Colorado Helps Advanced Manufacturing Program

Emily Griffith Technical College Case Study

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RUTGERS
Education and Employment Research Center

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INTRODUCTION

The Colorado Helps Advanced Manufacturing Program (CHAMP) is a United States Department of Labor (USDOL) Trade Adjustment Assistance Community College and Career Training (TAACCCT)-funded grant project intended to develop new or redesigned online and hybrid courses leading to credentials in advanced manufacturing in high demand fields across the state of Colorado. The Colorado schools involved in CHAMP are a consortium of eight of the state's community colleges and one four-year institution: Front Range Community College (FRCC), Pueblo Community College (PCC), Red Rocks Community College (RRCC), Lamar Community College (LCC), Pikes Peak Community College (PPCC), EGTC Community College (EGTC), Community College of Denver (CCD), Emily Griffith Technical College (EGTC), and the Metropolitan State University of Denver (MSU Denver).

Prior to the development of CHAMP, the Colorado Advanced Manufacturing Alliance identified two gaps in the state's existing academic training programs that had been previously designed to meet the needs of the industry: 1) the lack of a consistent voice representing the needs of industry to the academic community and 2) the absence of a strong network to facilitate business-to-business activity partnerships with educational institutions. The CHAMP project was conceived to address these issues with the larger goal of making Denver and the state of Colorado a leading advanced manufacturing hub.

CHAMP is in place to increase the attainment of degrees and certifications in manufacturing in order to best serve employers' needs. In service of the market-oriented end of this goal, its programs are designed to produce 21st-century workers whose skills align to local market trends—community colleges work with local employers to align their programs with industry-recognized skills and competencies. With regard to increasing the number of graduates entering the market, CHAMP is focused on creating innovative and flexible learning opportunities for students. The grant calls for schools' existing courses to be adapted for hybrid delivery, for example, such that a portion of the traditional face-to-face instruction is replaced by web-based, online learning.

In addition to designing or redesigning advanced manufacturing programs to fit a hybrid model, each college is required to integrate open education resources (OER) into its CHAMP curriculum. OER are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and repurposing by others. OER may take the form of full courses, course materials, modules, textbooks, streaming videos, tests, software, or any other tools, materials, or techniques used to support access to knowledge. Under the CHAMP grant, consortium colleges are encouraged to use OER in the creation or redesign of online or hybrid courses and are also required to create or redesign their courses and programs such that they can be packaged and licensed as OER for use by other educators and institutions. Thus, staff at CHAMP colleges will package, license, and post their course materials during the course of the grant.

Each college in the consortium is also required to employ at least one CHAMP navigator to collaborate with employer–partners, local workforce centers, community and nonprofit organizations, and students to ensure students' access to CHAMP resources and facilitate their success. Within each of these areas of collaboration, navigators work according to their institution's needs to build CHAMP programs, recruit and retain students for CHAMP programs, and assist those students as necessary. Navigators track their interactions with CHAMP students to report outcomes based on a model of *intensive advising*, which involves multiple interactions and points of intervention with each student throughout his or her education to ensure each student's success and, ultimately, employment.

Aside from these institution-specific innovations, consortium-level outputs are also to be integrated within each college. These include massive open education courses (MOOCs) and a new credit-for-prior-learning process. Three MOOCs were created at the consortium level: a math MOOC, a student success/employability MOOC, and a credit-for-prior-learning MOOC. Each college is encouraged to include one or more of the MOOCs in its program or institutional curriculum. The process at each college for awarding students credit for prior learning will also be redesigned at each college according to policies developed by the consortium.

