ultimately, these expanded opportunities will lead to increased student engagement, real world skill development and, ultimately, higher graduation and postsecondary success rates. Another key element of this project will be expanded opportunities for students to explore career options through increased interaction with business and industry partners.

B. CTE Revitalization Grant Vision (20 Points)

CTE Within Participating Schools – *Southern Oregon CTE-R and STEM: Manufacturing by Design* is an innovative project designed to: cultivate curiosity through experiential learning and build foundations through hands on, real world STEM application; strengthen existing relationships between schools, business and industry, and postsecondary partnerships; and build new partnerships through collaboration with a focus on building students’ core academic skills through technical application. The project will provide hands-on activities in all grade levels.

The heart of this project will be deployment of two mobile CTE laboratories, Mobile Class Labs (MCLs), which will be accessible to support CTE Programs of Study (POS) in the Grants Pass, Medford, Phoenix-Talent, Rogue River, and Three Rivers school districts with potential expansion to support CTE programs in districts throughout Southern Oregon. MCLs will provide equipment on a rotating basis to schools lacking these cutting edge technologies, maximizing investment through cooperative use. Students will design projects that can be produced with the MCLs’ equipment to support both ICT and Manufacturing POS. MCLs also will be used to promote interest in CTE career paths at the various elementary and middle schools, as well as during the summer by Rogue Community College (RCC) and ScienceWorks for outreach to under-served community populations with a goal of stimulating family interest in CTE career paths. MCLs will contain design and manufacturing technologies identified as relevant by regional businesses, allowing teachers to introduce students to 21st Century CTE skills for a global economy using the most current CTE and STEM technologies.

At the upper elementary and middle school level, teachers working in partnership with CTE secondary and postsecondary instructors and community-based organizations will be able to access the MCLs to introduce students to an exciting variety of STEM and CTE experiences. At

the high school level, MCLs will be used by CTE teachers who, in collaboration with colleagues in relevant core content areas, will provide students necessary hands-on experiences critical to their POS work. The MCLs also will support existing CTE and core academic course work by allowing high school POS to collaborate with RCC to provide STEM Academies on the RCC campus for students during out-of-school time including summer breaks. MCLs will be available to community-based ScienceWorks for a minimum of ten-weeks for summer STEM Academies for all ages. In addition to the MCLs, industry standard equipment will be permanently housed at high schools within the two Medford and Grants Pass flagship districts and be used to apply core academic skills and new technical skills attained during hands on learning activities. This permanent hardware will provide expanded opportunities to MCL projects for all students in partnering districts through programs such as summer courses where high school teachers and college instructors co-teach.

Guided by our Workforce Boards, we have identified business needs to promote regional economic development through the creation of a workforce aligned with local, state, and national employment trends. Through backwards design of high wage, high skill, high demand positions, we have defined the corresponding college degrees and certificates, and hence the college and articulated high school courses required for students to progress on a rigorous and relevant academic career pathway. An additional element of this project will be the expansion of career exploration activities in concert with business and industry partners. This work will be modeled after the highly successful career exploration program developed over the past several years in the Grants Pass School District.

Examples: Outcomes, Activities Addressing the Vision – *Outcome*: Increased student awareness of career opportunities through exposure to employers. *Activities*: Increased

opportunities for job shadows, industry tours, internships, certifications. Hands on experiential learning in the MCLs. *Outcome:* Increased rigor in technical and academic content alignment to diploma requirement, industry-recognized technical standard, and employability skills. *Activities:* RCC workshops for CTE teachers partnering with math teachers, STEM Academies, CTE Academies, and Professional Development for CTE POS teachers. *Outcome:* Improved and sustainable partnerships with business, industry, labor, and educational providers. *Activities:* Convene Manufacturing POS Advisory Board meetings; signed commitment letters. *Outcome:* Improved student access to CTE POS with particular attention to historically underserved students. *Activities:* Science Works STEM Academies, RCC STEM Academies, CTE Academies and STEM Academies at middle & junior high schools. *Outcome:* Improved ability to meet workforce needs in the region with a focus on high wage and high demand occupations. *Activities:* Provide students the opportunity to achieve industry skills such as a Machine Tool Operators certificate. Create closer alignment with RCC's Computer Numerical Control. Professional development for CTE POS teachers.

Changing How Students Experience CTE – As technology evolves and manufacturing continues to grow and expand in our region, our local businesses and industries require employees with technical skills and academic knowledge. This project seeks to provide students of all ages the opportunity to explore and experience firsthand the existing and emerging technologies in design and manufacturing. The MCLs and high school flagship programs will partner with multiple middle and high schools, community colleges, workshops, camps, STEM academies, and CTE academies to provide project based, experiential learning. All industry and community organization partners will provide one or more of the following CTE experiences:

- Expose students to career opportunities available in Design and Manufacturing

- Link students to local business and industry through job shadows and internships
- Introduce students to career preparation available at local community colleges by expanding College Now courses, providing CTE and STEM workshops and Academies available out of school including summer break.
- Deliver instruction through projects and activities to motivate and encourage students to utilize core academic skills, technical skills and problem solving
- Build student understanding of core and technical skill needed in Manufacturing and Information Communication Technology (ICT).
- Emphasize further advanced, available training at Rogue Community College (RCC)
- Build new curriculum to expand these opportunities to other CTE Programs of Study

Changing How Historically Underserved Students Experience CTE – A major focus of this

project is expanding CTE opportunities for historically underserved students. A full range of CTE learning opportunities have not been universally accessible in our region due to limited available Perkins funding. This has limited access for a significant population of students including those living in more rural parts of the region and those with limited financial resources. We recognize a need to better serve our growing population of students of color in our region and be more inclusive in CTE offerings to girls and young women. This project will expand CTE and STEM opportunities for all students in the region and we will intentionally invite historically underserved students through targeted marketing, encouragement activities, and support.

C. Partnerships

Role of Partners in Proposal Development – Business, industry, education and Workforce Investment Board partners joined together to create a College and Career for All Hub (CC4A)¹. This cross-regional initiative is an integral part of Regional Achievement Collaboratives in the

¹ Graphics of CC4A Mutual Reinforcing Efforts and CC4A Hub Governance Model are in the Appendix.

Rogue Valley and Klamath County. CC4A is a commitment between our region's business and industry leaders, community college and university presidents, district superintendents, and community partners to engage students in high wage, high skill, high demand career paths. This project grows out of two years of dialogue and planning with the CC4A Hub group and reflects many of that group's goals and aspirations. Part of the CC4A group's work to increase attendance and graduation rates while reducing remedial education and fueling economic development includes: parallel efforts in promoting CTE and STEM education; increasing dual high school and college credit; attaining Career Pathways Certificates and industry recognized credentials; and coordinating career related learning experiences with business and industry.

