

APPLICATION COVER PAGE

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

Project Name: Scio CTE Expansion
Amount Requested: \$392,125

Project Director: Rex Lowther and Krysta Sprague		
District, School or ESD: Scio High School		
Address: 38875 NW 1 st		
City: Scio	State: OR	Zip: 97374
Phone: 503-394-3276	Email: rex.lowther@scio.k12.or.us Krysta.spague@scio.k12.or.us	

Grant Fiscal Agent Contact: Gary Tempel		
District, Charter School or ESD: Scio School District		
Address: 38875 NW 1 st		
City: Scio	State: OR	Zip: 97374
Phone: 503-394-3261	Email: gary.tempel@scio.k12.or.us	

Superintendent: Gary Tempel		
District or ESD: Scio School District		
Address: 38875 NW 1st		
City: Scio	State: OR	Zip: 97374
Phone: 503-394-3261	Email: gary.tempel@scio.k12.or.us	

	Participating High School or Middle School Name (add additional rows as needed)	Lead Contact Name	Grade Levels	Student Enrollment
1.	Scio High School	Rex or Krysta	9-12	290
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				

Application Narrative

A. Project Abstract

The Scio School District's Agriculture and Forestry programs seek grant funded enhancements to engage students in contextual learning across a broad range of industry recognized agricultural based sciences to equip students with personal, trades, and professional skills needed for success in agricultural and forestry careers. Students have the opportunity to earn college credit through Linn/Benton Community College that can be applied to further postsecondary training and ultimately, a degree or trades certificate. This project enhances a successful yet aging and space constricted program, to increase student participation from middle school throughout high school. Students will receive relevant training in trades' related studies, including but not limited to greenhouse and crop sciences, small engines, welding, forestry, leadership and animal sciences. The project will enhance the learning environment through partner collaboration and hands-on practical and meaningful agricultural projects. Strong Business partnerships will mentor students through practical experience managing business projects, from early conceptual design to marketing and sells, Use of the National Career Readiness Certificate Assessment, will measure the programs and individual student's success.

B. CTE Revitalization Grant Vision

Innovation

While serving our communities fundamental need in CTE, the proposed enhancements to the learning environment will encourage and better support innovation

among students. By re-envisioning and repurposing the learning environment, students will immediately have increased opportunities to engage in agricultural, trades, and forestry based enterprises. Expanded and up to date facilities and equipment will create a contextually relevant and technologically current learning environment that encourages hands on practical as well as intellectual skills based learning. When coupled with new and existing business partnerships, the updated facility will allow educators to: cultivate student curiosity, encourage student innovation and build personal, technical, and professional skills, around the foundational knowledge and experience necessary to pursue agriculturally based high wage and high demand career opportunities. Students are eager to learn and get involved, with participation beginning in middle school, facility constraints and inadequacies have historically limited student opportunities. Through the funding of this grant request our educators and partners will be able to encourage curiosity and the growth of our students knowledge, skills, and abilities.

Integration

The vision of this grant proposal is to bring together new partners, new equipment, and a newly envisioned space to enhance and cultivate student learning and curiosity toward future high wage high demand (HWHD) careers in Agricultural Sciences.

The first phase of the proposal identifies community partners in order to integrate community resources with the school's programs. Phase one sets the stage for future integration of CTE programs and community partnerships within the classroom and learning laboratories, and provides opportunities for work experience and access to

career professionals. The second phase of the project re-envision the learning laboratories, bringing space efficiencies and expansions to the agricultural building and greenhouse facilities. The expansion will better meet student needs by ensuring adequate space to educate the growing student population. The third phase of the proposal will update aging trades' equipment to ensure student learned knowledge, skills, and abilities are conducive to current industry practices and technology. The fourth phase will leverage the prior phases bringing the vision into practice through collaborative learning that inspires innovations and cultivates the curiosities of our students. Students will put their academic knowledge to work, supported by community mentors, building their skills and abilities as they look toward future careers in agriculture or forestry.

