

**TAACCT GRANT TC-23838-12-60-A-8**

**COLORADO MESA UNIVERSITY**

**FAST TRACK CERTIFICATES**

**FINAL REPORT**

**OCTOBER 2016**

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## **Acknowledgments**

The following individuals facilitated the collection of data for this report: Debra Gore, Alecia Dembowski and Sonia Brandon. Thank you.

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## INTRODUCTION

Colorado Mesa University (CMU) is a four year public educational institution with a two year community college division that focuses on vocational and technical training - Western Colorado Community College (WCCC). In the fall of 2012, CMU received a four year US Department of Labor Trade Adjustment Assistance Act Community College and Career Training (TAACCCT) grant<sup>1</sup> to create six one semester certificates to prepare individuals for entry level positions in four program areas related to manufacturing and information technology - Process Systems Technology, Technology Integration, Manufacturing Technology, and Welding Technology. In its proposal to the US Department of Labor CMU indicated that regional growth was expected in these areas in the aftermath of the Great Recession. It was thought that creating short term certificate programs that integrated critical skills and knowledge and targeted the unemployed, under employed and veterans - could open up new employment opportunities for these individuals, increase their wages, and meet the needs of the local economy.

CMU planned to update and revise curriculum as well as to restructure relevant curriculum to hybrid and online formats. The latter was to facilitate program access in terms of time of day and location. Given the overlap of some courses across the six certificates, the proposal identified opportunities for students to stack Fast Track certificates, as well as to complete foundation courses on their way to an associate degree.

CMU's proposal noted WCCC's existing partnership with area employers who were committed to reviewing curriculum and ensuring it met changing industry standards and needs. The college also included a plan to employ a career coach/specialist. The specialist would help students with career decisions, employment searches, and address academic and/or non-academic challenges students faced related to work-school balance, child care, housing, etc.

This report, prepared by Suzanne Michael Consulting, LLC (SMC)<sup>2</sup>, the third party evaluation team, examines the development and implementation of WCCC's Fast Track certificate programs; program achievements; student outcomes including employment and wages; as well as the challenges the project faced. The report ends with lessons learned and recommendations. This report uses some material previously reported in the evaluation team's *Annual Report and September 2014 Site Visit*<sup>3</sup> and its *Annual Report/Update (October 2014 – December 2015): Observations and Next Steps*,<sup>4</sup> both filed with the Education and Training Administration (ETA) and the Urban Institute.

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<sup>1</sup> CMU received one of the state awards and was not part of the competitive national proposal process.

<sup>2</sup> CMU contracted with Suzanne Michael Consulting, LLC (SMC) for its third party evaluation. Dr. Michael is the principal; and Joseph Rua was a member of the SMC team.

<sup>3</sup> Submitted November 2014

<sup>4</sup> Submitted January 2016

## **FAST TRACK GOALS**

The principal goals for WCCC's Fast Track program were the following:

- Develop six one semester entry level Career and Technical Education (CTE) certificates consisting of 16-18 credits in four program areas (Process Systems Technology, Technology Integration, Electronics Technology, and Manufacturing Technology and Welding Technology)<sup>5</sup>
- Facilitate students' ability to stack these academic credentials
- Encourage students' articulation across credentials and institutions, e.g., from certificates to associate degree to bachelor's degree moving from WCCC into CMU's four year programs
- Increase employment and wages of Fast Track program graduates

The key intervention for the TAACCCT grant was the identification of introductory courses from existing 30 credits certificates and associate degree sequences in the above program areas, and using these selected courses to create one semester 16 to 18 credit certificates in Basic Welder, CAD/CAM, Computer Technician, Certified Network Technician, Control Systems Technician, and Electronics Technician. As part of this process was the review and updating of the selected course content to meet current industry standards. A secondary, but nevertheless critical intervention was the employment of a program manager and career specialist to actively work with faculty, students and community partners, and to coordinate all program activities including marketing, recruitment and program implementation.

## **SUMMARY OF PROJECT ACHIEVEMENTS**

In its five semesters of program operation (fall 2013 thru fall 2015) the Fast Track project achieved the following:

- Enhanced or revised WCCC's CTE curriculum to meet current industry standards and employer needs
- 251 students (unique participants) were touched by the TAACCCT grant
- 40 students were awarded one or more Fast Track certificates
- Four students earned a total of five additional credentials stacking three additional CTE certificates and two associate degrees
- Received average to above average level of satisfaction scores from students completing post course Fast Track surveys
- Strengthened and expanded WCCC's institutional capacity through the purchase of state of the art equipment, subject matter expert reviews, and the professional development of CTE Fast Track faculty
- Increased awareness of and enrollment in CMU's academic programs

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<sup>5</sup> Basic Welder, CAD/CAM, Computer Technician, Certified Network Technician, Control Systems Technician, and Electronics Technician

- Employment of a full time career specialist/recruiter for all CTE students
- Enhanced an already established positive working relationship with the Mesa County WFC, local veteran service organizations, and local employers.
- The average quarterly wages of employed graduates of the Fast Track certificate programs increased after the completion of their respective certificates.

## EVALUATION REFLECTIONS

In late fall 2012, CMU asked Suzanne Michael, PhD (author of this report) to assist the college in developing an evaluation plan for its TAACCCT grant application. In collaboration with the Director of Sponsored Programs and faculty, Dr. Michael developed and submitted an evaluation plan as part of CMU's application. In early 2013, in response to the US Department of Labor's review, and in discussion with CMU, Dr. Michael submitted a memo to TAACCCT that elaborated on and clarified aspects of the evaluation design, e.g. construction of a comparative cohort, and baseline equivalencies.

The approved evaluation design integrated process (formative) and outcome (summative) activities that included quasi-experimental comparative cohorts, and the triangulation of data sources and analysis (Denzin, 1970).<sup>6</sup> The logic model, Appendix A, presents the conceptual framework for the evaluation. The underlying question for the evaluation was whether or not CMU's new accelerated technology programs would lead to improved employment opportunities and higher wages for the individuals completing Fast Track certificates. A secondary interest was the effect of completion of an accelerated program on students' continued engagement in college at either the associate or four-year degree level.

While CMU initially began the contract process with Suzanne Michael Consulting, L.L.C., in August 2013, the contract was not formally established until December 2013.<sup>7</sup> Nevertheless, Dr. Michael began to engage with Fast Track project staff beginning September 2013.