RCC has been a vital partner for this project from its conception. The RCC Dean of Instruction for the School of Science and Technology and the Director of Educational Partnerships have worked with CTE teachers in the region to establish necessary elements for the MCLs and Flagship Districts to increase College Now credits. RCC Manufacturing program instructors work cooperatively with CTE POS teachers to help provide a seamless transition from high school to community college. ScienceWorks played a vital role in designing educational outreach to underserved students, loaning their staff's extensive experience in this area to provide invaluable guidance and assistance for the outfitting of the Mobile Class Labs.

Role of Partners in Implementation – We will further strengthen Southern Oregon CTE POS relationships and provide additional opportunities for students. Partners collaborated to design solutions enabling us to: deliver hands-on experiential learning to students of all backgrounds earlier in their education; demonstrate the relationship of core academics to design and manufacturing industries; and showcase careers in those industries. Industry partner contributions include: industry tours, presenters at Career Fairs and other Career events,

internships, externships, providing useable “shorts”, “waste” or “fall” materials, loans of equipment and training, Tech Talks, Oregon Connections/virtual presentations, MCL co-presenters in conjunction with RCC and CTE secondary instructors, job shadows, serving on Advisory Boards for POSs, and being guest speakers in classrooms.

Possible Partner Roles Beyond the Grant – Through our Workforce Investment Board, economic development partners, and the CC4A Hub we are expanding partnerships with key business and industry leaders and will continue to do so beyond the life of the grant. Business and industry partners will play a key role in participating in industry/education councils to plan project-based learning, project ideas, curriculum, career pathway development/alignment, career-related learning, etc. We are creating an integrated system of coordination between all partners with business, industry, economic development and Workforce Board partnerships as a critical component to the long-term sustainability of our region’s CTE-R efforts

Correlation of Partners to Regional High Wage/High Demand Occupations – For Jackson and Josephine Counties, the Rogue Workforce Partnership, in partnership with Southern Oregon Regional Economic Development, Inc. have targeted jobs in Advanced Manufacturing, Information Technology/E-Commerce, and Healthcare as high priority high-wage/high demand industries. Our project’s focus is on Advanced Manufacturing and Information Technology/E-Commerce. Attached letters demonstrate regional industries’ commitment to our project.

Partner Roles Promoting Opportunities for Historically Underserved Students – We will coordinate the project’s efforts with our on-going regional STEM Hub efforts and pending STEM Innovation grant proposals. RCC, SOU, and informal education partners such as College Dreams and the Rogue Hack Lab will help provide coordinated engagement with at-risk, high poverty, culturally diverse, female, and other historically underserved students. Key business and

industry leaders are strongly committed to providing targeted services for these students. One of our common goals is to increase the enrollment of students at RCC, SOU, and other post-secondary training in all key CTE and STEM related industries to meet the labor market demand. Historically underserved students will be a primary target for increased enrollments.

Growth in Opportunities for Articulated Credit – This project will allow for the Flagship Districts of Grants Pass and Medford to purchase industry quality equipment similar to and recommended by RCC’s Manufacturing Department. This will allow for alignment and articulation to RCC’s curriculum, and increasing Dual Credit offerings. The equipment will include: RCC comparable welding equipment, plasma cutters, HAAS milling machines at Grants Pass and North Medford High Schools, and mini-milling machines to allow a seamless transition for CTE POS students at Grants Pass HS, North Medford HS and South Medford HS to RCC in the welding program. We will purchase and outfit two MCLs that will contain scaled down versions of the equipment already in place at the two Flagship Districts. POSs at other partnering districts not similarly equipped will have access to equipment that will give their students the opportunity to explore Pathways and curriculum that aligns with RCC. Modular Learning Units (MLUs) will include plastics manufacturing with injection molding and vacuum forming, CNC milling, Vinyl Cutting, 3D Printers, Drones, Robotics, Go-Pro video cameras and Laser Cutters. In addition, MLUs for the MCLs will provide opportunities for specifically targeted age groups, including 2D to 3D pattern development and other exploration units.

The MCLs and their MLUs distinguish this manufacturing grant application from many others. While the Flagship equipment is a serious infusion of industry level equipment in Manufacturing POS, the different MLUs are designed to deliver curriculum material and will encourage exploration of diverse CTE career areas and appeal to a variety of ages and learners.

Appendix F- Outcomes and Measures

Project Outcome	Progress Markers	Expected Results
Area 1 - Improved and sustainable partnerships with business, industry, labor, and educational providers.		
1.1 Schools will continue to work cooperatively with business and industry to improve curriculum and instruction in CTE Programs Of Study.	Regular advisory meetings. Guest speakers from industry will participate in career fairs. Job shadows and Internships will increase.	Increased business, industry and community-based partnerships.
1.2 Partnerships with industry will increase by 4 new partnerships per year.	Schools will increase business and industry partners by 1 new business or industry partner per quarter.	More participation by business and industry at career fairs, more job shadows and internship opportunities for students leading to higher employment.
Area 2 – Improved student access to CTE Programs Of Study with particular attention to historically underserved students.		
2.1 Increase participation of underserved students by at least 8% by Spring 2017.	Increased enrollment in Design and Manufacturing Programs Of Study.	Increased College Now Credit in the Design and Manufacturing Program Of Study.
2.2 Increase participation of underrepresented students by at least 8% by Spring 2017	Increased enrollment in Design and Manufacturing Programs Of Study.	Increased number of underrepresented concentrators and completers in regional Manufacturing POS
2.3 Increased certifications earned by students in Design and Manufacturing. (i.e. SolidWorks Certifications, Welding Certification, ScienceWorks STEM Academies, RCC STEM Academies, CTE Academies and STEM Academies at middle and high schools).	Increased student college visitations to Rogue Community College to take certification tests and to explore design and manufacturing programs, STEM Academies, CTE Academies.	Increase number of students with work ready certificates. Increase enrollment in community college Science and Technology programs.