This report is one of nine created to highlight each individual college's contributions to the CHAMP project at year two of the grant. The purpose of this case study is to identify the implementation processes utilized by EGTC and to provide a summary of the EGTC CHAMP team's activities, successes, and challenges to date. This case study begins with an overview of its methodology and data sources and then moves on to the contextual frame—demographic and socioeconomic background information about EGTC, its student population, and its service region. These sections are followed by a summary of the goals of EGTC's CHAMP program; a discussion of the implementation of the program, including the design process and its incorporation of OER; a look at student and faculty perceptions of the program; an examination of employer and workforce center collaborations; a discussion of the CHAMP navigator position as it has developed at EGTC; an examination of the college's approach to redesigning its credit-for-prior-learning options and processes; and a summary of successes, challenges to date, and recommendations for next steps.

METHODOLOGY/DATA SOURCES

This report examines the development and implementation of the first two years of the CHAMP grant at EGTC, including experiences of the project team members and participating staff, faculty, and students. As such, this report uses qualitative data and analysis. Subsequent EERC evaluation reports will include outcome measures and report on quantitative data collection and analysis.

The qualitative methodology for this report includes content analysis of consortium goals and activities to date, relevant proposals, and project- and college-specific statements of work, quarterly reports, and websites developed by individual colleges. EERC team members also

conducted phone and in-person interviews with college project leads, staff, faculty, navigators, and students.

Most interviews were taped and transcribed; non-taped interviews involved extensive note taking. These transcriptions and notes as well as the documents cited above have been coded through the use of NVivo qualitative data management software and analyzed by EERC team members to represent each college's individual story relative to the CHAMP project.

As noted above, while quantitative analysis will be presented in subsequent reports, this summary is meant for contextual purposes only and will only utilize data from qualitative analysis. For this reason, grant targets relative to each college, student counts, course counts, industry- and workforce-related targets, and other quantitative objectives will not be discussed as part of this report.

COLLEGE DESCRIPTION AND OVERVIEW OF STUDENT POPULATION

EGTC, located in Denver, Colorado, was founded in 1916 by its namesake Emily Griffith. Formerly known as the Emily Griffith Opportunity School, EGTC is currently celebrating its 100th anniversary. EGTC differs markedly from other institutions in the CHAMP consortium; it a technical college offering certificates and college credit. EGTC emphasizes certificate-based courses and hosts approximately 40 career-training programs. EGTC is home to three colleges including: the College of Creative Arts and Design, the College of Health Sciences and Administration and the College of Trades, Industry and Professional Studies. CHAMP funds are being utilized within the College of Trades, Industry and Professional Studies.

EGTC serves an urban population of about 10,000 per year; the student body is diverse. During the 2012-2013 academic year, a large majority (89 percent) of enrollees were self-identified minorities, 48 percent identified as male and 52 percent female. Nearly half, 45 percent of all students, were considered economically disadvantaged.

EGTC's mission aspires to, "address the rapid pace of technological change and strives to be an innovative leader where change and creativity are celebrated." This commitment is in line with CHAMP's emphasis on the application of advanced online and technology-enabled learning. CHAMP's project lead noted that EGTC has a strong commitment to online platforms and that the grant is helping to encourage the school to move in this direction more quickly.

EGTC'S CHAMP GOALS

At the time that second-round interviews were conducted in late 2015, participants summarized the school's CHAMP goals as follows. Firstly, EGTC's overall goal was to hire staff to support the grant including a project lead, a navigator, and an instructional designer. Secondly, CHAMP administrators discussed the strengthening of the welding program through the purchase of new welding materials and an expansion of online components known as OER. Thirdly,

CHAMP administrators noted the planned creation of OER for the computer-aided drafting (CAD) program and the new advanced manufacturing program in order to bring these entities under the CHAMP umbrella. Fourthly, the school planned to use CHAMP monies for professional development and relationship building with potential recruitment partners. Fifthly, the school planned to recruit 100 students by September 2016.

These goals were consistently expressed by EGTC staff including the new dean who noted that CHAMP monies were being used for, "supplies [especially for the welding program], personnel, [the instructional designer's] contract, and travel." The project lead discussed the grant similarly stating that, "[the hiring of a] navigator and instructional designer...curriculum development for welding...money for travel for professional development and community outreach to reach TAA-like participants" were all important to the school's CHAMP objectives. The execution of these goals is outlined in the implementation section below.