### Planned Evaluation

The planned evaluation design involved the construction of panels of students in each of the six new accelerated as well as the six programs as a group panel (*treatment/experimental panels*). As the program began and new students enrolled each semester, they were to be added to the respective panels. The *control cohort panels* were to be comprised of students enrolled in other CMU technology certificates (as available), AAS students, and job seekers registered at the regional WFC. Note the plan was to see if there were differences across the Fast Track certificate panels as well as between Fast Track certificate holders and those who were part of the control cohorts.

The principal outcome measures for the comparison analysis were:

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<sup>6</sup> Denzin, N.K. (1970) *The research act in sociology: A theoretical introduction to sociological methods*. London: Butterworth

<sup>7</sup> Contract delays had to do with the state education office which at the time had oversight over CMU's contractual agreements. CMU is now independent of the state contract review process.



- Rates of completion
- Stacked certificates
- Rates of employment
- Wages pre and post credential completion for incumbent workers
- Wages at hire and then 6, 12 and 18 months from hires (subject to time censoring re time of completion)
- Length of employment in jobs subsequent to earning a credential

Further measures of interest for the comparative cohort study were:

- Student satisfaction with their respective Fast Track certificate programs
- Number of stackable certificates earned
- Type of stackable certificates earned
- Subsequent enrollment in a two-year associate degree program or a four year bachelor's degree program.

The role and “effect” of the career coach or career specialist in facilitating retention and completion, as well as employment, were other foci for the planned evaluation.

In addition, using qualitative methods, the evaluation team planned to examine how the Fast Track certificates were developed and implemented, the college's partnerships with employers and community partners, and how these partnerships informed the Fast Track program and students' post certificate employment.

### **Actual Evaluation Design**

In the initial evaluation plan submission, SMC identified a number of possible challenges to constructing comparative cohorts: a) CMU was a single college TAACCCT grantee and not a consortium, thus limiting the potential size of all cohort panels and the ability to test outcomes for significance; b) there was no pre-existing compressed CTE program in fields similar to the six Fast Track fields with which to compare the new Fast Track certificates, and there were few enrollees in any of the 30 credit length certificate programs in fields similar to Fast Track; c) the economic opportunities in Mesa County were very different than in other parts of Colorado, especially the Front Range so comparisons with other colleges in the state would be weak; and d) the six different certificate areas could not be compared due to the great differences among them, e.g. welder versus electronics technician have different wage structures, career trajectories and employment opportunities, e.g. apprenticeship programs.

Once on board as the third party evaluator, SMC met with Fast Track program and Mesa County Workforce Center (WFC) staff to discuss the possibility of including WFC job seeking clients as a control group. It became quickly apparent, however, that regulations about confidentiality would preclude the use of WFC clients as a comparison group. The WFC population was therefore not used as a control group.

Further, within the first two semesters of program offerings recruitment into the Fast Track certificate programs was far below expectations. Thus, as will be presented below, the total number of Fast Track enrollees (n=53) and the small numbers of students in each of the six certificate programs was too small to create certificate panels. While we did go on to compare Fast Track graduates with non-Fast Track students taking the same courses – students earning 30 credit certificates and AAS degrees - in our analysis we recognize that the cohorts are basically not equivalent as students had different educational backgrounds and were generally pursuing credentials in different areas. For example, a student taking several basic welding courses might be pursuing a fine arts degree which is significantly different from someone who is focused on welding and is seeking a job in the oil and gas industry.

The report that follows is therefore SMC's best effort to provide insights about the Fast Track pilot program; to report on student outcomes; and to identify best practices and lessons learned.

## **QUANTITATIVE METHODOLOGY**

### **Employment and Wages**

The principle goal for the TAACCCT funded project was to increase the employment and wages of unemployed and underemployed individuals especially those who are TAA eligible. The principal evaluation questions were:

- What was the rate of employment for Fast Track program graduates? How did wages change for Fast Track graduates who were incumbent workers?
- How did the employment and wages of Fast Track students compare to non-Fast Track students in the 30 credit and AAS programs?
- Did wages change over time, at hire, six months, 12 months, and 18 months post completion of credential?

For the above questions a comparative cohort analysis was completed for Fast Track and non-Fast Track students enrolled in one or more Fast Track related courses<sup>8</sup> between fall 2012 and fall 2015. Unemployment Insurance (UI) data files along with CMU Banner files were used for the analysis. Given the sample size only descriptive statistics were used.

### **Credentials and Program Satisfaction**

As indicated above, CMU and DOL ETA were interested in the number of individuals participating in the college's innovative programs, students' rates of retention, and the possible impact of participation in a time limited program on enrollment in additional certificate and/or degree programs. In addition, CMU was interested in knowing to what extent students were

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<sup>8</sup> Courses designated under the Fast Track rubric of courses were also part of other certificate and degree granting programs and thus enrolled unique students included those enrolled in Fast Track certificate, 30 credit certificate, associate degree, and/or bachelor degree programs.

satisfied with their Fast Track experiences and the extent they felt the program had prepared them for the job market. The questions that guided this aspect of our evaluation included:

- How many students earned a Fast Track certificate and in what areas?
- How many certificates did students earn across the six new certificate programs?
- How many stackable certificates were earned? In which areas?
- How many students went on to other certificate and/or degree programs?
- On a scale of one to five how satisfied were students with their Fast Track experiences?
- On a scale of one to five to what extent did students feel that the Fast Track program prepared them for employment in their field of study?

For Fast Track specific questions, the evaluation team used CMU's Banner data files for students enrolled in the Fast Track certificate programs as well as a final post program student survey mailed out in spring 2016. For the comparative cohort study, SMC developed pre (first three weeks of classes) and post (last class) course surveys for all semesters for all students enrolled in Fast Track courses (Fast Track, 30 credit, AAS and/or BS students). Again, given the small numbers of Fast Track students as well as the number of students enrolled in one or more enrolled Fast Track courses by credential, analysis of outcomes was limited to descriptive statistics and no tests of significance could be performed.

## QUALITATIVE METHODOLOGY

The third party qualitative evaluation had three principle foci: a) program development and implementation, b) community partnerships, and c) capacity building. The questions of concern included:

- How was the Fast Track model implemented?
- What were the challenges and lessons learned in respect to program development and implementation?
- To what extent were there opportunities to stack credentials?
- To what extent did program curriculum meet industry standards and the needs of industry employers?
- What services did the career specialist provide to students?
- To what extent did the Fast Track project help build CMU's capacity to train students and prepare them for a changing job market?