Project Outcome	Progress Markers	Expected Results
Area 3 – Increased rigor in technical and academic content alight to diploma requirements, industry-recognized technical standards such as the Oregon Skill Sets, and employability skills.		
3.1 Increase student achievement in math as related to design and manufacturing.	Students will demonstrate career readiness by demonstrating use of addition, subtraction, multiplication and division of whole numbers, fractions and decimals; applied word problems; percentages; ratio proportions; averages; area; volume; metric measures and traditional (Imperial) measures and trigonometry in problem related to design and manufacturing.	Students will demonstrate career readiness by utilizing their skills in real world, community service projects.
3.2 Students will demonstrate Career Readiness as measured by the Career Related Learning Standards activities integrated into CTE Programs of Study Curriculum.	CTE POS curriculum currently provides a focus on CRLS. CTE POS and high schools’ Career Centers require students involved in Job Shadows and Internships be evaluated by the organizations offering the job shadows and internships	Student evaluations will indicate that students displayed appropriate workplace habits and were career ready as evaluated by business and industry partners.
3.3 Increase the total percent of manufacturing CTE POS Concentrators of flagship POS passing the Technical Student Assessment (TSA)	Goals set at PLC meetings to better prepare students for TSA.	Teachers in POS implement new strategies as a result of agreed upon goals to improve student outcomes on TSA.
Area 4 – Increased student awareness of career opportunities through exposure to employers.		
4.1 Increased Job shadow opportunities for CTE concentrators.	Regionally, student participation increased by at least 10% by Spring 2017	Higher student retention in Design and Manufacturing Programs Of Study as a result of better exposure to local employment possibilities.
4.2 Increased Industry Tour opportunities for CTE concentrators	Regionally, student participation increased by at least 10% by Spring 2017.	Increase in student enrollment in Design and Manufacturing. Increase in student academic achievement and

Project Outcome	Progress Markers	Expected Results
		graduation rate.
4.3 Increased Internships opportunities for CTE concentrators.	Regionally, student participation increased by at least 10% by Spring 2017.	Increase in student enrollment in Design and Manufacturing. Increase in student academic achievement and graduation rate.
Area 5 – Improved ability to meet workforce needs in the region with a focus on high wage and high demand occupations.		
5.1 (A, B & C) Increased certifications earned by students in Design and Manufacturing (i.e. SolidWorks Certifications, Welding Certifications...)	PLC planning to identify goals that improve student outcomes on TSA.	Increased student participation and results.
5.2 Afford students the opportunity to achieve Industry skills and the Machine Tool (CNC) operators certificate	PLC training by RCC instructors to prepare high school teachers to utilize equipment to prepare students for RCC opportunities.	Increased high school student participation in College Now courses in Design and Manufacturing
5.3 Create closer alignment with RCC Computer Numerical Control (CNC) operator pathway certificate of completion.	PLC meeting time dedicated to working with RCC instructors to adjust curriculum to provide students with preparation in the area of CNC	More students will receive College Now credit in Design and Manufacturing.
5.4 Afford students the opportunity to earn credit toward achievement of Industry skills and Welding certifications, i.e. RCC Welder's Helper	PLC meeting time dedicated to working with RCC instructors to adjust curriculum to prepare students to seamlessly transition to RCC Manufacturing program.	Increased student enrollment in RCC School of Science and Technology which will prepare more students for high wage, high demand careers in Design and Manufacturing.
5.5 Align curriculum in order to articulate with some courses in RCC's Welding Certificate, Welder's	PLC meeting for curriculum work.	More students receive College Now credit in Design and Manufacturing courses in high school

Project Outcome	Progress Markers	Expected Results
Helper		
5.6 Afford students the opportunity to earn credit toward achievement of Industry skills and Welding Certification, RCC Industrial Welding Certificate of Completion	PLC meeting time for curriculum work.	More students receive College Now credit in Design and Manufacturing courses in high school
5.7 Align curriculum in order to articulate with some courses in RCC's Industrial Welding Certificate of Completion	PLC meeting for curriculum work	More students receive College Now credit in Design and Manufacturing courses in high school
5.8 Afford students the opportunity to earn credit toward achievement of Industry skills and Welding Certificate, RCC's Industrial Welding Technology Associate of Applied Science Degree	PLC meeting for curriculum work	More students receive College Now credit in Design and Manufacturing courses in high school
5.9 Align curriculum in order to articulate with some courses in RCC's Industrial Welding Technology Associate of Applied Science Degree	PLC meeting for curriculum work	More students receive College Now credit in Design and Manufacturing courses in high school
5.10 Students will recognize the various levels of employment available in the Design and Manufacturing industry.	Embed Career Reports in curriculum.	Students work with their counselors to tailor their education plan and profile to their career path
5.11 Students will recognize the various levels of employment available in the Design and Manufacturing industry	CTE Academies	Students select courses in high school and prepare a post-secondary plan to reach career goals.
5.12 Students will recognize the various levels of employment	CRLEs	Students select courses in high school and prepare a post-secondary

Project Outcome	Progress Markers	Expected Results
available in the design and manufacturing industry		plan to reach career goals.
5.13 Students will recognize the various levels of employment available in the design and manufacturing industry.	Job Shadow	Students select courses in high school and prepare a post-secondary plan to reach career goals.
5.14 Students will recognize the various levels of employment available in the design and manufacturing industry.	Internships	Students select courses in high school and prepare a post-secondary plan to reach career goals.
5.15 Students will recognize the various levels of employment available in the design and manufacturing industry.	Industry tours and guest speakers	Students select courses in high school and prepare a post-secondary plan to reach career goals.

Appendix G - Activities and Timeline

Definition: STEM Academy- A set period of time in which youth are exposed to the STEM fields. STEM is not about just Science, Technology, Engineering, and Mathematics; it is a culture that needs to be cultivated to help create a problem solving, creative, critical thinking, and globally minded workforce for tomorrow. During these STEM Academies, youth will expand their thinking to embrace STEM beyond these subjects, and beyond the classrooms. The STEM Academy represents a flexible use academic model that targets all students of all ages.

Definition: CTE Academy- A minimum of a 16.5 hour workshop series or time focused on CTE career exploration or increasing technical skills areas. High School students who successfully complete these CTE Academies may be able to earn 1/8 credit of high school elective credit or Career Related Learning Experiences to satisfy the Career Ed credit for high school graduation. Cooperative Work Experience may also be offered in 1/8 credit increments for the successful completion of the CTE Academies for students who staff and teach the academy, even when offered to students younger than high school. All participating schools providing this option to students will create a course named "Cooperative Work Experience CTE Academy" for 1/8 credit and list it as a POS course in their course updates for the 2016-2017 year.