First, however, a review of EGTC's initial plans is necessary. The goals expressed in late 2015 differed from EGTC's original CHAMP objectives. This change helps to explain the delayed implementation process at the school. According to EGTC's first budget, the school planned to use CHAMP dollars to launch a program that the college had been working to complete – pre-manufacturing. Pre-manufacturing was centered predominantly on soft skills and safety. The program was designed to incorporate industry feedback to the consortium and to EGTC specifically, which suggested that applicants lacked basic job readiness. Designed during grant year one (2013-2014), pre-manufacturing offered 18.5 credits of job readiness and soft skills training. The program also had an online component for which OER materials were created in-house in late 2014. This component was included to meet CHAMP's 30 percent hybrid requirement, to fulfill EGTC's commitment to putting more coursework online to attract additional students, and to keep up with a general trend toward hybridization in the educational industry.

Unfortunately, the pre-manufacturing program had difficulty attracting students and was what one CHAMP staff member called, "a bit of a false start" for the grant. Though EGTC worked to expand recruitment activities during the 2014-2015 grant year, the school ultimately decided to move away from pre-manufacturing. As such, the pre-manufacturing program is not currently operating.

The dissolution of the pre-manufacturing program necessitated a modification of EGTC's CHAMP goals. This shift is now in place, and implementation has begun on the five new objectives outlined above. However, since EGTC launched these new initiatives halfway into the grant term, the school is behind other institutions in the consortium. The sincere efforts of staff to "be good stewards" of the grant, "advance the cause of manufacturing in Denver," and make the most of remaining time is laudable despite this delay. The following section describes EGTC's new goals. The first goal, the hiring of staff, is especially important as it laid the foundation for all other objectives.

CHAMP IMPLEMENTATION

Staff hires have been important to reinvigorating the CHAMP grant at EGTC. The first was the hiring of a new dean for the College of Trades and Industry, which opened a space for the execution of more robust CHAMP goals. The new dean is heavily invested in CHAMP and willing to use the grant to expand a wider array of programs than previously envisioned. The second staff change was the hiring of a project lead. Brought on in April 2015, the project lead role was initially envisioned as a student-focused role, but this individual became deeply involved in auditing the school's previous CHAMP efforts and submitting the budget modification that ultimately made EGTC's new CHAMP initiatives possible. The project lead noted that, prior to the budget modification and refocusing of goals, the school had spent very little CHAMP money and had no clear plan for how to do so in the future. The budget modification was approved by the USDOL in July 2015 and allowed for the hiring of two additional staff members – a navigator and an instructional designer. The dean and project lead explained that these new hires were necessary to have, "someone on the ground" dealing with CHAMP all the time and to, "recruit [our] target audience into the school and prepare them to be good employees."

At the time interviews were conducted, EGTC had accomplished its first CHAMP goal of staffing the grant. A navigator and instructional designer were hired in late 2015. The project lead noted that both the navigator and the instructional designer got started quickly and were working effectively. However, since most consortium schools included staff such as a project lead, instructional designer, and navigator in their original budgets, EGTC is at a bit of a disadvantage. EGTC's new hires have less time to work under the grant before it ends. This may impact sustainability if new staff members' efforts fail to become institutionalized by the end of their truncated contract period. The project lead recognized some of the limitations of hiring new staff late into the grant term stating that, "[we] started halfway through...and we were dealing with an existing program that was being enhanced and enriched...there were links to employers, there was an established way of enrolling students." CHAMP staff are learning how to step into their roles without duplicating services. Such integration is a challenge across the consortium.