Over the past three plus years, as the principal of SMC, Dr. Michael held weekly or bi-weekly phone conference calls with the Project Manager. At times, the Career Specialist was included in these calls. As needed, conference calls were also held with Department Heads,<sup>9</sup> the Director of Sponsored Programs, and the Director of Institutional Research. In addition, four site visits were made (October 2013, January 2014, September 2014, and June 2016). At one site visit, I met

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<sup>9</sup> As of fall 2015 WCCC restructured its administration eliminating department heads, replaced by an Interim Director of Instruction who supervises all WCCC faculty.

with the Fast Track Steering Committee and during two site visits the evaluation team met with staff from the Mesa County Workforce Center.

Conference calls and site visits focused on successes to date; strategies to achieve project goals; challenges and modifications; recruitment and enrollment; the two advisory CTE committees; and needed data pulls in respect to students' academic and demographic profiles and employment and wage data. Problem solving and continuous feedback were a large part of these interactions. As such, the evaluation reflects aspects of Patton's "development evaluation" model (2010).<sup>10</sup>

In program year two, SMC worked with the Project Manager and department heads to facilitate the on-site subject matter expert reviews of program resources and course curriculum. This included the development of an evaluation form to be used by subject matter experts

In the final year of the grant, the SMC evaluation team reached out to 25 Fast Track graduates via email to schedule phone interviews about their Fast Track experiences and their post certificate employment. Only one student responded, and subsequently was interviewed. Similarly, outreach efforts to industry partners sitting on one of the two advisory committees (Process Systems and Technology Integration; and Manufacturing Cluster) resulted in only a single phone interview.

In addition to the above, the SMC evaluation team reviewed program materials including minutes from advisory committee meetings, marketing materials, and student statistics collected by the Project Coordinator and Career Specialist.

## **PROGRAM LEADERSHIP**

The Fast Track certificate programs were housed at Western Colorado Community College, the two year community college division of Colorado Mesa University and placed within the office of the Vice President of Community College Affairs which oversees WCCC's curriculum and student services.

### **Grant Project Manager**

The Grant Project Manager was hired in June 2013 and located on-site at WCCC where all the CTE training courses took place. She was the lead coordinator for all program activities, working with CMU's Director of Sponsored Programs for fiscal and administrative matters, and working with the Vice President's office and WCCC's department heads on program issues. Over the course of the grant a number of personnel changes and shifts of leadership, however, affected the consistency of reporting lines.

From the beginning, the Project Manager was the "go to person" for the project - trouble shooting, problem solving, ensuring that the project fulfilled the statement of work and satisfied all TAACCCT requirements. Much of the Project Manager's work was behind the scenes

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<sup>10</sup> Patton, M. Q. (2010) *Developmental Evaluation. Applying Complexity Concepts to Enhance Innovation and Use*. Guilford Press, New York.

coordination, and thus, like many managers, often invisible. Nevertheless, the Project Manager provided the “glue” for the Fast Track project, and led and facilitated - from paper to reality – much of the development and success of the program.

In the first program year (2013-2014), the Project Manager worked closely with two WCCC department heads - manufacturing technology and process systems/technology integration - and their faculty. She also worked with prospective and enrolled students; with various offices within the college, e.g., admissions, office of the registrar, marketing department, student services and financial aid, and veteran services; and supervised the career specialist (see below). In addition, the grant manager conducted outreach to regional employers, worked with the Mesa County Workforce Center, and engaged community organizations to promote Fast Track, e.g. local veteran services organizations.

The Grant Manager facilitated program reviews and program modifications. This included working with SMC to collect student feedback, and utilizing suggestions made by advisory committee members and by the subject matter experts. The Grant Manager used the Core Monitoring items as set forth by ETA to frame these activities concurrent to giving attention to the fidelity of the Fast Track model.

### **Career Specialist/Academic Coach**

The US Department of Labor’s TAA Round I and II grants required the provision of intensive advising by a “career coach.” Many TAACCCT funded colleges renamed this grant funded position to better match college-specific job functions. At CMU-WCCC the intensive adviser was referred to as the “career specialist.” The career specialist reported to the Grant Manager and had her office on the WCCC campus.

During the TAACCCT grant, the project had two different career specialists. The first (August 2013 to December 2013) left because her husband took a job in another state. The second hired February 2014 left August 2015 when a delay in approval for a fourth year no cost program extension kept the college from committing to her extended employment. After an interim job, this Career Specialist is now CMU’s Assistant Director for Career Services.

Both career specialists actively engaged in recruitment activities for the Fast Track program including outreach to the WFC, veteran services organizations, local employers and industry associations. Outreach activities included telephone calls and site visits as well as attendance at some regional manufacturing job fairs and industry forums (see also below Outreach and Recruitment). The career specialist was often the first point of contact for prospective students. Initial conversations stressed the Fast Track certificate requirements including the need to commit at least 35 hours per week to the program. The specialists also discussed employment and career goals as well as past academic and work experiences. As appropriate, individuals were referred to the WFC for the Work Keys assessment and/or financial support; and/or referred them to other CMU services, including student services, veterans’ services and developmental education.

The career specialists assisted individuals interested in the program with the Fast Track application and college admission forms. Once students enrolled in a Fast Track certificate the specialists did a program intake and established an individual case file.

The career specialists served as Fast Track students' advocate and mentor. Each specialist monitored students' academic progress, and made themselves available for both academic and non-academic issues. In spite of the specialists' availability, CMU's Fast Track students did not request help with non-academic issues, e.g., child care, transportation, etc. It is unclear why this was the case – perhaps because of the intensity of the program (screened out those who were balancing work and studies) or because a unique population of students enrolled (the students were overwhelmingly male). Nevertheless, given the small size of Fast Track program enrollments (no more than 15 students enrolled in any term), the specialists established supportive relationships with most students, and, as relevant, referred them to other campus services. Meeting in her WCCC campus office the career specialists also explored with interested students, academic opportunities beyond Fast Track's CTE certificate, including the possibility of enrolling in other certificate and degree programs at CMU.

In a review of the career specialists' interactions with students it is clear that the major focus was securing employment. The specialists helped students with their resumes, job search and interviewing techniques, and identified and shared job openings with them. The career specialists also networked with regional employers to identify current and anticipated job openings for graduating students.

In an exit interview requested by the third party evaluator, the second career specialist shared the following observations about her role, lessons learned and best practices.