By integrating our core academics and CTE educational programs with community partnerships centered around a newly envisioned learning environment and tools, Scio school district's revitalized CTE programs will be strengthened and better able to guide our students on a course toward HWHD careers in agricultural sciences.

Expansion and Growth

The current CTE programs at Scio High School are limited, with caps for welding and woodshop classes are at 15 students each. We have strong participation in our Agricultural and Forestry classes with about 26 percent participation. These classes support HWHD jobs in welding and construction, and give students an opportunity to prepare for careers in those areas. Envisioned expansion and equipment upgrades will provide for greater capacity and a higher number of students served. Scio High School has grown by around 70 students in the past ten years, with students transferring to our

school to take advantage of our CTE programs. Expansion and opportunities provided by this grant will allow the CTE programs to serve a greater number of students.

Experiential Learning

Internships and mentorships with professionals and the presence of new equipment coupled with more space allows greater opportunity for student participation within an enhanced learning environment. Experiential learning is a backbone of CTE programs. Students learn foundational technical and trades skills while they build things out of metal and wood, grow food, make lumber, sell products, take care of animals, and work together. Scio School district will also leverage the position of its female Ag teacher to encourage participation in technical related courses by female students. This opportunity has the potential to change the male dominated student culture within the CTE programs, encouraging traditionally underserved students the opportunity to learn, experience, and pursue career work in these areas.

High Wage and High Demand

High wage and high demand (HWHD) jobs are integrated in our CTE programs. Jobs in Forestry, Agriculture, welding, and woodshop are growing. One of the largest areas of job growth is management in each of these areas. By allowing more space in the shops and the greenhouse, large projects can be managed by students. This unique opportunity gives students knowledge that employers are looking for – someone who can manage others. Students have opportunities to act as farm, shop and greenhouse managers. Later in the grant, we will show numerous HWHD jobs for which Scio High School CTE is preparing students.

Scio High School CTE Summary

The CTE programs of Scio High School are strong programs. The program introduces many areas of forestry to students from technical skills like map reading and tree measurement to tree climbing and chainsaw operation. We also have a small engine repair class, which teaches students to diagnose and repair small engine problems. The woodshop teaches students basic carpentry skills and safety. Students will take what they have learned in small engines to keep the equipment for forestry in working order. Students also use the lumber made by the forestry class to make projects in woodshop. Students can combine knowledge from welding to make combination metal and wood projects.

We expect to see increased student involvement and have set a goal of a 25% increase in class participation with a 10% increase in female participation in offered CTE courses in the 2016-17 school year. Student success will be measured using the Career Readiness Assessment Test. We have set a target performance measure of 98% success for all students completing 5 years within a CTE program. All of our outcomes and activities we will be tracking, explained later in this grant proposal, relate in some way to our overall vision of Scio High School CTE.

The project will have a significant impact on the way students experience CTE. Students will be able to cut up a tree, make some lumber, dry the lumber, and then use that lumber in a building project. Welding students will be able to make complex parts to build projects and more students will be able to experience projects with the expanded room. Greenhouse students will be able to grow more plants, be more involved, and have more room to expand on current knowledge of the greenhouse.

With increased class sizes, more students than ever will be able to participate in CTE courses at Scio High School. As a result, a greater number of historically underserved students will be able to enroll in the CTE classes. The newly envisioned learning environment coupled with the presence of a female agriculture teacher has the potential to change the male dominated student culture within the CTE programs, encouraging traditionally underserved students to explore their curiosity and take the opportunity to learn, experience, and pursue careers in these areas. Scio high school will capitalize on marketing initiatives at local community colleges which are centered on attracting women toward technical and trades certificates or degree programs and promote female participation by highlighting transferable college credit opportunities available within the CTE curriculum.

C. Partnerships

Currently, SHS CTE has 10 business and industry partners, each of which is connected to HWHD careers in agriculture, forestry, welding or woodshop. Partners began meeting with Scio High School's administration and CTE teachers in the spring of 2015, discussing the current CTE program and what business and industry leaders were looking for in their prospective employees.