Activity	Outcome(s) addressed	Timeline	Person(s) responsible
	Area 1 - Improved and sustainable partnerships with business, industry, labor, and educational providers.		
Manufacturing POS Advisory Board meetings two per year minimum.	1.1 Schools will continue to work cooperatively with business and industry to improve curriculum and instruction in CTE programs of study.	September 2015- June 2016 and September 2016 - June 2017	Manufacturing POS CTE Teachers of flagship schools: GPHS Manufacturing POS CTE Teachers Jake Leair, David Brannen and Brenda Bunge, NMHS Manufacturing Design and Manufacturing POS CTE Teachers Kirstie Christopherson, Tim Ponzoha and TBD. SMHS POC CTE Teachers James Veverka and Melissa Schneyder

Activity	Outcome(s) addressed	Timeline	Person(s) responsible
Gather signed letters of commitment from at least four additional Business, Industry and Community-Based Organization per school year.	1.2 Partnerships with industry will increase by 4 per year.	September 2015- June 2016 and September 2016 - June 2017	Every POS Teacher and TBD- Career Related Learning Experience Coordinator & Staff funded by the grant with Brian Robin supervising IN-KIND commitment from SOESD
Area 2 – Improved student access to CTE programs of study with particular attention to historically underserved students.			
ScienceWorks STEM Academies, RCC STEM Academies, CTE Academies and STEM Academies at middle and junior high schools.	2.1 Increase participation of underserved students by at least 2% by Spring 2017	August 2015 - May 2017	RCC - Dean of Science and Technology, Steve Schilling, SOESD CTE Coordinator, Brian Robin, POS teachers, SOCTEC District CTE Coordinators IN-KIND commitment from ScienceWorks, SOESD, RCC and Districts
ScienceWorks STEM Academies, RCC STEM Academies, CTE Academies and STEM Academies at middle and junior high schools.	2.2 Increase participation of underrepresented students by at least 2% by Spring 2017	August 2015 - May 2017	RCC - Dean of Science and Technology, Steve Schilling, SOESD CTE Coordinator, Brian Robin, POS teachers, SOCTEC District CTE Coordinators IN-KIND commitment from ScienceWorks, SOESD, RCC and Districts

Activity	Outcome(s) addressed	Timeline	Person(s) responsible
Curriculum modifications to provide for more practice to prepare for certification exams.	2.3 Increased certifications earned by students in Design and Manufacturing. (i.e. SolidWorks Certifications, Welding Certification, ScienceWorks STEM Academies, RCC STEM Academies, CTE Academies and STEM Academies at middle and high schools).	August 2015 - May 2017	Manufacturing POS CTE Teachers of flagship schools: GPHS Manufacturing POS CTE Teachers Jake Leair, David Brannen and Brenda Bunge, NMHS Manufacturing Design and Manufacturing POS CTE Teachers Kirstie Christopherson, Tim Ponzoha and TBD. SMHS POC CTE Teachers James Veverka and Melissa Schneyder
Area 3 – Increased rigor in technical and academic content alight to diploma requirements, industry-recognized technical standards such as the Oregon Skill Sets, and employability skills.			
RCC will host a Math 63 and 96 workshop for CTE teachers partnering with math teachers, STEM Academies, CTE Academies, Professional Development for CTE POS teachers	3.1 Increase student achievement in math as related to design and manufacturing.	Math: October -December 2016, Academies and PD: August 2016- May 2017	RCC - Dean of Science and Technology, Steve Schilling, SOESD CTE Coordinator, Brian Robin, POS teachers, SOCTEC IN-KIND commitment from ScienceWorks, SOESD, RCC and Districts

Activity	Outcome(s) addressed	Timeline	Person(s) responsible
POS Concentrators will create a Resume specific to their POS	3.2 Students will demonstrate Career Readiness as measured by the Career Related Learning Standards activities integrated into CTE Programs of Study Curriculum.	May 2016 and May 2017	Manufacturing POS CTE Teachers of flagship schools: GPHS Manufacturing POS CTE Teachers Jake Lear, David Brannen and Brenda Bunge, NMHS Manufacturing Design and Manufacturing POS CTE Teachers Kirstie Christopherson, Tim Ponzoha and TBD. SMHS POC CTE Teachers James Veverka and Melissa Schneyder
Leveraging Perkins funded PLC days for Fall 2015- Data review at Manufacturing PLC at SOESD to set goals and identify specific students to retest. Repeat by leveraging Perkins funded PLC days for Fall 2016- Data review at Manufacturing PLC at SOESD to set goals and identify specific students to retest.	3.3 Increase the total percent of manufacturing CTE POS Concentrators of flagship POS passing the Technical Student Assessment (TSA)	October 2015- June 2016, October 2016- June 2017	Manufacturing POS CTE Teachers of flagship schools with other manufacturing POS teachers encouraged to participate: Manufacturing POS CTE Teachers of flagship schools: GPHS Manufacturing POS CTE Teachers Jake Lear, David Brannen and Brenda Bunge, NMHS Manufacturing Design and Manufacturing POS CTE Teachers Kirstie Christopherson, Tim Ponzoha and TBD. SMHS POC CTE Teachers James Veverka and Melissa Schneyder IN-KIND commitment from SOESD and Districts leveraging Perkins Funding
Area 4 – Increased student awareness of career opportunities through exposure to employers.			
Connect with partners to pair CTE Manufacturing POS Concentrator students with Job Shadow opportunities	4.1 Increased Job shadows opportunities for CTE concentrators	September 2016- June 2017	TBD- Career Related Learning Experience Coordinator & Staff funded by the grant with Brian Robin supervising IN-KIND commitment from SOESD

Activity	Outcome(s) addressed	Timeline	Person(s) responsible
Connect with partners to pair CTE Manufacturing POS Concentrator students with Industry tours opportunities	4.2 Increased Industry Tour opportunities for CTE concentrators	September 2016- June 2017	TBD- Career Related Learning Experience Coordinator & Staff funded by the grant with Brian Robin supervising IN-KIND commitment from SOESD
Connect with partners to pair CTE Manufacturing POS Concentrator students with Industry internship opportunities, Create internship opportunities for CTE Academies	4.3 Increased Internships opportunities for CTE concentrators	September 2016- June 2017	TBD- Career Related Learning Experience Coordinator & Staff funded by the grant with Brian Robin supervising IN-KIND commitment from SOESD
Area 5 – Improved ability to meet workforce needs in the region with a focus on high wage and high demand occupations.			
RCC host a SolidWorks Certification preparation workshop in partnership with CTE Manufacturing Design Teachers. RCC Proctors the SolidWorks Certification Test	5.1(A) Increased certifications earned by students in Design and Manufacturing. (i.e. SolidWorks Certifications, Welding Certifications...)	March 2016 and March 2017	Stephen Foster, RCC Manufacturing Department Head GPHS POS CTE Teacher Brenda Bunge, NMHS POS CTE Teacher Kirstie Christopherson IN-KIND commitment from RCC and ESD SOCTEC PLC days
RCC Proctors the SolidWorks Certification Test	5.1(B) Increased certifications earned by students in Design and Manufacturing. (i.e. SolidWorks Certifications, Welding Certifications...)	April 2016 - June 2016	Stephen Foster, RCC Manufacturing Department Head IN-KIND commitment from RCC