The need to hire more staff was a key learning for grant administrators. EGTC initially believed it had the in-house staff necessary to carry out the functions of the grant. As a technical college, EGTC operates differently from other institutions in the consortium. While the school recognized that other institutions were hiring grant staff, their robust student services and admissions departments belied the need for similar initiatives. Referencing the desire to do things a bit differently at EGTC, the project lead noted, "even though [student services] support was provided at other schools within the CHAMP context, I didn't think it was appropriate for our school." As this comment indicates, she understands the school's need to distinguish itself from degree granting institutions and forge a unique path for staff hiring. However, the project lead also stated that new hiring was necessary because, "the [recruitment] numbers were down and [CHAMP programs] are on a different campus from the admissions folks." She noted that,

"the program advisor really prompted [the hiring of the navigator] by saying that he would really benefit from a recruiter. The navigator could...go out to places where our demographic is served." As its goals for the grant expanded, administrators recognized the need to fully leverage the power of CHAMP with staff focused solely on the grant.

Expanding and strengthening welding

Grant administrators emphasized their continued efforts to strengthen welding and deepen its connection to CHAMP. Welding is a certificate program, which is divided into level 1, level 2, and level 3. These levels include basic to advanced welding skills, which according to the lead instructor exceed the current American Welding Society standards. EGTC's welding program is closely connected to the local labor market in Denver, and was therefore an excellent fit for the use of CHAMP dollars. Due to the aging out of the welding workforce and recent job growth in this sector of the construction industry, welding is in high demand in and around Denver. According to the CHAMP project lead, the welding program has an impressive 87 percent job placement.

Welding is participating in CHAMP through the purchase of new materials with grant dollars. This includes the purchase of metals for welding practice and an ambitious Jungle Gym Project that will create the country's only field training apparatus in the form of a huge structure that students can climb and weld. Students will use fall-protection harnesses in a simulation of real-world scenarios. EGTC hopes to complete the Jungle Gym by the summer of 2016. By combining this high level of preparedness with comprehensive welding instruction, EGTC hopes to solidify its welding classes as the best in the nation. "No on across the country has done such a thing," commented the lead welding instructor. "We are the first ones."

CHAMP administrators have been fully supportive of the lead welding instructor's enthusiasm, and are partners in increasing the visibility of this highly successful program. However, the lead instructor did note one limitation caused by welding's late entry into CHAMP. In late 2015, the program was above enrollment capacity; EGTC did not have enough equipment to accommodate students. This was both exciting and a key learning for EGTC. More welding equipment could have been purchased had such funds been allocated sooner in the grant term. However, this was not fully understood in the early stages of implementation. Summarizing this dilemma the welding instructor stated, "The biggest challenge has been that we didn't get on the ball...the first 18 months in purchasing equipment." Despite this circumstance, the faculty member remained optimistic about welding's plan to utilize CHAMP dollars to the benefit of students.

The welding program is also being strengthened by the new instructional designer. As a result of her hiring, EGTC hopes to make all level 1 and level 2 instruction available online. Before the instructional designer came onboard, thirteen of twenty one possible courses had online components. At the time interviews were conducted, the instructional designer was working

with the lead instructor to launch the remaining courses partially online and make those that fit OER in compliance with the CHAMP grant.

The online material created for the welding program to date is currently being used as "curriculum enhancement"' which was encouraged by college grant administrators as it became clear that welding might fall under the CHAMP umbrella. The lead welding instructor worked with the Stroh Center for Faculty and Staff Enrichment to create online and OER resources for the program during summer break. The instructor reported that, as of late 2015, students could use an online platform to watch videos of welds that they had not mastered, take tests, and read information from textbook materials. The creation of online resources by the welding instructor highlights the dedication of EGTC's faculty. In fact, several CHAMP staff members noted the importance of instructor dedication to CHAMP's success. One interview participant commented that she had, "never seen the level of instructor investment in individual programs like I do at Emily Griffith. I think it's a real strength of the school." However, the creation of online and OER resources solely by faculty was not sustainable. Not all instructors have the time, training, and pedagogical background to create quality online teaching materials. Partnership between instructors and the new instructional designer will eliminate some of the burden on faculty and facilitate a better final product.

