

### CTEA 2016-2017 REQUEST FOR PROPOSALS

Title of Project: Replacement SCBA Cylinders

Department/Program: Public Safety-Firefighter I Academy

Submitter's Name: Randy Collins Date: Feb 19, 2016

Project Type (check all that apply)

- Professional Development
- Instructional Equipment/Materials
- Program/Curriculum Development
- Program Marketing/Outreach
- Program Administration/Coordination (limited time constraints apply)
- Programs/Services for specialized populations
- Facilities rental/leasing (limited time constraints apply)
- Other (specify): \_\_\_\_\_

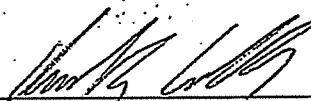
Faculty/Staff involved: Randy Collins

TOP Code(s): 2133.50 Amount Requested: \$24,673.25


Fall 2016 Advisory Meeting Date: Nov 5, 2015  Did Not Meet Fall 2016

Spring 2017 Advisory Meeting Date: April 7, 2015  Did Not Meet Spring 2017

Signatures:

Submitter: 

Date: 2/19/16

Department Chair: 

Date: 2/19/16

Supervising Administrator: 

Date: 2/19/16

Cluster: PSFC

Priority: 1

## NARRATIVE SUMMARY

### 1. Describe the proposed project.

*As a Regionally Accredited Training Center by the State Board of Fire Services, the Fire Technology program conducts three, Firefighter I (FFI) academies annually. Integral to the academy instruction is the use of Self Contained Breathing Apparatus (SCBAs) which are part of the "Core" curriculum and are a required piece of personal protective equipment (PPE). To that end, each recruit is assigned a SCBA which becomes their responsibility and is used for the following instructional units: SCBA (2-3), Structural Fire Suppression (5-10), Firefighter Survival (6-1) and Passenger Vehicle Fires (7-2) to name but a few.*

*Although we are fortunate to have acquired a sufficient number of SCBA's through donations from local fire agencies, we are always in need of the air cylinders they use. This is due to the fact that they are of composite construction and have a 15 year service life. Since all are donated and have between 10 and 12 years of previous use, the cylinders become unusable within a few years, necessitating their replacement. To mitigate this problem, \$24,673.25 is being requested to purchase 50 aluminum cylinders that have an unlimited service life and will allow uninterrupted use of our SCBA's. The outcome of the program is to provide a sufficient number of SCBA's to allow each student to be assigned one for the duration of the academy so they will have unlimited use and practice and can use them in every training as specified in the curriculum. This will also permit us to satisfy the State requirements for FFI.*

*The excerpt from the PRPP is below.*

**1. SCBA Bottles:** While we have been fortunate to have received generous donations of SCBA's from fire agencies, it comes with a built-in problem. For the last 20 years, most manufactures of SCBA's have transitioned from steel and aluminum air bottles to composites for their weight savings. However, because of their design, composite bottles have a service life of 15 years. Since almost every bottle that is donated to the program already has at least 10 years of use, they very quickly become unusable. To that end, over the last few years, we have been working to replace our entire inventory of composite bottles (over 110). As a unit required to meet our accreditation with State Fire Training, it is essential these are replaced in a timely manner so this training is not interrupted.

### 2. Describe how this activity will improve the program, instruction, student success, certificate completers and/or students gaining employment.

*The proficient use of SCBA's has been considered an essential skill in the fire service and of equal importance, is required under Federal and State Health and Safety regulations. To reinforce the importance of their use and maintenance, each Academy student is assigned a unit for the entire semester which they take ownership and full responsibility (just as what occurs in the work setting). If our inventory of bottles decreases, we will be forced to curtail this practice and have to ration the bottles, limiting their use. The implementation of this project will improve our program by allowing us to continue this practice and allow each student, regardless of their background, the opportunity to continually use this equipment just as they would as an employee with a fire agency. In doing so, it will better prepare them for employment.*

*Of equal importance, it will also promote the success of our students in that it will allow them to meet the requirements in the FFI curriculum and subsequently meet the baseline for employment as a firefighter in the California.*

*The project aligns with the promote student success strategy identified in the "Doing What Matters" in that it specifically addresses two of the identified strategies. Gives priority for jobs and the economy and Promotes Student Success. The project gives priority for jobs in that over the course*

of the next 5 years, the Bureau of Labor Statistics estimates firefighter hiring to increase 18% nation-wide and 17% in California. Over the last three years, we have exceeded the California estimate and had 18% of our academy graduates hired as either Full-time or Seasonal Firefighters with a much higher figure serving as Reserve or Volunteer Firefighters who work as part-time employees and receive stipends for their work. To prepare students to meet this demand, it is essential they are trained to meet the minimum standard to obtain a paid job (Firefighter I certificate) of which demonstrating the proper use of SCBA's is part of the curriculum (Section 2-3).