Activity	Outcome(s) addressed	Timeline	Person(s) responsible
RCC Proctors the SolidWorks Certification Test	5.1(C) Increased certifications earned by students in Design and Manufacturing. (i.e. SolidWorks Certifications, Welding Certifications...)	April 2017 - June 2017	Stephen Foster, RCC Manufacturing Department Head IN-KIND commitment from RCC
Professional Development for CTE POS Manufacturing Teachers, RCC students and or instructors leveraging 2015-2016 Perkins PD funding for Manufacturing POS teachers and the 2016-2017 year	5.2 Afford students the opportunity to achieve Industry skills and the Machine Tool (CNC) operators Certificate.	April 2017 - June 2017	Stephen Foster, RCC Manufacturing Department Head GPHS POS CTE Teachers Jake Leair, David Brannen and Brenda Bunge, NMHS POS CTE Teachers Kirstie Christopherson, Tim Ponzoha and TBD. SMHS POC CTE Teachers James Veverka and Melissa Schneyder IN-KIND commitment from RCC and ESD SOCTEC PLC days
Professional Development for CTE POS Manufacturing Teachers, RCC students and or instructors leveraging 2015-2016 Perkins PD funding for Manufacturing POS teachers and the 2016-2017 year	5.3 Create closer alignment with RCC's Computer Numerical Control (CNC) operator career pathway certificate of completion. http://www.roguecc.edu/Programs/15_16/CNCoperator_CP.pdf	May 2016 - June 2017	Stephen Foster, RCC Manufacturing Department Head GPHS POS CTE Teachers Jake Leair, David Brannen and Brenda Bunge, NMHS POS CTE Teachers Kirstie Christopherson, Tim Ponzoha and TBD. SMHS POC CTE Teachers James Veverka and Melissa Schneyder IN-KIND commitment from RCC and ESD SOCTEC PLC days

Activity	Outcome(s) addressed	Timeline	Person(s) responsible
Professional Development for CTE POS Manufacturing Teachers, RCC students and or instructors leveraging 2015-2016 Perkins PD funding for Manufacturing POS teachers and the 2016-2017 year	5.4 Afford students the opportunity earn credit toward achievement of Industry skills and Welding Certification.- RCC's Welder's Helper http://www.roguecc.edu/Programs/15_16/IndWeldTech_helper_CP.pdf	May 2016 - June 2017	Todd Giesbrecht, RCC Manufacturing Department Head GPHS POS CTE Teachers Jake Leair, NMHS POS CTE Teachers Tim Ponzoha and TBD. SMHS POC CTE Teacher Melissa Schneyder IN-KIND commitment from RCC and ESD SOCTEC PLC days
Professional Development for CTE POS Manufacturing Teachers, RCC students and or instructors leveraging 2015-2016 Perkins PD funding for Manufacturing POS teachers and the 2016-2017 year	5.5 Align curriculum in order to articulate with some courses in RCC's Welding Certificate, Welder's Helper	May 2016 - June 2017	Todd Giesbrecht, RCC Manufacturing Department Head GPHS POS CTE Teachers Jake Leair, NMHS POS CTE Teachers Tim Ponzoha and TBD. SMHS POC CTE Teacher Melissa Schneyder IN-KIND commitment from RCC and ESD SOCTEC PLC days
Professional Development for CTE POS Manufacturing Teachers, RCC students and or instructors leveraging 2015-2016 Perkins PD funding for Manufacturing POS teachers and the 2016-2017 year	5.6 Afford students the opportunity earn credit toward achievement of Industry skills and Welding Certification.- RCC's Industrial Welding Certificate of Completion http://www.roguecc.edu/Programs/15_16/IndWeldTech_Cert.pdf	May 2016 - June 2017	Todd Giesbrecht, RCC Manufacturing Department Head GPHS POS CTE Teachers Jake Leair, NMHS POS CTE Teachers Tim Ponzoha and TBD. SMHS POC CTE Teacher Melissa Schneyder IN-KIND commitment from RCC and ESD SOCTEC PLC days

Activity	Outcome(s) addressed	Timeline	Person(s) responsible
Professional Development for CTE POS Manufacturing Teachers, RCC students and or instructors leveraging 2015-2016 Perkins PD funding for Manufacturing POS teachers and the 2016-2017 year	5.7 Align curriculum in order to articulate with some courses in RCC's Industrial Welding Certificate of Completion	January 2016- June 2016 and September 2016- June 2017	Todd Giesbrecht, RCC Manufacturing Department Head GPHS POS CTE Teachers Jake Leair, NMHS POS CTE Teachers Tim Ponzoha and TBD. SMHS POC CTE Teacher Melissa Schneyder IN-KIND commitment from RCC and ESD SOCTEC PLC days
Professional Development for CTE POS Manufacturing Teachers, RCC students and or instructors leveraging 2015-2016 Perkins PD funding for Manufacturing POS teachers and the 2016-2017 year	5.8 Afford students the opportunity earn credit toward achievement of Industry skills and Welding Certification.-RCC's Industrial Welding Technology Associate of Applied Science Degree http://www.roguecc.edu/Programs/15_16/AAS_IndWeldTech.pdf	January 2016- June 2016 and September 2016- June 2017	Todd Giesbrecht, RCC Manufacturing Department Head GPHS POS CTE Teachers Jake Leair, NMHS POS CTE Teachers Tim Ponzoha and TBD. SMHS POC CTE Teacher Melissa Schneyder IN-KIND commitment from RCC and ESD SOCTEC PLC days
Professional Development for CTE POS Manufacturing Teachers, RCC students and or instructors leveraging 2015-2016 Perkins PD funding for Manufacturing POS teachers and the 2016-2017 year	5.9 Align curriculum in order to articulate with some courses in RCC's Industrial Welding Technology Associate of Applied Science Degree	January 2016- June 2016 and September 2016- June 2017	Todd Giesbrecht, RCC Manufacturing Department Head GPHS POS CTE Teachers Jake Leair, NMHS POS CTE Teachers Tim Ponzoha and TBD. SMHS POC CTE Teacher Melissa Schneyder IN-KIND commitment from RCC and ESD SOCTEC PLC days