*Role Observations:* Students often need help to balance demands on their time, e.g. studies, family, work. While support and encouragement – “you can do it” - is important, it is also important to help prospective and enrolled students become more realistic about what is and what is not possible in terms of their schedules.

Working with students involves a balance between support and “tough love.” The task is to help students increase their level of self-sufficiency and their ability for problem solving while providing assistance and encouragement. The challenge is identifying the line between enabling and providing a supportive hand.

Students who enrolled in the Fast Track program came with varying experiences and capacities. As she saw it, the function of the career specialist was to help students identify their interests and strengths, and then to identify and explore careers which might best match them. At the same time, she felt it was her role to help students to understand how limited proficiency in math, English or computer skills might affect their ability to succeed in an intensive one term CTE certificate program. CMU's open admissions policy, however, allows a student, regardless of advisement, the option to enroll in any certificate they chose. Given the costs of time and money, as well as the impact of academic failure, the career specialist along with the Project Manager, advocated for the establishment of some base line academic proficiency in math,

English, and computer literacy; as well as some assessment of personal maturity that recognized the intensity and time demands of the Fast Track program (see below).

*Lessons Learned/Best Practices:* As part of their regular activities the career specialists reached out to students calling and emailing them, frequently going to their classes to check in with them in addition to checking in with faculty to monitor progress. However, there was no mandated or scheduled set of meetings to review progress and/or plan for post program employment.

*Employment searches:* In a very competitive job market even students with years of employment can benefit from help with their resumes – especially tailoring resumes to specific jobs – keeping in mind the increasing use of computer screening algorithms. Given that CMU’s career services office is located on the main CMU campus, the career specialists spent a good deal of time helping Fast Track students with their resumes.

### **Project Steering Committee**

A project steering committee (separate from the two advisory committees discussed below) was established by the Project Manager in June 2013 soon after she was hired. This group was comprised of: CMU faculty and staff including the two department heads, the Director of Sponsored Programs, the Vice President for Community College Affairs (WCCC), the Project Manager and the Career Specialist after she was hired August 2013); CMU’s Director of Marketing and the Director of Student Services; community partners including directors of the Mesa County WFC and local veteran services organizations. The steering committee was focused on operational issues, marketing-outreach and student recruitment; and the establishment of referral networks across all organizations.

Initially, the Steering Committee met once a week. By mid-fall 2013, the committee met twice a month, then once a month and then by the end of the spring 2014 semester only met if needed for updates or problem solving. The Grant Manager stated that the Steering Committee was extremely helpful coordinating and building the program, and helped her facilitate marketing and recruitment efforts.

### **PROGRAM IMPLEMENTATION**

The structure and course mix for the six Fast Track certificates programs were established spring 2013 by Vice President for Community College Affairs (WCCC); the department head for WCCC’s Manufacturing Technology and Process and Technology Integration, and associated faculty. The course mix, derived from existent courses from 30 credit certificates, associate and bachelor degree programs, included courses thought to best prepare entry level practitioners in each of the fields. Each certificate was limited to 16-18 credits which included several part semester modules. The whole program was thus created to fit into the college’s 16 week academic term. Further, while this was later modified in the fall of 2015, the original Fast Track model required all Fast Track certificates to be completed in a single semester. As such students needed to commit to full time study.

A decision was made early on that Fast Track courses would not have sections specific to Fast Track students, but that all courses would include students enrolled in other credential programs. As a result, Fast Track students sat in courses in which 30 credit, associate and bachelor level students also sat. Some of these other students were pursuing credentials in the same subject as a Fast Track certificate student, but others were taking only one or two courses in the subject, e.g., a fine arts student interested in welding therefore might be taking the same Basic Welder course as a Fast Track student.

CMU approved the six Fast Track certificates July 2013, and the program was launched August 2013. All six Fast Track certificates were offered for five semesters: fall 2013, spring and fall 2014 and spring and fall 2015. Going forward only the Basic Welder and Computer Technician are being offered as entry level 16-18 credit Fast Track certificates.

### **Outreach and Recruitment of Students**

In its grant proposal CMU identified the unemployed, underemployed and veterans, in addition to TAA eligible individuals, as its principal target populations.

From the start, Fast Track program staff used a multifaceted approach to marketing and student recruitment. Initial strategies included use of the CMU website homepage, a dedicated program website, newspaper ads; public service spots (PSAs), mailing flyers (e.g. 300 to veterans, and 1150 to new Workforce clients in the first year), and banners in local malls, posters and open houses.

The Fast Track career specialists and Project Manager worked closely with the Mesa County Workforce Center (WFC) to recruit students, providing information about the certificate programs, registration deadlines and the application process. In addition, the project team was in contact with a variety of college and community organizations that serve veterans: e.g., CMU Veterans Services, Mesa County Veterans Upward Bound, Department of Veterans Affairs, Veterans Benefits Administration, National Guard, Joining Community Forces, and Operation Revamp. Many of these organizations were members of the program Steering Committee mentioned above.

Over time, feedback from prospective students indicated that the best strategies for recruitment were the PSAs and information on the CMU website.

The certificate in welding quickly emerged as the most popular certificate program across all inquiries and applications. Project staff initially wondered if this was the result of the extensive use of welding photographs on Fast Track print materials and websites, or the sense that one could quickly train for a job in welding. However, even after materials were redesigned to better showcase other Fast Track programs, welding continued to dominate both inquiries and enrollees. In fact, fall 2014 the high number of Fast Track and non-Fast Track students interested in enrolling in welding courses resulted in the creation of a waiting list for the welding program.



The target population is unable to plan months in advance- often inquired about the programs right before the start of the term. In response to this situation faculty were allowed to open courses to additional students beyond traditional course caps.<sup>11</sup> There was some discussion about dedicating specific slots for Fast Track students, however, this was deemed impractical in terms of anticipating the number of Fast Track enrollees each semester for any specific certificate.

While initially CMU's marketing department facilitated a range of activities, in the third program year there were considerable delays in implementing marketing activities. For example, banners marketing the Fast Track program only went up in local malls in mid-August just a week or so before fall 2015 registration began. It is not clear if these banners impacted enrollment at other CMU programs, but only a single student enrolled in a Fast Track certificate fall 2015.

### **Admissions Criteria and Advising**

As indicated above, TAA program staff counseled students about the intensity of the Fast Track certificate programs and the skills needed to be successful. They also advised students, depending on their interests and past work experience, what programs and/or academic services might best serve them.