3. Please summarize how your RFP proposal relates to the following CTEA recommendations.

*The proposed project relates to the following CTEA recommendations:*

- *Working in Teams: Because Federal Law requires all persons wearing SCBA's in hazardous atmospheres to work in teams (known as the "Two in-Two out Rule"), the project will allow us to continue to train to this standard and reinforce the team concept that is essential to structural firefighting activities (and required under Federal statute).*
- *Develop More Work-based Learning Experience in CTE Fields: Use of SCBA's is a firefighting skill that is essential not only for the FFI curriculum, but to the agencies where the students will be placed (either as interns, volunteers or paid firefighters). Nothing helps develop these work-based skills more than having the tools needed to master them, including practicing the "Two in-Two out" rule (mentioned above).*
- *Encourage Training for "Non-traditional Careers": As instructional tools that are "hands on", the grant will be particularly helpful to "non-traditional students as it will give them the opportunity to use their SCBA until they have mastered its use including remediation if necessary. This is particularly relevant since the grant will allow the students to continue to take their SCBA home and conduct unlimited practice. In that respect, it will provide a much greater learning experience than if their use is rationed. This will be particularly helpful when dealing with students who respond better to psychomotor learning such as economically disadvantaged and limited English students.*
- *Working Closely with Industry Partners: Our industry partners (the Fire Advisory Committee) feels strongly enough of the need to obtain this equipment that it has been agendaized for our April 7<sup>th</sup> meeting when it will be voted on (in past years this would have been approved but due to the earlier deadline, this has not occurred).*
- *Develop Programs to Meet the Growing Latino Population: While not specifically developed to serve Latino students, because we have experienced an exponential growth rate with this demographic (150% over the last three years), the project will well serve our Latino students.*

*It is also worth noting that the use of SCBA's has been part of the "Core" curriculum for Firefighter I since its inception. By having these cylinders, it will improve the success of our students in that it will allow them to meet the requirements in the FFI curriculum and subsequently meet the baseline for employment as a firefighter in the State.*

4. Is this project's CTEA funding leveraged with other non-CTEA funds? If so, please describe.

*While not leveraged by other non-CTEA funds, it is worth noting that because all of our SCBA's were donated (an estimated \$130,000 value), this grant is in effect leveraging this donation since it will allow us to continue to use the SCBA's for the foreseeable future. In addition, because we are an educational institution, we qualify for special pricing which is reflected in our quote.*

5. If your proposal request cannot be fully funded, what is the minimum funding level needed to accomplish project goals? *Prioritize the proposal objectives with funding.*

*If funding for the full \$24,673.25 is unavailable, funding 30 of the cylinders (for \$14,803.95) would provide the quantity needed to continue issuing SCBA's for the entire semester for an*

additional two years (when the majority of our existing bottles reach their expiration date).

1. Which of the following Chancellor's Office "Doing What Matters" industry sectors does this project align? (check all that apply)

- Advanced Manufacturing
- Advanced Transportation & Renewables
- Agriculture, Water, & Environmental Technologies
- Energy (Efficiency) & Utilities
- Global Trade and Logistics
- Health
- Information & Communication Technology (ICT)/Digital Media
- Life Sciences/Biotechnology
- Retail/Hospitality/Tourism "Learn & Earn"
- Small Business/Entrepreneurship

X Other (specify): Student Success

*The project aligns with the "Promote Student Success" strategy in the Doing What Matters in that it specifically addresses two of the identified strategies. Give priority for jobs and the economy and Promotes Student Success. The project gives priority for jobs in that over the course of the next 5 years the Bureau of Labor Statistics estimates Firefighter hiring to increase 18% nation-wide and 17% in California. Over the last three years in our academies, we have exceeded the California estimate and had 18% of our academy graduates hired as either Full-time or Seasonal Firefighters with a much higher figure serving as Reserve or Volunteer Firefighters who work as part-time employees receiving stipends for their work. To prepare students to meet this demand, it is essential they are trained to meet the minimum standard to obtain a paid job (Firefighter I certificate) of which using SCBA's are required in curriculum sections: 2.3 (SCBA's), 2.5 (Operating at an Emergency), 5.9 (Structure Fire Search & Rescue), 6-1 (Firefighter Survival) & 7.2 (Passenger Vehicle fires to name but a few.*

## PRIORITY REQUIREMENTS FOR OCCUPATIONAL PROGRAMS

*(Legislation requires that each funded TOP Code must meet all of the following nine requirements)*

Briefly describe how this project meets these requirements.