Activity	Outcome(s) addressed	Timeline	Person(s) responsible
<p>Embed Career Reports in curriculum: CTE POS will include the recognition of the various levels of employment in the design and manufacturing industry in the learning targets of their CTE classes. Professional Development for CTE POS Manufacturing Teachers, RCC students and or instructors leveraging 2015-2016 Perkins PD funding for Manufacturing POS teachers and the 2016-2017 year</p>	<p>5.10 Students will recognize the various levels of employment available in the Design and Manufacturing industry.</p>	<p>January 2016- June 2016 and September 2016- June 2017</p>	<p>Manufacturing POS CTE Teachers of flagship schools with other manufacturing POS teachers encouraged to participate: Manufacturing POS CTE Teachers of flagship schools: GPHS Manufacturing POS CTE Teachers Jake Lear, David Brannen and Brenda Bunge, NMHS Manufacturing Design and Manufacturing POS CTE Teachers Kirstie Christopherson, Tim Ponzoha and TBD. SMHS POC CTE Teachers James Veverka and Melissa Schneyder IN-KIND commitment from SOESD and Districts leveraging Perkins Funding</p>
<p>CTE Academies</p>	<p>5.11 Students will recognize the various levels of employment available in the design and manufacturing industry.</p>	<p>April 2016 - July 2017</p>	<p>SOESD GPHS POS CTE Teachers Jake Lear, David Brannen and Brenda Bunge, NMHS POS CTE Teachers Kirstie Christopherson, Tim Ponzoha and TBD. SMHS POC CTE Teachers James Veverka and Melissa Schneyder IN-KIND commitment from RCC and ESD SOCTEC PLC days</p>
<p>CRLEs</p>	<p>5.12 Students will recognize the various levels of employment available in the design and manufacturing industry.</p>	<p>February 2016 - July 2017</p>	<p>TBD- Career Related Learning Experience Coordinator & Staff funded by the grant with Brian Robin supervising IN-KIND commitment from SOESD</p>

Activity	Outcome(s) addressed	Timeline	Person(s) responsible
Job Shadow	5.13 Students will recognize the various levels of employment available in the design and manufacturing industry.	April 2016 - July 2017	TBD- Career Related Learning Experience Coordinator & Staff funded by the grant with Brian Robin supervising IN-KIND commitment from SOESD
Internships	5.14 Students will recognize the various levels of employment available in the design and manufacturing industry.	September 2016 - July 2017	TBD- Career Related Learning Experience Coordinator & Staff funded by the grant with Brian Robin supervising IN-KIND commitment from SOESD
CTE POS will include the recognition of the various levels of employment in the design and manufacturing industry in the learning targets of their CTE classes. Professional Development for CTE POS Manufacturing Teachers, RCC students and or instructors leveraging 2015-2016 Perkins PD funding for Manufacturing POS teachers and the 2016-2017 year	5.15 Students will recognize the various levels of employment available in the design and manufacturing industry.	October 2016 - June 2017	Manufacturing POS CTE Teachers of flagship schools with other manufacturing POS teachers encouraged to participate: Manufacturing POS CTE Teachers of flagship schools: GPHS Manufacturing POS CTE Teachers Jake Lear, David Brannen and Brenda Bunge, NMHS Manufacturing Design and Manufacturing POS CTE Teachers Kirstie Christopherson, Tim Ponzoha and TBD. SMHS POC CTE Teachers James Veverka and Melissa Schneyder IN-KIND commitment from SOESD and Districts leveraging Perkins Funding

G. CTE Program of Study Design (15 Points)

Activities Lead to Enhancement, Creation of a CTE POS – Lead CTE instructors from secondary and postsecondary partners will work with core academic instructors, industry leaders and community based organizations to develop and deliver curriculum to be used in the MCLs. Secondary CTE instructors will gain professional development in the curriculum for their POS and have stronger alignment between postsecondary and secondary programs. MCLs will allow burgeoning vocational programs, not yet awarded CTE endorsement, to have equipment and curriculum available that match their community college and regional partners. This will lift and strengthen current curriculums into alignment with postsecondary curriculum that is CTE endorsable as a full POS. POS instruction supports academic, technical, and employability skills.

Features of a CTE POS Are Addressed – Activities address all four core elements of a POS.

- 1. Standards & Content.* Core academic and CTE teachers together will develop curriculum and deliver instruction demonstrating infused academic content. Students will have the opportunity to experience advanced skills in manufacturing using equipment that was selected in collaboration with community college partners. Post-secondary partners and secondary teachers will review needed assessments to prepare students for certification exams. Secondary teachers and RCC instructors will develop curriculum to better prepare students in problem solving and critical thinking and adjust curriculum on a continual basis with industry partners to meet their needs.
- 2. Alignment & Articulation.* Secondary CTE instructors will work with RCC to develop and deliver content in the MCLs and at Flagship Districts. In collaboration with local industry, changes in alignment of curriculum will be adjusted to support the content of our Technical Skills Assessments (TSAs) and strengthen how workforce technical standards are met.
- 3. Accountability & Assessment.* We will compare TSA reports for 2014-2015 with those for

2015-2017 to assess our results for students who participate in each POS. We are targeting a 10% increase in technical skills attainment scores at Flagship POS.

4. Student Support Services. Students will receive career guidance information on POS areas. Career guidance documents will be available in English and Spanish and provided at career guidance centers to help provide targeted Education Plans for students. We will make appropriate accommodations to be inclusive of every participating student. CTSO students will be an integral part of the staffing plan for MCLs. MCLs will be used at events that target underserved students. The project provides a rigorous Professional Development plan, Professional Learning Community time to align with RCC's Manufacturing program, and equipment to aid in the alignment and development of the POS.

Design Addresses the CTE-R Grant Vision – Our project is innovative, will provide experiential learning, and will integrate core academic content and community resources by: using MLUs and MCLs to reach students throughout our large geographic region; partnering directly with industry to increase students' hands on learning opportunities; and increasing certifications earned by students. By improving outreach and access to CTE POS with particular attention to underserved students, we will support the expansion and growth of CTE programs and students served. The project is focused on regional high wage and high demand occupations.

A Culturally Responsive Program – This project allows current CTE endorsed Design and Manufacturing POS to extend activities that integrate science, math and engineering coupled with the latest manufacturing technologies to underserved students at an earlier age. With help from community based organizations, activities will be designed to engage, educate and inspire students to focus on continuing their pursuit of knowledge in the fields of design and manufacturing. Current flagship CTE Manufacturing POS at Grants Pass HS and North Medford

HS will train CTSO students and other CTE and core instructors to utilize the learning modules to be inclusive of underserved students. Curriculum content will be produced in collaboration with ScienceWorks Hands-on Museum that specializes in working with underserved populations. Multi-language materials will be made available to all students. The MCLs will be used during special activities that include Head Start programs, Girls in Engineering programs and Mothers' and Daughters' Science Nights sponsored by ScienceWorks.

H. High Wage and High Demand Occupations (20 Points)

High Wage/High Demand Target Occupations – For Jackson and Josephine Counties, the Rogue Workforce Partnership, in partnership with Southern Oregon Regional Economic Development, Inc. have targeted Advanced Manufacturing and Information Technology/E-Commerce as high-priority high-wage, high demand industries.

Regional Evidence of High Wage/High Demand Occupations – To determine regional high demand/high wage occupations, we asked for assistance from Ainoura Oussenbec, Workforce Analyst, Oregon Employment Department. She analyzed data from Brenda Turner, OED, Workforce and Economic Research. Ms. Oussenbec provided a table² of occupations paying more than the regional 2015 median wage and with more than the median number of total 2012-2022 openings in the region.