During the first two program years, students who did not have an associates' or bachelors' degree were referred to the Workforce Center (WFC) to take one or more Work Keys exams.<sup>12,13</sup> Notwithstanding concerns about the adequacy of Work Keys scores to capture relevant knowledge and skills, Work Keys was the only assessment tool initially used for Fast Track. Note, as part of their advisement program, Fast Track program staff referred prospective students who did not do well on their Work Keys' exams to CMU's developmental education courses and tutors to get help with math and/or English. Given the intensity of the Fast Track and other CTE certificates, some prospective students were referred to the main campus where they could enroll in an associate degree program. It was felt that a degree program would provide better access to CMU's full range of academic supports, and provide a more flexible program of study than a one term full time program of study.

Given WCCC's open admission policy, however, program staff could not prevent students with low proficiencies in math, English and/or computing, from enrolling in Fast Track. As a result, a number of students with poor academic skills ended up formally withdrawing or dropping out after several weeks of classes. This lowered Fast Track's rate of program completion.

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<sup>11</sup> It is unclear, if this was the cause, but in some post course surveys students commented about crowded lab spaces.

<sup>12</sup> Work Keys is a series of assessment exams developed by ACT to test "foundational and soft skills." See <http://www.act.org/content/act/en/products-and-services/workforce-solutions/act-workkeys/about-act-workkeys.html>

<sup>13</sup> Spring 2015, CMU changed its admissions policy to require all prospective CTE and degree students to take the Accuplacer exam. However, WCCC continued to accept students regardless of their Accuplacer results.

In the spring of 2015 CMU changed its admissions process so that prior to registration, students who did not meet minimum qualifying standardized test scores (ACT or SAT), had to take the ACCUPLACER (Sentence Skills, Reading Comprehension, and Elementary Algebra). As of fall 2016, students with low scores in math and/or English enrolled in CTE and/or degree programs are required to enroll in developmental education courses to improve their proficiencies in these areas.

**Computer Literacy:** Many of the Fast Track certificates required knowledge of, or extensive course work on the computers, e.g. Certified Network Technician, Control Systems Technician, and Electronics Technician, CAD/CAM. During pre-enrollment interviews, the Fast Track team therefore adapted and used CMU's Department of Office Administration's pen and paper computer skills self-assessment. This assessment was off-line and thus did not truly provide a good assessment of computer literacy. Nonetheless, individuals who did poorly on the pen and paper exam or identified weak computer skills were encouraged to upgrade their skills prior to enrolling in Fast Track. Referral options included WFC, WCCC's continuing education courses, and/or community agencies.

In SMC's pre and post surveys of students enrolled in any grant funded course, students were asked to assess their computer skills at the beginning (pre-survey) and end of the semester (post-survey). On a Likert scale of 1 to 5 with 1 = not adequate and 5 = very adequate, the mean for all Fast Track students at the beginning of their respective certificate program was 4.25 and at the end it was 4.16. Given the small cell sizes no tests of significance were done. It is therefore unclear if this difference in self-scores is due insight gained about their computer literacy – re-assessing their actual skill levels in face of some of the computer requirements in their respective coursework, e.g., CAD/CAM.

**Time Commitment:** The Fast Track project team calculated that students needed on average a minimum of 35 hours per week to successfully complete their Fast Track certificate program. Students reported that this time commitment made it difficult to work even part time, simultaneous to family responsibilities. Non-traditional prospective students – older than 25 and the unemployed and under employed – the very target populations for whom the Fast Track programs were largely designed – thus self-selected out as they could not balance work and their studies, or afford not to work.

Within the first program year, project staff and faculty recognized how time conflicts limited enrollment. In response, they discussed possible program modifications including course selection and sequencing, course schedule and even splitting the sequence of courses. These are all discussed further in the section titled, "program modifications."

## UNIQUE PARTICIPANTS

In counting unique participants – those "touched" by the TAACCCT grant - CMU established eligibility criteria. Only students who met one or more of these defined criteria were counted

each year<sup>14</sup> and reported on the Annual Program Report (APR): unemployed, underemployed, TAA eligible, veteran or spouse of veteran and/or a non-traditional student (25 or older). As a result, although 442 different students sat in at least one Fast Track related course and/or were affected by grant dollars<sup>15</sup>, only 251<sup>16</sup> students were identified as unique participants, and included in SMC's analysis.

The students in Fast Track-related courses were a mix of students pursuing 30 credit certificates, associate and bachelor degrees. However, when we refer to Fast Track students in the analysis below we are only discussing students who actually were enrolled in a Fast Track certificate – not all the other students who sat in one of the Fast Track rubric of courses.

Table I below presents the number of individuals who enrolled in one of the Fast Track certificates and the number who actually earned a Fast Track certificate. Over the course of the Fast Track grant, 53 students enrolled and 40 graduated with a one of the six program certificates or a 75.5 percent rate of completion. This rate is much higher than the overall success rates for other Western Colorado Community College's programs which are in the low to mid 50 percent range.<sup>17</sup> No doubt retention in a one term program is easier than multiple terms. However, given that there were no restrictions to enrollment, 75.5 percent rate (n=53) is a significant achievement.

**TABLE I: STUDENTS ENROLLED IN AND/OR COMPLETED A FAST TRACK CERTIFICATE**

	Fall 2013 Enrolled	Fall 2013 Completed	Spring 2014 Enrolled	Spring 2014 Completed	Fall 2014 Enrolled	Fall 2014 Completed	Spring 2015 Enrolled	Spring 2015 Completed	Fall 2015 Enrolled	Fall 2015 Completed	Total Certificates Earned
Basic Welder	1	1	11	7	7	6	6	5	1	0	19
CAD/CAM	0	0	5	3	1	1	1	1	0	0	5
Certified Network Technician	0	0	2	0	0	0	0	0	0	0	0
Computer Technician	2	1	1	1	2	2	1	1	0	0	5
Control Systems Technician	3	3	0	0	1	1	3	2	0	0	6
Electronics Technician	2	2	0	0	2	2	1	1	0	0	5

<sup>14</sup> Banner data fields do not contain most of this information. Therefore, after the college's census date, program staff therefore surveyed students in each Fast Track class to collect data about student demographic characteristics. The data was self-reported. Only students who fit one or more of these categories were reported by staff on the APR.

<sup>15</sup> Initially the SMC evaluation team only focused on students sitting in one of the courses under the Fast Track rubric of courses. However, recently the team was informed that some students were counted as unique who sat in another CTE course taught by a faculty member who also taught Fast Track course and thus had been paid by the grant. This explains some of the differences in the numbers no being reported over time.