1. Strengthen the academic, career, and technical skills of students participating in career and technical education programs through the integration of academics with career and technical education programs through a coherent sequence of courses.

*The project will strengthen the academic, career and technical skills of the students by providing the equipment needed to become proficient in the use and maintenance of SCBA's. They are also an important component to a progression of learning in that they represent a prerequisite skill that must be mastered prior to participating in a number of academy topics including; Operating at an Emergency, Structure Fire Search & Rescue, Firefighter Survival, Passenger Vehicle Fires and Team Tasks. In that regard, they allow to deliver a sequence of instruction that not only builds upon itself, but will permit us to fulfill the requirements identified in the FFI curriculum.*

2. Link career and technical education at the secondary level and postsecondary level by offering the relevant elements of not less than one career and technical program of study (*culminating in a certificate, degree, or transfer pattern at a community college*).

*The link between career and technical education at the secondary and postsecondary level already exists through our relationship with the Napa High School ROP program. We are currently investigating ways to expand replicate the program at El Molino HS in Forestville. Last year we also began a partnership with Windsor High School to have their Work Experience program observe our fire academy scenario days. We have also sponsored field trips to the PSTC and provided surplus instructional equipment to Napa to assist their program. As a core competency in the academy, demonstrations and evolutions where SCBA's are used can serve as an effective tool to promote interest in the program amongst ROP students. To that end, having this equipment will help fulfill a training need at the secondary and post- secondary level.*

3. Provide students with strong experience in and understanding of all aspects of an industry, which may include training of career and technical education teachers, faculty, and administrators to use technology (*which may include distance learning*).

*Because SCBA's are used in so many aspects of the profession, there are few instructional aids that provide students a stronger experience and understanding of the industry. As mentioned above, in the FFI curriculum SCBA's are used in the following units; Operating at an Emergency, Structure Fire Search & Rescue, Ventilation, Firefighter Survival Passenger Vehicle Fires, Team Tasks, and Live Fire Training. This grant will provide us the inventory to permit students to continue to use SCBA's for all of these training units.*

*In addition, since our equipment is also available to other staff and outside agencies, it will also provide us the opportunity to aid other instructors and local fire agencies.*

4. Develop, improve, or expand the use of technology in vocational and technical education.

*The program has been fortunate in that our donated SCBA's are an advanced model that utilize newer technologies. Because the bottles being requested will allow us to continue to use these units, it will permit us to remain current with these technologies and allow students to use SCBA's almost identical to what they will use in the employment setting. For example, because these units are identical to those used by Cal Fire, it has allowed them to remove SCBA training from their Wildland academy curriculum since students have already received it during the academy SCBA section held earlier in the course.*

5. Provide professional development programs to teachers, counselors, and administrators.

*Whereas all of our Instructional staff are locally employed as firefighters, they will also have the opportunity to use this equipment for training and professional improvement activities. For example, in our current Live Fire exercises, instructional staff frequently use our SCBA's (with their own department issued masks). The project will allow us to continue this practice.*

6. Develop & implement evaluations of the career & technical education programs carried out with CTEA funds, including an assessment of how the needs of special population students are met.

*Prior to testing, we conduct full practice days where all students (including special populations) have an opportunity to repeat each manipulative evolution until they are confident they have been mastered. These practice days represent the single most important evaluation tool available to us since we receive continuous feedback during this process. To that that end, if we lack the SCBA's to conduct these activities, it will be difficult to continue this practice which will have a potentially adverse effect on student success.*

7. Initiate, improve, expand, and modernize quality career and technical education programs, including relevant technology.

*While it will not necessarily modernize our program, it will certainly allow us to improve and expand it since it will provide an adequate inventory to give every student the equipment they need to practice the respective skills. As mentioned in 4 above, it will also allow us to use SCBA's that utilize the most current technology.*

8. Provide services and activities that are sufficient in size, scope, and quality to be effective.

*Given an average class sizes of 30 students and two academies in the spring semester, the purchase of 50 cylinders (combined with approximately 30 existing spares) will allow us to provide one for each student. And since each student is assigned the SCBA for the duration of the semester, they have unlimited time to practice as well as meet the hour requirements established in the curriculum.*

9. Provide activities to prepare special populations, including single parents and displaced homemakers who are enrolled in career and technical education programs for high skill, high wage or high demand occupations that will lead to self-sufficiency.