While the welding program is ready to launch in hybrid format, EGTC has no plans to convert it fully online due to student financial needs. EGTC is proud to serve many veterans whose studies are funded by the U.S. Department of Veterans Affairs (VA). According to EGTC faculty and staff, the VA will not pay for hybrid programs. This mismatch between VA goals and CHAMP goals is a complicating factor, and EGTC has worked diligently to comply with both mandates without negatively impacting students. VA requirements may also be a limiting factor as the implementation of CHAMP goals expands to include online/hybrid offerings within the CAD and new advanced manufacturing programs.

Creation of Open Educational Resources for CAD and advanced manufacturing

The CAD program is relatively new to EGTC and has only graduated "a couple" of cohorts. CAD is used to create representations of physical models. CAD skills are extremely valuable in the 21st-century marketplace as the use of computers in the construction, engineering, and architecture industries continues to grow. CHAMP administrators and faculty both noted the "huge demand in the industry, especially in the construction industry, to get these qualified individuals [with CAD skills to work]."

Advanced manufacturing is a redesigned program that was scheduled to begin in January 2016. According to EGTC, "The Advanced Manufacturing Laboratory program certifies graduates to compete in Colorado's resurgent and fast-paced manufacturing sector, in industries ranging from production assembly to precision machining, metal fabrication, commercial and medical plastics, composites, aerospace, electronics, and renewable energy." The program boasts a new lab which includes, "a full tabletop, manufacturing conveyor belt, robotic arm, pick and place,

CNC machining, 3D printers, [and more]." According to the dean, this program is 50.5 credits and is "truly advanced" as it offers more coursework and OSHA certification. The program was designed based on industry feedback. In fact, several CHAMP staff members mentioned the strength of the connection between instruction in the new lab and the local labor market.

At the time interviews were conducted, EGTC planned to strengthen these new courses of study with online OER resources. Online coursework may allow additional students to enroll in and benefit from the programs, especially those who are working full-time and desire flexibility in learning. According to the project lead, the new dean observed a significant overlap between the school's new advanced manufacturing and CAD programs, which prompted the effort to place both programs under the CHAMP umbrella simultaneously. The school is now working to develop online programming in OER format for CAD to reach the 30 percent hybrid threshold in both programs. At the time interviews were conducted, EGTC had begun course mapping activities for CAD classes. Encouragingly, CHAMP staff members do not anticipate great challenges in the conversion of CAD classroom resources to online formats. In fact, while development of these resources is still relatively new, some CHAMP staff members see potential for eventual hybridization. Staff noted the value of the Instructional Designer whose goal is to build online resources that blend well with the existing lab-heavy programs. The dean also mentioned a CAD instructor whose personal drive to create a hybrid CAD program has created a major opportunity for curriculum advancement.

According to the project lead, no CHAMP dollars had been spent within the new advanced manufacturing program at the time interviews were conducted. However, CHAMP administrators reported a strong desire to begin additional online development - a goal which CHAMP is facilitating. One staff member noted that the, "grant gives a sense of urgency" to the creation of OER compliant online resources. The creation of online resources has also helped EGTC deepen its connection to consortium schools such as CCD. These sharing partnerships lead to professional development for staff who are exposed to online resource creation strategies and pedagogical methods at other schools.

Professional development

According to their 2015 goals, CHAMP administrators plan to use grant monies for additional professional development and relationship building with potential recruitment partners. Both the dean and project lead spoke positively of this goal. Professional development was also discussed several times by welding's lead instructor - the only instructor available when interviews were conducted. The lead welding instructor, who is also the state chair for welding in Colorado, noted that, "[the creation of online materials via CHAMP] has gotten me more notoriety. A lot of [American Welding Society members] have a little more respect for me." The instructor has also carved a niche for himself as an expert in online teaching. "A lot of the state chairs have voiced that 'you can't teach welding online' but [I have] helped show them that [online curriculum development] is helpful." A CHAMP administrator followed up stating that CHAMP provides, "additional visibility within the consortium. Your name gets out there more.