All partners have committed to maintaining communication and meeting regularly through the grant process. In addition, several partners have more specialized roles. Dan Cooper will be helping throughout the entire grant process with the construction and building infrastructure. Myles Ralston with West Coast Industrial Systems will be a regular volunteer and source of information throughout the grant process and beyond.

Scio FFA Alumni & Friends have committed to donating over \$7,000 to greenhouse and program needs.

Beyond the grant, there are a variety of roles that our partners will play. Scio FFA Alumni will provide countless hours of volunteer work, in addition to monetary support whenever needed. Former alumni President Myles Ralston often donates his free time to the welding classes, coming in when he is able to assist with projects. Other alumni members come in as guest speakers throughout the year. Each of these roles were established prior to the grant, and will extend far beyond the grant.

Oregon State Bridge Construction, Inc. is another partner that will extend beyond the span of the grant. Craig Gries, President of OSBC, states that they will be able to offer tours of their job sites every year, as well as coordinating paid internships and job shadow experiences. Another partnership that is well established and will continue beyond the grant is the partnership with Industrial Welding Supply, Inc. Sam Flande at IWS in Albany is always available for advice and counsel regarding new or existing equipment.

We have established avenues for CTE students to pursue “Student Worker” positions at the Oregon Department of Public Safety Standards and Training’s facilities division (DPSST). To date, four (4) Scio Students have worked temporary jobs within the agency, providing students with practical on the job training in a professional work environment. Such opportunities put the foundational skills learned within the CTE programs, such as welding, carpentry, arborist, and turf and wetland management skills, to use. Four (4) additional students have job shadowed within the agency. The continued partnership will provide additional opportunities for future students as well as

newly established mentorships program for students, giving them access to professionals working in trades and management positions associated with CTE careers.

DPSST is an equal opportunity employer and all students are encouraged to apply for available positions, job shadows and mentorships. To date, two female students have been held a student worker position at DPSST and two (2) female students have job shadowed. Educators will encourage and help to identify female and other underserved students to participate in these opportunities.

Currently, Scio High School CTE programs are articulated for college credit through Linn Benton Community College. In particular, the agriculture program is able to offer 18 college credits to students who complete all four years of agriculture classes with B's or higher. In this case, a memorandum of understanding has been completed and is on file. The Scio High School welding program is currently working with LBCC to set up an articulation agreement to offer up to 3 college welding credits as well. Due to the HWHD nature of many positions in the welding industry, this articulation would make a marked improvement in the right direction in terms of directing students toward these positions.

D. Project Outcomes

The overall goal of the Scio CTE programs are to provide students with access to skill sets that lead to educational and work opportunities within STEM-related careers. We hope that with the help of this grant, Scio High School CTE is able to provide a wider range of students with the updated technology, facilities, and skills that will filter directly into HWHD within the agriculture, welding, woodshop, and forestry industries.

Through this project, we will expand shop sizes and replace some of the outdated machinery in our shops. Specifically, we will purchase a TorchMate CNC plasma cutter, eight new welders, a Scotchman cold saw, a 30x60 teaching greenhouse, and a Dosatron fertilizer injector. All of this new equipment will enable Scio CTE to achieve the outcomes listed below.

This project will produce the following outcomes and progress markers:

Outcome 1.1 - Increase Number of Business Partners Within Each Subject Area

Increase the number of business partners from 10 current partners, to 15 partners by June of 2016.

Outcome 1.2 - Strengthen Relationships with Partners Through Increased Communication

Increase communication with partners from a current “as-needed” basis to once per month, or 12 contacts per year.

Outcome 2.1 - Increase Available Student Enrollment in CTE Classes

By increasing the sizes of the shops, we will increase our maximum class enrollment in each of the shop classes from 15 students to 20 students. This equates to a total increase of 25 students per semester, or 50 per school year. With a school enrollment of 305, this is an additional 16% of the school population each year enrolled in shop classes.

Outcome 2.2 - Increase Shop Safety for Students

As a result of increased shop size, overall shop safety will be increased for students and instructors alike.

Outcome 2.3 - Offer Classes After School in the Welding Program

The welding program will develop an after-school program that allows students to work in the welding shop after school 2 days per week, therefore increasing the time students are able to improve and enhance their technical skills and knowledge.