*Regardless if you are a single parent or challenged student, by having unlimited time to practice, it provides the opportunity to develop a superior skill set and become a better prepared candidate for firefighting positions. It also facilitates training in a way that does not require good language skills, study habits or other traditional measurement of student success. I personally believe this has been supported by our placement rates which show over 18% of our academy graduates have obtained either F/T or Seasonal positions as firefighters.*

*If the Planning Team has any questions regarding this proposal, feel free to contact me at 836-2913 or [rcollins@santarosa.edu](mailto:rcollins@santarosa.edu)*

*Thank you for your consideration.*



**2016/2017 CTEA YEAR-END PROJECT REPORT**

Please submit to Jerry Miller at [jmiller@santarosa.edu](mailto:jmiller@santarosa.edu) by June 1, 2017

Name: Randy Collins Date: October 19, 2016

Department/Program: Public Safety/Fire Technology

Title of Project: Replacement SCBA Cylinders

1. Summarize the activities, lessons learned, best practices, program improvements and outcomes achieved by this project and the extent to which the goals were accomplished and/or implemented.

*The project allowed us to purchase 30 aluminum compressed air cylinders for the self-contained breathing apparatus (SCBA's) used in our Firefighter I academy. The bottles are designed to replace existing composite cylinders that have reached the end of their 15 year service life. Hence, their purchase has allowed us to continue to perform the SCBA unit in the Firefighter I academy which is a required part of the curriculum.*

*Because their use has provided the means to continue instruction that we have conducted since the academy began over 30 years ago, there are really no lessons learned or best practices achieved. However, one improvement we have experienced is that because unlike composites, aluminum cylinders do not have a limited service life, as long as they pass the hydrostatic test required by CFR 173.34(e) they can be used indefinitely. Over the long term, this has the potential to save thousands of dollars for the program.*

*It should be added that because we were awarded a partial amount of the funds requested, we achieved approximately 60% of our goal of obtaining 30 cylinders. To that end, we will be seeking future grants to meet the quantity needed to run our fire academies.*

2. Identify and explain any barriers encountered or reasons for not completing all planned activities.

*The only barrier I could identify would be only partially funded for this project. The good news is that since not all of our cylinders have reached their expiration date, as long as we obtain funding within the next year to obtain the balance of the original request, we should not experience any problems.*

***The Chancellor's Office requires a response to the following questions. This refers to your program as a whole and is not limited to CTEA funded activities/projects.***

2. What have been the most significant accomplishments over the past two years of your program?

*There have been several significant accomplishments for our program over the last two years. The first has been the reaccreditation of our program by State Fire Training as an Accredited Regional Training Program (ARTP) in 2014. The second has been the alignment of our program with the new curriculum for not only the Firefighter I Academy but for the numerous "In Service" classes we offer. This has also included the implementation of a certification test process for the Fire Academy which has made us the national testing entity for Firefighter I (equivalent to the National Registry test for EMT and Paramedic). The last accomplishment has been our ability to obtain the funding to purchase the instructional equipment necessary to deliver the new curriculum (and testing). Most of which has come from CTEA grants for which we owe a debt of gratitude to your office. The success of grants like this and those*

*previously obtained through CTEA (I.E. flashover prop, iPADs, SCBA cylinders, chain saws, etc.) have played a critical role as they represent equipment that is required in order to not only run our program, but to meet our accreditation requirements. This is very advantageous to our students in that upon successful completion of the academy, it provides them one state and two national certifications, allowing them to work not only in California, but every other state, thus greatly promoting student success.*

3. Over the past two years, what barriers did you encounter in accomplishing the goals of your program?

*The greatest barriers I have encountered in accomplishing our program goals keeping pace with the curriculum changes that have occurred with all our courses associated with State Fire Training including the Firefighter I Academy. This has resulted in upwards of a dozen courses either being re-written and/or terminated and entire new ones taking their place. For a program that has limited staffing, this has been a significant challenge, particularly when other projects are added such as Program Review and SLO Assessments. Related to this are the wide variety of instructional props and equipment we have had to obtain to deliver these courses. Since most are considered capital items beyond what could be covered in our annual budgets, it has (as you are aware) necessitated applying for numerous grants.*