How Pathways/Occupations Will Be Explicit to Students, Parents, Community –The project will actively recruit non-CTE student participation by providing hands-on exploration of STEM/CTE Manufacturing and Design technologies previously unavailable to endorsed high school POS, middle schools, out-of-school and summer activities. CTE CTSO students, CTE instructors, core instructors and staff from community-based organizations will work together to craft and deliver CTE curriculum used at each of the MCL activities. Instruction will introduce

² See Appendix for table of High Wage and High Demand Occupations in our region.

non-CTE participants to the opportunities CTE Pathways offer in alignment with RCC curriculum so community college credit and Industry certifications can be earned while in high school. We will utilize multi-language literature explaining CTE Pathways and opportunities.

I. Equity (20 Points)

Historically underserved student population - Jackson and Josephine Counties never fully recovered from the crash of the timber industry over twenty years ago. Timber tax revenues declined significantly, impacting schools and local governments. Unemployment rates are historically higher than the US or Oregon.

Seasonally Adjusted Unemployment Rates³

Year	United States	Oregon	Jackson County	Josephine County
2000 (lowest)	4.0	5.1	5.6	7.0
2009 (highest)	9.3	11.3	12.8	14.5
2014	6.2	6.9	8.6	9.6
August 2015	5.1	6.1	7.3	8.5

Total population below the federal poverty level in Jackson (17.2%) and Josephine (20.2%) counties are higher than that of Oregon (16.2%) or the US (15.4%). It is even higher for historically underserved people.⁴ The poverty level decreases in proportion to increased education levels.

School District	Percent Minority Students⁵	Percent Eligible for Free & Reduced Lunch⁶
Grants Pass	21.7%	61.7%
Medford	31.0%	57.9%
Phoenix-Talent	39.0%	65.1%
Rogue River	17.2%	51.4%
Three Rivers	16.6%	62.9%

Recruitment of Underserved Students – We will develop publications in English and Spanish

³ www.qualityinfo.org, Unemployment Rate, Local Area Unemployment Statistics

⁴ American FactFinder, 2009-2013 American Community Survey 5 Year Estimates. A table with detailed data on Poverty Status in the Past 12 Months is in this application’s Appendix.

⁵ Oregon Department of Education, Reports, October 1 Enrollment by Ethnicity, 2014-2015

⁶ Oregon Department of Education, Reports, Students Eligible for Free and Reduced Lunch, 2014-2015

highlighting available programs specifically designed to be inviting to students of color, economically disadvantaged students, English language learners, students with disabilities, rural students and students who may be interested in CTE programs nontraditional for their gender. We will hold open house events in each sector of the region to provide overview information about available CTE and Career Related Learning Experience (CRLE) programs, supported by our Career Guidance Centers and with outreach to underserved students and their families. Teacher and counselor training will be conducted in each district so school adults providing system navigation coaching for students and families systematically reach out to historically underserved students to create awareness and encourage participation in CRLE and CTE. Partnering with SOESD's Migrant Education Program, the project will provide materials and training to migrant education recruitment specialists (Home-School Consultants) so historically underserved students they contact are invited to participate in CRLEs and CTE experiences.

Support, Retention of Underserved Students – Historically underserved students will receive particular support to help them successfully enter and complete CTE POS. Targeted invitations to historically underserved students will invite them to participate in CTE enrichment activities like those provided by ScienceWorks after school and during summer, including some provision of free or reduced rates. All CTE SOCTEC Representatives will receive training/coaching in the recognition of implicit bias and strategies for inviting and retaining underserved students in CTE programs. They will convey this information to all CTE instructors. The eight key questions of the OEIB Equity Lens will be reviewed by the CC4A cross-collaborative team and SOCTEC and used systematically as a discussion filter for decision-making relative to project implementation.

J. Diploma Connections (15 Points)

How Linked to Oregon Diploma Requirements – Students will participate in CTE Academies

to earn credits toward their diploma. Students participating in the CTE Programs of Study and CTSOs will receive CRLEs when assisting with the mobile classrooms as well as Work Cooperative credits from their high schools.

Historically Underserved Students – The MCLs will improve access to the historically underserved rural students in our region. Title I districts, such as Three Rivers School District, will be able to use the MCLs to deliver the curriculum and exposure to Manufacturing CTE areas to underrepresented students at their schools and during out-of-school time including event nights like Girls in STEM, Mothers’ and Daughters’ Science, Movimiento Estudiantil Chicano de Aztlán (MEChA) and CTE Academies. MCLs will actively keep students engaged and in school.

K. Sustainability (20 Points)

Strategies To Sustain This Project – Our multi-pronged approach to sustainability is below.

- 1. Cross-sector commitment and leadership.* The Southern Oregon Success (SORS) Regional Achievement Collaborative with over 40 school, higher education, business, social service and other community partners has been meeting at least monthly for the past four years with a goal of helping the region meet 40/40/20 goals with strategies to increase graduation rates and establish a college-going culture. The CC4A Hub is part of the larger SORS effort and has deep commitment and participation from all districts in our region, higher education, Rogue Workforce Partnership and community-based organizations. Each partner has had direct input and influence on the crafting of this proposal and are committed to a sustained course of action.
- 2. Leveraging media to promote sustainability.* By leveraging our established connections with media partners, our project will recognize the contributions of partners through media coverage of MCL activities they participate in, and by inclusion of sponsorship banners of each

organization on the MCLs. Outreach will educate the public about career opportunities partners offer in the STEM fields. The project will pay special attention in the recruitment of underserved and underrepresented populations by promoting planned STEM/CTE activities using multi-language flyers, and brochures, and through targeted career counseling at each school district.

3. The use of data to promote and sustain project momentum. We will show success of this new cultural mindset regarding CTE and STEM using student pre and post surveys in multi-language formats of students' knowledge of STEM careers and the CTE POS at their schools. We will track the number of CTE credits earned and graduation and postsecondary engagement rates of students significantly involved in CTE POS. These data will serve as powerful indicators to key decision-makers of the need to continue and augment sustained support of these projects.

4. Identification of other funding sources to sustain and expand efforts. Our CC4A and SOCTEC groups continue seeking funding from public and private sources to sustain and expand project activities. With the growing interest and commitment of multiple entities in impacting graduation rates and postsecondary engagement, organizations are increasingly interested in providing funding for programs that make a real difference in these key outcomes.

Outcomes, Activities, and Partner Roles – The focus of SORS is the achievement of clear outcomes. Projects yielding successful outcomes for students are more likely to receive continued, multi-sector community support. Through collaboration with our partners in the continuation of pledged donations of in-kind time and materials, and in the estimated \$250,000 in materials and in-kind time that have already been received for this project, our partners are assuring the cohort is dedicated to the success of the proposal beyond the life of the grant.