Outcome 3.1 - Increase Rigor in Technical Content

Scio High School will continue to increase technical and academic content of the agricultural science, welding and forestry areas. For example, in welding, each student will learn a CAD software program. This skill not only enables students to show proficiency in math and science, but it also provides students with a real-life skill set that potential employers look for in prospective employees.

Outcome 4.1 - Increase Industry Guest Speakers, Tours, and Demonstrations

Scio CTE classes will increase visits from business and industry personnel from 1-2 per school year to 5 per school year.

Outcome 5.1 - Improved Skills for Students Upon Graduation

By the end of the first year, the welding program will be articulated with LBCC to offer welding credits. By the end of the second year, 5 students will graduate with college welding credits through LBCC.

Outcome 5.2 - Increased Employer-Based Projects

The agricultural science and forestry programs will partner with local government and local businesses on projects that can be worked on in the classroom each year.

Outcome 5.3 - Increased Management Skills

By increasing the number of student managers of facilities from 2 to 5, more students will gain important managerial skills that are desired in high wage, high demand occupations.

E. Evaluation Progress Markers and Results

Area 1 - Improved and sustainable partnerships with business, industry, labor, and educational providers.		
Project Outcome	Progress Markers	Expected Results
1.1 Increase number of business partners within each subject area	Increase partnerships from 10 to 15 by June 2016	<ul style="list-style-type: none"> • Increased support for the CTE program • 15 partners by June 2016
1.2 Strengthen relationships with partners through increased communication	Increase communication with partners from a current “as-needed” basis to once per month (12 contacts per year) via email, meetings, and visits to the school	<ul style="list-style-type: none"> - Increased support for the CTE program - Regular contact will result in more job shadows, internships, and possible jobs in the future
Area 2 – Improved student access to CTE programs of study with particular attention to historically underserved students.		
Project Outcome	Progress Markers	Expected Results
2.1 Increase available student enrollment in CTE classes	Increase maximum class capacity from 15 to 20 in shop classes	Shop classes will see higher enrollment for the 2016-2017 school year, which will maintain itself in future years
2.2 Increase shop safety for students and instructors	Decrease safety incidents per year in shop classes	<ul style="list-style-type: none"> - Shop classes will have a decrease of safety related incidents per year by the end of the 2016-2017 school year - Records will be kept of safety incidents in order to track this data
2.3 Offer classes after school in the welding program	Develop an after-school program for students 2 days per week	Students will log more hours in the welding shop gaining technical skills and knowledge due to the after-school program.
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.		
Project Outcome	Progress Markers	Expected Results
3.1 Increase rigor in technical content	<ul style="list-style-type: none"> - Woodshop: Students will increase projects from 4 per semester to 8 per semester - Welding: Students will increase welding joint assignments from 6 per semester to 18 per semester 	<ul style="list-style-type: none"> - Students will attain more technical knowledge and skills. - More students will become fluent in CAD software.

	- Greenhouse: Students will incorporate advanced horticulture techniques into their classes	
Area 4 – Increased student awareness of career opportunities through exposure to employers.		
Project Outcome	Progress Markers	Expected Results
4.1 Increase industry guest speakers, tours, and demonstrations	Increase visits from business and industry to 5 per school year	Students will become more aware of career opportunities in high wage, high demand fields, and more students will express an interest in these career fields
Area 5 – Improved ability to meet workforce needs in the region with a focus on high wage and high demand occupations.		
Project Outcome	Progress Markers	Expected Results
5.1 Improved skills for students upon graduation	Welding: Ensure 5 students graduate with college welding credits through LBCC	Welding: 5 students will graduate with welding credits through LBCC by June 2017
5.2 Increased employer-based projects	Every welding, greenhouse, forestry & woodshop student will participate in at least one community project each year.	By June 2017, every welding, greenhouse, forestry and woodshop student from the 2016-2017 school year will have participated in a community project
5.3 Increased management skills	The number of student managers of facilities will increase from two (2) to five (5) by September 2016, and will maintain that number in future years	More students will gain important managerial skills that are desired in many high wage, high demand occupations