People know you more." The lead welding instructor was excited that his welding courses and OER materials were being used by MIT and CalTech. He has successfully leveraged the resources of CHAMP to build his program's reputation beyond Colorado. Overall, CHAMP staff members expressed commitment to expanding and solidifying their increased presence in the Denver area via additional professional development opportunities for staff. A stronger reputation will ultimately aid recruitment as post-high school students become more aware of EGTC as a trades certificate institution.

Recruitment

EGTC's final CHAMP goal was to recruit 100 students by 2016. Recruitment has been a major point of emphasis from the beginning of the grant term. At first, EGTC was focused on strengthening recruiting for pre-manufacturing but has now shifted to recruiting for welding, CAD, and advanced manufacturing. This has involved a shift in recruiting strategies to meet enrollment targets. EGTC's change of course is exemplified by the hiring of the navigator. As such, recruitment is reviewed in the navigator section below.

Faculty and student perception of programs

Welding was the only program to take part in our qualitative data collection. As such, this section is specific to welding, though CHAMP-impacted students should eventually graduate from the CAD and advanced manufacturing programs as well. Students were impressed with the CHAMP programing that was available at the time interviews were conducted in late 2015. Several welding students commented on the excellent communication between EGTC and the local labor market. One student stated that, "there [are] jobs everywhere." Another found that his instructors were so well-connected to local businesses that job offers came via word-of-mouth once he advanced in the welding program. Another stated that, "[he] had a job three days after [he] finished Level 1." Students were also impressed with the CHAMP project lead's resume assistance and knowledge of how a trade-oriented resume should look. Students did not report much online coursework, though they found the online review materials helpful. Some students planned to review the material prior to exams and noted that it builds a foundation for their lab work.

Instructors and staff also have a positive perception of CHAMP. Staff reported a learning curve as EGTC is new to the system of federal grant application and execution. However, both staff and instructors addressed glitches with creativity by identifying new ways to utilize grant dollars as available options came into focus. The welding instructor was happy with CHAMP's emphasis on online instruction. Especially for "students under 30," he believed that such updates were necessary. The instructor further commented that, "the videos online are really helpful because a student can go back and watch it 100 times...they can go home and get online and watch it over and over again." This illustrates the flexibility of online learning, which is especially helpful to working students, primary caregivers, and first time welders who may need additional time. He also noted that, "With curriculum development, it is never done. You

always find something...you should add this rubric...you should add this assessment." CHAMP encourages a greater emphasis on course design, which helps in the classroom as well as online.

THE CHAMP NAVIGATOR

The current CHAMP navigator began in September of 2015. EGTC initially decided not to hire a navigator, but this decision was reevaluated after the appointment of a new dean for the college. The new dean noted that, "it's about getting the right student in class…that includes somebody that can help us identify where the right student population is and help us market to that population in an effective way."

The navigator's primary goal is student recruitment. EGTC has a long history of service to severely disadvantaged populations in Colorado. The navigator's CHAMP outreach continues that focus with an emphasis on underemployed and underserved students including those who qualify for Temporary Assistance for Needy Families (TANF) and the Workforce Innovation and Opportunity Act (WIOA). Though she had only been with EGTC for several months at the time of her interview, the navigator described making substantial headway in connecting to community partners. Some examples include making connections with the Denver Housing Authority, the Mile High Workshop for prisoner reentry assistance, the Adams County Workforce Center, and the Arapahoe Douglas Workforce Center. The navigator noted that her decision to focus on the above-mentioned workforce centers was a consequence of a transition occurring at Denver's Workforce Centers, which will result in new staff. Partners cannot be established until this transition is complete. This decision illustrates both the adaptability and localized knowledge of the navigator. She states that she is on track to meet the college's CHAMP goal of 100 new students by September 2016. At the time of our interview, 23 students had been recruited.