<sup>16</sup> CMU's APRs included 256 students. However, during the final analysis of employment and wage data two students were identified as having been counting twice. This reduced the actual number of unique participants to 253.

<sup>17</sup> Colorado Mesa University (2015). P 39. Retrieved from [http://coloradomesa.edu/strategicplan/documents/2015StrategicPlanProgressReport\\_Final.pdf](http://coloradomesa.edu/strategicplan/documents/2015StrategicPlanProgressReport_Final.pdf)

TOTAL	8	7	19	11	13	12	12	10	1	0	40
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As Table I indicates, Fast Track certificates were first offered fall 2013 with eight students enrolling in four of the six offered certificates. While below proposed targets<sup>18</sup> this low enrollment was actually an achievement given the late receipt of federal program approval; the time needed to develop the certificates and receive approval from CMU’s Board of Trustees; the need to hire program staff (June 2013 Project Manager and August 2013 career specialist) all affecting recruitment activities. With a full complement of staff and more time for planning and recruitment, the second semester (spring 2014) showed a significant increase in enrollment, 19 students. Enrollment rates then stayed fairly level for the remainder of the grant, 10-13 students each semester.

As Table II indicates, the Basic Welder program was by far the most popular of all the Fast Track certificate programs with a total of 26 enrollees and 19 graduates. All other certificates had far fewer enrollees – and only 5 or 6 graduates. The exception was Certified Network Technician program which had two enrollees but no graduates. In retrospect faculty stated that the course material was too difficult to master in a single term unless the student had extensive prior background in computers and computer networks.

## PROGRAM CURRICULUM

As indicated above, the Fast Track certificates were constructed using existent CTE courses. Under the TAACCCT grant, no new subject matter courses were created. However, curriculum modifications did take place. These enhancements and revisions were informed by industry, student and faculty feedback and the reviews of the four subject matter experts. Syllabi modifications included greater focus on soft skills and the integration of new technology and equipment purchased under the grant.

### Soft Skills

In its original proposal CMU stated that industry employers had indicated that there was a critical need to address “soft skills” in preparing the next generation of workers. This was echoed by a member of one of the two advisory committees, “If one cannot get along with others can’t do a job.” There was consensus among faculty that soft skills could not be abstracted as a standalone course but needed to be an integral part of all courses. Thus, under the TAACCCT grant, faculty expanded their focus on soft skills, working to integrate them into classrooms discussions and assignments. One faculty member spoke of a creating a classroom culture in which he role modeled respect and professional ethics. He also included one or more soft skills in labs and course assignments - critical thinking, problem solving, leadership, team work, and professional ethics. The challenge for him and other faculty, as well as for program evaluation, has been the means to measure the effect of these changes in classroom culture and assignments on students’ attitudes and behaviors so that they are truly “work place ready.”

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<sup>18</sup> Year II targets for Fast Track certificate completers was 91 students.

## **Other Modifications**

With the input from industry and the subject matter experts, curriculum was updated in respect to specific skill sets and industry standards. Curriculum was also modified to integrate new equipment purchased under the grant. Faculty also transformed some course content into online formats to facilitate students' working off campus, and/or create a flipped classroom so students could concentrate on hands-on skill development in the classroom. Format changes resulted in very limited hybridization and no fully online courses.

In SMC's earlier evaluation reports, we identified some of the curriculum modifications and more substantive program changes. It is important to note that these modifications were stimulated and partially funded by the TAACCCT grant. However, as course enrollees included students pursuing other credentials, e.g., associate degrees, modifications were reflective of their needs as well. As such, changes in curriculum not only benefited Fast Track students, but also all other students who were taking course(s) under the Fast Track rubric of courses (e.g. the other unique participants). This helped to build the college's capacity to provide state of the art training.

What follows is a brief summary update.

### **Basic Welding**

WCCC-CMU's welding programs (certificate and associate degree) historically focused on oil and gas industry needs. However, in the last few years, given retrenchment in the industry, WCCC-CMU began to shift its attention to welding skills related to "*other industries like manufacturing, structural steel, and repair work.*" The result has been a more balanced general approach to teaching welding. During the first two semesters of Fast Track, faculty recognized that it is not possible to adequately teach pipe welding skills in 16 weeks. Instead one can introduce pipe welding, teach standards, codes and assessments, so students develop a contextual foundation and interest in pipe welding. Then, if students enroll in more advanced welding courses and/or work in the field, they can build on this contextual foundation as they master the actual skill of pipe welding. As a result, Fast Track certificate students had opportunities to do pipe welding but in most cases could only develop rudimentary skills.

Fast Track faculty also increased their time spent on developing students' math skills and their ability to read blueprints. Electrode selection and cross-country pipeline weld procedures were also added to the curriculum.

Pedagogy also shifted under the grant. Classroom lectures continued to provide students with background knowledge, e.g. metallurgy, but faculty expanded opportunities for students to do "hands on" lab work. This included the use of a "virtual welder" or simulator welder, as well as some but limited actual welding. Faculty also engaged students in more group projects "to (further) simulate real world activities" and foster team work.

## **CAD/CAM**

CAD/CAM faculty changed the Fast Track course series to better meet the needs of the local manufacturing sector and build a stronger foundation for advanced levels of practice. For example, MAMT 115 Intro to Machine Shop was added to help students gain more manual machining experience *“before they move into the automated section of the program.”* In addition, CADT 108 was replaced by ENGR 125 or CADT 109. Faculty also integrated NIMS principles to the program. Finally, in response to feedback from the manufacturing advisory committee, the credit hours for MAMT 106 were increased from 1 to 2.

Using grant funds, CMU upgraded CAD/CAM equipment including the addition of a new Haas CNC Machining Center, additive manufacturing equipment, and CMM machine for G D & T. In addition, the college purchased a heat treating kiln that enhanced both welding and machining students’ opportunity to learn about materials and their properties.

In their classes, faculty also increased their focus on soft skills to include job performance and workplace expectations.

## **Process Control Systems**

TAA funds helped to upgrade some of the computer equipment and software used in Process Technology. However, no curriculum content was changed. Faculty and industry partners agreed that the program curriculum provided a good starting point for students, giving them, in a short period of time, a sense of accomplishment and confidence. They also felt the program content could stimulate students to pursue additional credentials, including an AAS degree.