F. Activities and Timeline

Activity	Outcome(s) addressed	Timeline	Person(s) responsible
Engineer all plans	2.1, 2 .2, 3.1, 5.2	1/16 – 4/16	Dan Cooper
Acquire necessary permits	2.1, 2 .2, 3.1, 5.2	1/16 – 5/16	Dan Cooper
Order all new equipment	2.2, 3.1, 5.1, 5.2	1/16 – 6/16	Krysta Sprague & Rex Lowther
Construction – building	2.1, 2.2, 5.2	6/16 –	Dan Cooper –

infrastructure		9/16	Contractor
Complete training for new equipment	3.1	6/16 – 12/16	Krysta & Rex
New greenhouse construction	2.1, 3.1, 5.1, 5.3	9/16 – 11/16	Krysta Sprague
Tear down old greenhouse, move existing	5.1, 5.3	9/16 – 11/16	Krysta Sprague
Compound construction	5.1, 5.3	6/16 – 03/17	Krysta & Rex

G. CTE Program of Study Design

Through this grant, Scio High School will enhance the Forestry and Agricultural Science - Welding Programs of Study (POS), both of which are fully approved by the State of Oregon. Both were updated and approved in 2015 and both meet all five elements necessary for a CTE program - standards & content, alignment & articulation, accountability & assessment, student support services, and professional development.

The Agricultural Science - Welding and Forestry POS’s classes are fully aligned with State standards, the Oregon Skill Sets, and are designed the meet industry-recognized standards and employability skills. Currently, the Agricultural Science - Welding POS offers two Beginning Welding courses and one Advanced Welding course. The advanced class is in the process of being articulated with Linn Benton Community College for college credit.

Given the coursework and partnerships with both local industries and community colleges, there can be little doubt that these two programs of study are providing a pathway for students to pursue HWHD jobs in the region.

H. High wage and High Demand Occupations.

This grant specifically targets numerous HWHD occupations, spanning from the forestry and woodworking industries to the welding and horticulture industries. HWHD career positions can be matched with every component of the Scio High School CTE Program that is featured in the grant proposal.

Within the welding industry, there are numerous HWHD jobs that Scio High School welding classes can help steer students towards. Machinists have a 26.8% projected growth from 2012-2022. Sheet metal workers have a 20.9% projected growth, structural metal fabricators and fitters - 17.6%, plumbers/pipefitters/steamfitters – 16.9%, welders/cutters/solderers/brazers – 14.3%, and automobile body repairers – 12.1%. Each of these positions are available either with a high school diploma, or with some non-degree post-secondary training.

Another area within the grant focus is in small engines. Some careers include automobile mechanics and technicians – 10.9% projected growth, bus and truck mechanics – 13.7%, and industrial machinery mechanics – 32.9%. A high school diploma or some post-secondary training will prepare a student for these positions.

Within the area of horticulture, farmers, ranchers, and agricultural managers have a 20.1% projected growth by 2022. Also, soil and plant scientists, which require a bachelor's degree, have a projected growth of 16.6%.

The forestry component of Scio High School's CTE program prepares students for HWHD jobs as well. Logging equipment operation is expected to grow 32.6% by 2022. Additional HWHD fields within forestry include surveying and mapping technicians – 16.6%, foresters – 10.4%, and tree trimmers and pruners – 26.3%.

Lastly, the woodshop component of Scio's CTE program can be tied to HWHD jobs. Carpenters have a projected growth of 32.5% by 2022, and construction workers a projected growth of 24.2%. Construction manager positions, while requiring a associate's degree, have a projected growth of 25.5%.

All of the information regarding HWHD jobs was researched on QualityInfo.org Career Explorer, or from the Oregon Employment Department.

Within the curriculum of each of these instruction areas, career units are incorporated that describe and explain the pathways that lead to these HWHD occupations. More specific information regarding communication of these career pathways can be found in Section L: Communication.