While administrators expressed some concern about the meshing of CHAMP staff into the fabric of EGTC, this is not the case for the navigator role. The project lead believes that her position is sustainable. The navigator's hiring highlighted a need for a recruiter and outreach staff member that works specifically with the trades programs. Though the navigator got off to a late start, this role could prove to be a success for EGTC's CHAMP efforts.

EMPLOYER AND WORKFORCE CENTER COLLABORATION

The new dean is deeply involved in collaboration with employers and frequently begins the process by reaching out to high level company officials to discuss partnership opportunities. However, as he is new in his position, he has much work to do in this area. Each program in the College of Trades, Industry and Professional Studies has an advisory council comprised of industry professionals including business owners and industry representatives. Advisory Council meetings are hosted at EGTC for the purpose of curriculum development. While the use of advisory councils was institutionalized prior to CHAMP, CHAMP-related curriculum changes are now a part of the meetings.

Faculty and staff noted that CHAMP has helped EGTC spread their message to employers looking for new partners. CHAMP helps generate interest in the advisory council, facilitates the creation of new relationships, and increases the number of companies who look to EGTC as a place for properly trained employees. EGTC is aware of these opportunities and hopes to continue to use CHAMP to increase its reputation.

CONCLUSION

Summary of achievements

Staff commitment, online course development, OER resource sharing, non-traditional student recruitment, articulation agreements and a better understanding of federal grants stand out as achievements of CHAMP so far at EGTC. Instructors have vast knowledge of their trades and their ability to reconstruct programs to meet the needs of an evolving workforce is notable. One CHAMP staff member stated that faculty regularly, “meet with industry professionals and create programs that are the vision of the local labor market. There is a lot of work being put in by the faculty to craft curriculum.”

Regarding collaboration, EGTC reports using some materials from other colleges involved in the consortium to create their own OER resources. While other colleges, including universities outside of Denver, have taken advantage of their materials. CHAMP has also created opportunities for partnerships that shine a spotlight on some of the differences between EGTC and more traditional, degree-granting universities. CHAMP is helping EGTC more effectively work with degree granting institutions so that both are value-added for Denver.

Several CHAMP staff members also spoke positively about the college's focus on nontraditional students including women and English as a Second Language (ESL) learners. The welding instructor noted that, "we are going to showcase all the women... [and create] a video on women and welding...you wouldn't necessarily look at them and [say] 'oh you are a welder' and these are the kinds of things they are doing, building these huge structures.” He further stated, “I really try to push to get as many non-traditional students as possible because it is just a lucrative career for them.” The welding program puts non-traditional students on its recruitment materials, encourages them to speak about their work on radio broadcasts in other languages, and is trying to create a pathway for ESL students. EGTC's efforts are especially notable as other consortium schools have struggled in this area.

Additionally, CHAMP funding is helping to formalize existing articulation agreements with two-year colleges in EGTC's network. While most transfer agreements were informal prior to CHAMP, Memorandums of Understanding (MOUs) are now being created to formalize the process. According to one staff member this, “encourages reflection on the partnership and [helps make sure that schools are] creating complimentary not duplicative services.” At the time interviews were conducted, the welding program was working to obtain articulation

agreements with other schools in the consortium. According to the project lead, EGTC wants to tell students, "learn your welding here, go get a job, finish a semester at CCD...and get an associate's degree...in welding." The creation of this pathway for students would go far beyond what currently exists. As per Colorado state rules, students can transfer 42 semester credits of state approved EGTC program work to community colleges offering an AAS in applied technology. EGTC is hoping to expand this agreement so that colleges such as Aims, ACC, FRCC, RRCC, CCA, and CCD will accept their certificates specifically toward a welding associate's degree.

Further, one CHAMP administrator noted that welding's agreements were the furthest along and may serve as a model for other programs. EGTC is working to create additional agreements with schools such as MSU Denver for courses in manufacturing. In the future, they hope that the full 50.5 credit manufacturing program may be transferable to some two-year degree-granting institutions.