## **Electronics Technician**

The review of the Electronics Technician Fast Track by faculty, industry representatives and the subject matter expert resulted in a consensus that the content in this program far exceeded what most students could absorb in 16 weeks, and sufficiently prepare them for an entry level position. In addition, faculty voiced concerns about the need for students to have better math skills than most had at the beginning of the program. As a result, while five students did complete the Fast Track Electronic Technician certificate, a decision was made to discontinue the 16 credit Fast Track entry level certificate (see below). Nevertheless, electronic courses did benefit from the purchase of some new equipment and the addition of course content relevant to that equipment.

## **Computer Technician**

Industry partners advised program faculty and staff that companies now prefer to have in house employees who can repair computers rather than use IT vendors. As a result, the recommendation was to include “power over Ethernet” and “basic electronics,” in the certificate. They also suggested that students gain more proficiency in binary and hexadecimal math in order to do “IP addressing.” It is not clear to what extent curriculum has been revised to include these additional subject matter areas.

### **Certified Network Technician**

Subject matter experts’ feedback and information gained by faculty at professional development workshops paid for by the TAACCCT grant, resulted in the college’s increased knowledge of changes in industry standards and requirements including the need for technicians to have training in security content. As a result, WCCC faculty added to the Fast Track rubric of courses a course specifically focused on security. In addition, curriculum was revised to include more content on CISCO systems and to better prepare students for B & I certification.

Faculty also made some important shifts in their use of teaching resources. Online text was perceived to be more up to date than print text and more accessible to students. As a result, faculty increased online course content. They also made greater use of virtual software and labs to help contextualize course material and to solidify the integration of course content.

Like some of their above counterparts, faculty teaching certified network technician courses increased their use of group assignments and projects as well as encouraged peer-to-peer activities.

Faculty recognized the need to expand soft skills training, especially for the many students who arrived without any professional skills, and who needed help to change behaviors unsuited to the work place. Faculty, however, expressed concern about the lack of sufficient time in 16 weeks to cover both subject matter and soft skills content. As a result, there was minimal focus on soft skills.

### **FAST TRACK PROGRAM MODIFICATIONS**

As indicated above, despite active recruitment efforts focused on the project’s target population, enrollment in Fast Track programs was far lower than expected. The reasons included: the intense time commitment required (on average 35 hours per week) and thus basically a full time commitment to the program; day time program schedules; and tuition costs. In addition, although there were no admissions restrictions, the majority of prospective students who inquired about the program did not have the requisite math and English skills to successfully complete such intense programs. As such, program staff advised these individuals first to enroll in CMU’s developmental education courses prior to enrollment in Fast Track.

In addition to student enrollment challenges, as CMU's faculty worked with Fast Track students they raised concerns about the amount of work needed to absorb so much content in such a short period of time. For example, a number of courses that complement one another are best taken sequentially rather than concurrently. Frequently faculty made themselves available to help students get through the rigors and demands of the 16 week programs. However, after the first academic program cycle some faculty began to question if all certificate areas lent themselves to compression into 16-18 credits and a single semester.

The consensus was that an entry level minor certificate of 16-18 credits provided students a chance to explore a subject area; to prove to themselves they could do it (very important for many non-traditional students); to achieve a milestone credential; and to decide if they then wanted to go on academically or go out and seek employment. The end result of program focused discussions was some curriculum revisions, but more critically, the rethinking of the TAACCCT pilot idea of one term entry level certificates in all subject areas.

Faculty concerns were echoed by some of CMU-WCCC's industry partners, who were also concerned about the capacity of Fast Track students to absorb and retain substantial amounts of technical information in a relatively short time period. Many stated that more extensive skills and knowledge were needed for even "entry level" jobs. The Fast Track certificate alone was not sufficient to meet most industry needs.

In light of the above feedback and considerations, a decision was made spring 2015 to restructure the Fast Track certificates. Basic Welder and Computer Technician would remain entry level 16-18 certificates. However, a new course sequence and schedule would be established for them so students could opt for full time study and a one term certificate, or part time study and complete the certificate in two or more terms.

Further, the Basic Welder certificate program would be restructured to allow students more flexibility in choosing specialty area. Thus, "instead of "forcing" students to take the advanced SMAW class, they would be able to choose Fabrication, GTAW, or something else appropriate to fulfill their requirements."

Faculty stated that this new flexibility would bring

*"...advantages for the students, school, and local industry. The students have more choice in their education, the school is focusing the specific knowledge for those who want it, and this flexibility may follow changing trends in the local industry better than a rigid structure."*

In addition, in response to the rapid changes in technology and the need for incumbent workers to retool themselves in more specific areas, a plan was developed to transform some of the Fast Track certificates into intermediate and advanced level certificates that could also be completed part time in two terms. As possible, weekend and evening courses would be scheduled to accommodate working students.



Note the possibility of stacking credentials through the laticing of courses was continued and encouraged. See Appendix B for the laticing possibilities that existed under the six offered Fast Track certificates.

Table II below presents what existed under the grant funded Fast Track certificate programs and the changes that CMU has begun to roll out. Only Basic Welder and Computer Tech are to remain Fast Track certificates (16-18 credits) – all the other Fast Track certificates will be transformed into intermediate and advanced certificates. Further, the two remaining Fast Track certificates will become more flexible in that students can enroll in them part time and complete their credits over one or more semesters. Students no longer have to be full time and complete all Fast Track credits in a single semester.

TABLE II: ORIGINAL FAST TRACK CERTIFICATES AND REVISED CERTIFICATE OFFERINGS				
CERTIFICATE	FAST TRACK CREDITS	SEMESTERS PT=Part Time FT = Full Time	CREDENTIAL	SKILL LEVEL <sup>19</sup>
Basic Welder	16	1 FT 2 PT	Fast Track Certificate	Entry-Level
CAD/CAM	19	2 PT	CTE Certificate	Mid-Level
Certified Network Tech	17	2 PT	CCENT*	Mid to Advanced
Computer Tech	16	1 FT 2 PT	Fast Track Certificate	Entry-level
Control Systems Tech	16	2 PT	CTE Certificate	Mid-level
Electronic Tech	16	2 PT	CTE Certificate	Mid-level

\* CCNET = Cisco Certified Entry Network Technician

## STUDENT FEEDBACK

### Student Surveys

Student pre and post course surveys<sup>20</sup> were administered in all courses under the Fast Track rubric and several other courses affected by TAACCCT grant dollars, i.e., taught by Fast Track faculty paid under by grant. The focus for the surveys was collecting information and feedback from students enrolled in Fast Track, 30 credit certificate and AAS degree programs. Given student course withdrawals after the semester began, the section that follows will only present highlights from post course survey responses,<sup>21</sup> a total of 190 received.