I. Equity

Due to the fact that Scio High School has a population consisting of 82% white students, recruiting historically underserved students is difficult. However, Scio High School does have approximately 11% of the population identifying as students with disabilities. When looking at the target courses within this grant proposal, approximately 16% of students enrolled in CTE courses classify as needed some sort of special accommodations.

This project intends to recruit historically underserved students in a variety of ways. By expanding the sizes of the shops, we are increasing enrollment possibilities for many students, including students with disabilities, female students, and economically disadvantaged students. Development of an after school program for the welding program will provide support of historically underserved students. Students will be able to spend additional time on projects as needed, receive more specific one-on-

one assistance, and also spend time in the shop if they need a place to go after school. As a result of this extra time, more students will remain in the welding class and progress on to the higher skill levels.

Due to increased class sizes, historically underserved students are not only more likely to get into beginning classes such as Beginning Welding or Beginning Woodshop, but they are also more likely to get into the Intermediate and then Advanced classes for these subject areas. Allowing more students into each level of shop classes is one way we intend on retaining historically underserved students.

J. Diploma Connections

All of the classes offered through the Welding, Woodshop, Forestry, and Agriculture Programs of Study are designed to meet the state and school district diploma requirements. In addition to serving as specific diploma requirements, these classes also offer targeted lessons in core academic work. For example, incorporating math into welding introduces math concepts through a practical application that also connects to their projects in class. Career-related learning opportunities, such as job shadows, internships, and in-classroom projects, will be increased through this project. These opportunities support Essential Skills.

Scio High School offers a number of opportunities for students to meet their Extended Application, or Senior Project, requirement through class work. For example, the State FFA degree that students earn through class work and work in the CTSO FFA meets Scio's EA requirement. The State FFA degree can be earned through time and activities completed in the welding shop, woodshop, forestry class or in the greenhouse.

As a result of this project, historically underserved students also have an opportunity to meet their EA requirements through complex projects in the shop.

Historically underserved students have additional opportunities to achieve the Oregon Diploma through this grant. Due to our partnerships, we will have greater opportunity for students to experience career related learning opportunities such as internships, job shadows, and projects.

K. Sustainability

The community of Scio is strongly supportive of Scio School District and its programs. As a result of our communication, we will gain additional financial, volunteer, and material support.

Not only is the community strongly supportive of Scio High School and its CTE programs, but Scio School District itself is highly supportive of CTE as a whole. Scio School District allocates a considerable budget to the CTE programs, which covers equipment maintenance, repair, consumable welding supplies, and professional development expenses. The majority of costs associated with this project are one-time capital costs. We are confident that we will be able to maintain the new and improved CTE programs through District support and funding. Furthermore, we will continually work to build relationships with local businesses and community members in order to ensure that we have the necessary supplies for our students to be successful.

L. Communication

As a small community, Scio High School CTE has access to many local media outlets, including newspaper, radio, school newsletters, and school websites. The CTE program will utilize all of these avenues to display the work of our students, showcase

individual successes of students, and to acknowledge the support of our business and industry partners.

We will provide information for the Scio School District's quarterly newsletter, which is sent to parents, teachers, and community members. We will also make sure information is accessible online via the High School website, in addition to the Scio FFA website. These websites are also easily accessed by parents, teachers, and community members alike.

Further, we will utilize social media to communicate the progress and success of our programs with the community. Students will be encouraged to post their projects, experiences, and successes on their own social media accounts, including Facebook, Instagram, and Twitter. Student work will be showcased on the Scio FFA Facebook page, and we will work to develop a Facebook page specifically devoted to promoting the work of the CTE classes. Through social media, we will be able to communicate with students, school staff, parents, and the community all at once.

Career units will be incorporated into each applicable class that specifically outlines HWHD jobs that are available to students in the CTE program. Also, print media will be available to all students as well as staff in both the agriculture and the forestry classrooms. These include brochures for school and post-secondary training, career information, and flyers for industry events. Another way we will communicate these career pathways to the public is through local media sources. This includes utilizing the Albany Democrat-Herald, our local newspaper, to update the public on career pathways for which we are preparing students.