Finally, EGTC's CHAMP experience has resulted in a better understanding of federal grants. This was an unintended consequence that will be of great import to EGTC in the future. CHAMP was EGTC's first federal grant outside of Perkins and Title IV funds, and a significant learning curve has impacted implementation. This learning curve is exemplified by a vignette regarding the grant's scope of work. One CHAMP administrator reported her surprise when, at the end of grant year one, the USDOL required the submission of welding program data. Since EGTC had initially planned to use CHAMP funds solely for pre-manufacturing, this request was unexpected. However, because pre-manufacturing was listed as a feeder program for welding, welding could be considered CHAMP-impacted per the rules of the grant. Once aware of the broader-than-previously-understood nature of the scope of work, CHAMP staff realized that a move away from the faltering pre-manufacturing program was possible. EGTC views CHAMP as a sort of best practices experiment regarding federal grants with many key learnings related to budgeting and purchasing. More generally, CHAMP staff has learned a great deal about the application and implementation process associated with federal grant programs. This knowledge will be immensely useful in the future.

Next steps

Next steps for EGTC include honing their recruitment efforts, creating more formal employer partnerships, better understanding the role of career services within CHAMP, and deepening utilization of OER resources. Since EGTC plans to run CAD and advanced manufacturing as CHAMP programs, and since schools in the consortium generally report more difficulty getting students into these courses than welding, the navigator will likely need to spend significant time recruiting specifically for these programs. The use of CHAMP funds for the navigator to travel and meet with potential new recruitment partners could be fruitful in this regard.

With regard to employer partnerships, the school's executive director noted that he hopes to make more connection between his efforts to reach employers at the highest level and the work

of the new navigator within the workforce centers. The turning over of contacts to fully leverage employer relationships is a planned next step. Internships are also an idea that might be considered in the future. EGTC offers apprenticeships, though they are not within the domain of the College of Trades and Industry. Solidifying employer partnerships is a clear focus for the college. To the extent that apprenticeships and/or internships can facilitate stronger relationships, EGTC seems open to the creation of such programs. Formalizing the mechanism by which employers recruit graduating students is also a possibility. One CHAMP administrator noted that, "typically what would happen is [that] if an employer reaches out to us with a job opportunity we work directly with the instructor to say, 'Which of your student population has the skill set to satisfy this job requirement?' and we would work with those selected individuals to help put them in front of those employers." This is something that has worked well for the college but could become more institutionalized as additional employers are added to the partnership list.

In fact, the grant has already impacted the employer-prospective employee relationship; the CHAMP project lead helped set up interviews for early graduates. However, this process was not institutionalized. Determining the role of career services within grant-impacted programs is a key next step when more students graduate. EGTC has a stand-alone career services department which serves all EGTC programs, including CHAMP-impacted programs. Job leads are posted by employers through the EGTC Career Opportunity Network. Career services personnel provide one-on-one support for resume development, job search workshops, and mock interviews.

Ramping up the acceptance and utilization of online resources is also an important next step to help guarantee continued utilization of the online materials created for welding as well as the materials that will be created within the CAD program. EGTC is using online resources within welding but solely as enhanced curriculum. Bringing CAD and manufacturing under the CHAMP umbrella will necessitate instructor buy in to the creation and usage of hybrid materials. The new instructional designer is working hard to deliver a wide variety of courses in a short time but they still need to be implemented within lab heavy programs. Welding's lead instructor commented that he is gradually expanding the use of online materials in his courses. He is "trying to implement online as part of homework - eventually students will be expected to do readings online." Even with the welding instructor's broad acceptance of the use of online materials, the transition to a hybrid profile takes time.

EGTC has accomplished a great deal since shifting its CHAMP goals to a more robust course of action. The hiring of staff to support the grant including a project lead, a navigator, and an instructional designer was a key milestone. Welding is having success within CHAMP and can serve as a good model for other programs. Though the implementation phase has been delayed, additional positive outcomes are possible if staff continue down their current course and integrate CHAMP into the fabric of the school.