L. Communication (15 Points)

Communicating Career Pathways Options to Students – Through the introduction of CTE

Manufacturing and Design content and curriculum and STEM/ CTE technologies, we will make students aware of the opportunities of the CTE Pathways in Manufacturing and Manufacturing Design. We will provide hands-on exploration of STEM/CTE technologies previously unavailable in high school and middle school POS as well as out-of-school and summer activities. CTE CTSO students, CTE instructors, core instructors and community based organization staff together will craft and deliver the CTE curriculum used at each of the MCL activities. Staff and instructors will introduce non-CTE students to the opportunities that CTE Pathways offers in alignment with community college curriculum that can result in community college credit or industry certifications at the high school level.

Communicating the Purpose of a Career Pathway to Parents – We will provide multi-language literature explaining CTE Pathways and opportunities to students and families at each planned middle school, out-of-school and summer activity and event.

Communicating the Purpose of a Career Pathway to the Community – Information to help the community understand CTE career pathways as part of the CC4A effort will be incorporated into the media and other outreach strategies discussed in the Sustainability section above⁷.

Communicating to School Staff the Purpose of a Career Pathway – The project budget includes funding for core instructors to produce and deliver CTE curriculum in CTE classrooms and MCLs. Core instructors will become familiar with CTE Pathways and how they support student interest and focus student efforts toward attainment of degrees and certifications. Core instructors will learn the advantages of students achieving college credit in CTE subject areas that support and enhance core diploma requirements by offering real-world application of core subjects. Collaboration between CTE instructors and Career Guidance Centers will communicate how CTE POS pathways work and the importance of keeping students on chosen pathways.

⁷ The message on billboards on our established media campaign for Klamath Promise is in the Appendix.

A. Career and Technical Student Organizations (CTSOs)

SkillsUSA is currently a strong CTSSO at GPHS and NMHS. These CTSSO Members will be an integral part of staffing the Mobile Class Labs for STEM and CTE Academies and other events. This experience will increase and reinforce their technical and applied academic skills while in a leadership position, as they work with and assist their peers, younger students, and community college students. SkillsUSA students selected to assist with the Mobile Labs also will have the opportunity to apply for Cooperative Work experience and/or earn high school credit in 1/8 units for their work experience. Some of the Cooperative Work Experience (CWE) opportunities will be at Rogue Community College (RCC) and Community-based organizations hosting STEM and CTE Academies, and similar activities. Other CTSSO's may also participate in the CWE CTE courses that all participating POS will add to their POS course listing.

One goal for North Medford High School (NMHS) and Grants Pass High School (GPHS) SkillsUSA chapters is to increase their membership by 5% minimally for the 2016-2017 year. In addition, South Medford High School (SMHS) will start a SkillsUSA chapter this school year. Because many GPHS (a Title I school) SkillsUSA students were unable to afford to attend the 2015 Oregon SkillsUSA Leadership Conference, one line item in the budget helps defray costs for GPHS SkillsUSA members to attend the state or national conference.

Tours scheduled for NMHS SkillsUSA students for this school year include RCC, Lane Community College (LCC), Clackamas Community College (CCC), Portland Community College (PCC), Portland Culinary Art Institute, University of Oregon, Boeing Industries of Portland, Erickson Air-Crane, Naumes Inc. and Camp Withycombe, home to several Oregon Army National Guard (ORARNG) military units. GPHS tours scheduled for the 2015-2016 school year include RCC, MasterBrand Cabinets, CCC, PCC and Camp Withycombe.

B. Middle School Connections

Making STEM and CTE relevant are a critical component of all the activities that will be made available to both high school and middle school students across our region through the use of the Mobile Class Labs. Statistics show students that experience academic relevance early in their studies are likely to be more engaged and motivated in school. Because they are engaged, they are therefore more likely to obtain stronger outcomes throughout their academic careers. The earlier that students experience this relevance in the educational process, the sooner they are able to build on the basics in core academics and therefore better understand complex concepts.

The STEM: Manufacturing by Design project utilizes Mobile Class Labs (MCL) to allow middle school students the opportunity to experience CTE Programs of Study available in high schools. The project is designed to allow teachers in middle school to collaborate with high school CTE teachers to build curriculum as early as grades 4 and 5.

As teachers work together, curriculum can be built for each grade level integrating core academics in project based assignments that utilize MCL as well as flagship manufacturing facilities. High school CTSO students will also be afforded cooperative work experiences that provide opportunities to work with teachers at the middle school to deliver instruction utilizing the Mobile Class Labs.

C. Out of School Time Programming

The project is designed to allow high schools and Rogue Community College to provide STEM Academies and CTE Academies. These out of school and during summer academies will be available for students in various grade levels to inspire students to continue in CTE programs of study and allow them to see the post-secondary connections at Rogue Community College. Our partnership with ScienceWorks Hands-On Museum will provide even more out of school time for activities and experiences for students of all ages. ScienceWorks will host the Mobile Class labs for a total of eight weeks during the course of the summer as well as two weeks during the school year. Because the Mobile Class Labs will be staffed in part with POS CTE students, the academies will offer additional out of school Career Related Learning Experiences, Cooperative Work Experience credit and leadership opportunities for CTSO and CTE POS students. STEM activities hosted by ScienceWorks will impact students throughout the region. The motto for ScienceWorks, “If school is out, we are open”, says it all.

D. Focus on Regional, Statewide or System Changes

The STEM: Manufacturing by Design project works hand-in-hand with the Southern Oregon Regional College for All Initiative to strengthen Pathways for all students within Josephine, Jackson and Klamath counties by exposing them to and advising them of college and career opportunities within their own counties. The project supports college and career centers within the Medford, Grants Pass, Three Rivers and Phoenix/Talent school districts by exposing *all* students to specific STEM and CTE technologies and careers that are available within our local manufacturing industries.

This project commitment with ScienceWorks Hands on Museum to create curriculum to reach underserved/underrepresented K-8 students from elementary and middle schools across the region with STEM and CTE curriculum is not permitted through traditional Perkins funding streams. As our region is rural, and transportation of students has always been an issue in affording them Career Related Learning Experiences (CRLEs), 40% of this project is dedicated to creating class laboratories that are mobile in order to reach as many students in as many school districts as possible. In addition to providing CRLEs for in school activities, both mobile labs will be used for out of school STEM and CTE academies.

Both of our community college partners, RCC and KCC, have pledged to provide availability to equipment for the Mobile Class Labs and professional development training for CTE instructors in order to deliver curriculum with required size and scope to match the labs' inventory. In the future, as the Mobile Class Labs inventory grows to incorporate other Programs of Study content, our community college partners will be instrumental in assisting in the development of curriculum matching postsecondary offerings.