<sup>19</sup> Entry level, mid-level or advanced, e.g. incumbent workers

<sup>20</sup> IRB Modifications #2 and #3

<sup>21</sup> The original plan was to do a pre post survey match of students to track changes in pre course self-rated skills, and how pre course ratings might forecast later difficulties; changes in self-rated skills; and changes in academic and

The distribution of completed post course surveys by credential is presented in Table III below.

TABLE III: ENROLLMENT BY CREDENTIAL		
	Frequency	Percent
FAST TRACK	38	20%
30 Credit Certificate Program	14	7%
Associate Degree Program	110	58%
Bachelor's Degree	14	7%
Other	14	7%
Total	190	101% <sup>22</sup>

Given the small numbers of Fast Track student surveys (n=38 out of a total cohort of 40) and the number of 30 credit student surveys (n=14) as compared to associate degree students (n=110), the following analysis of responses is limited to descriptive statistics.

Table IV shows the distribution of students by their credential and program subject area who completed a post course survey.

TABLE IV: POST SURVEY RESPONDENTS BY CREDENTIAL AND PROGRAM OF STUDY								
	ALL STUDENTS		FAST TRACK STUDENTS		30 CREDIT CERTIFICATE STUDENTS		ASSOCIATE DEGREE STUDENTS	
	Number Per Subject Area	Percent Per Subject Area	Number Per Subject Area	Per Cent by Subject Area	Number Per Subject Area	Per Cent by Subject Area	Number Per Subject Area	Per Cent by Subject Area
Basic Welding	63	33%	22	58%	11	79%	28	25%
CAD/CAM	23	12%	5	13%	2	14%	15	14%
Certified Network Technician	15	8%	0	0%	0	0%	13	12%
Computer Technician	20	11%	4	11%	0	0%	9	8%
Control Systems Technician	6	3%	2	5%	0	0%	4	4%
Electronics Technician	3	2%	3	8%	0	0%	0	0%
Other	57	30%	1	3%	1	7%	39	35%
Missing	3	2%	1	3%	0	0%	2	2%
Total	190	102% <sup>23</sup>	38	101%	14	100%	110	100%

As indicated above, many associate degree students were not enrolled in one of the six Fast Track programs (n=39), but nevertheless were taking one or more courses under the Fast Track rubric. By program area, Basic Welder was the principal program area in which students were enrolled. Among Fast Track students 22 out of 38 who completed the survey were enrolled in

employment plans. However, given that many students did not follow instructions in constructing their self-identifier, we only could match 49% of the post surveys for all unique students surveyed and only 55% for Fast Track students or 22 students. Given the small cells and our inability once again to use tests of significance we have not included pre/post matches in this report.

<sup>22</sup> Due to rounding, may not add to 100%

<sup>23</sup> Due to rounding, may not add to 100%

the Basic Welder certificate. [Note 19 out of 40 Fast Track graduates received their certificate in welding, or 47.5 percent of all Fast Track graduates.] Given the uneven distribution of students across the program areas we are only presenting analysis for students enrolled in the Fast Track Basic Welder program, comparing them with students from the 30 credit certificate and associate degree programs who were also taking welding courses. Still, given the small numbers in each of these credential categories, the responses below must be read as specific to the students who completed the surveys, and not generalized beyond them. Further, given the sizes of each cell, no tests of significance have been done.

For all surveys, a five point Likert scale was used. One (1) indicated the lowest response score and five (5) indicated the highest response score.

Table V compares Fast Track responders with 30 credit certificate and with associate degree program responders for series of questions related to the helpfulness of different teaching/learning modalities.

<b>TABLE V: "HOW HELPFUL WAS...FOR LEARNING COURSE OR PROGRAM CONTENT?"</b>			
	<b>Number of students</b>	<b>Mean</b>	<b>Median</b>
<b>In class discussions</b>			
All students' surveys	190	3.72	4
All welding students' surveys	61	3.62	3
Fast Track welding students' surveys	22	3.59	3
30 Credit welding students' surveys	11	3.45	3
Associate degree students in welding surveys	28	3.71	4
<b>In class lecture</b>			
All students' surveys	190	3.73	4
All welding students' surveys	61 <sup>24</sup>	3.42	4
Fast Track welding students' surveys	22	4	4
30 Credit welding students' surveys	11	3.53	4
Associate degree students in welding surveys	28	3.11	3
<b>In class computer labs/experiments</b>			
All students' surveys	190	3.71	4
All welding students' surveys	61 <sup>25</sup>	3.41	3
Fast Track welding students' surveys	22	3.63	3
30 Credit welding students' surveys	11	3.6	3
Associate degree students in welding surveys	28	3.2	3.5
<b>Hands on physical lab</b>			
All students' surveys	190	4.03	5
All welding students' surveys	61 <sup>26</sup>	4.18	5

<sup>24</sup> 18 students had missing data

<sup>25</sup> 20 students had missing data

<sup>26</sup> 18 students had missing data

Fast Track welding students' surveys	22	4.41	5
30 Credit welding students' surveys	11	4.57	5
Associate degree students in welding surveys	28	3.84	4

Looking at both mean and median scores for survey completers across all subject fields and credentials, the preferred mode of learning clearly was hands on physical labs. This held true for welding students from all credentials and programs. There are some relative differences across the credentials re other preferred modes, however, given the size of the cells – these patterns are only suggestive. All credential students with the exception of associate degree preferred class lectures over class discussions. For Fast Track students, all modes of teaching/learning were relatively the same with the exception of the above cited labs.

Table VI below presents students' response when asked about the pace of their programs. The focus of the question was really to learn how Fast Track students perceived their one term program of study. Other students had two terms (30 credit certificate) or four or more terms (associate degree) for their course of study. Therefore, the responses must be viewed in the context of the different lengths of students' programs. We found that both the mean and median for Fast Track students were slightly higher than what others students indicates. This suggests that the students in Fast Track felt the program's pace was slightly too fast.

<b>TABLE VI: HOW DID YOU FIND THE PACE OF THE PROGRAM IN TERMS OF LEARNING THE MATERIAL? (1=Too Slow / 5=Too Fast)</b>			
	<b>Number of students</b>	<b>Mean</b>	<b>Median</b>
All students' surveys	190	3.40	
All welding students' surveys	61		
Fast Track welding students' surveys	22	3.67	3.5
30 credit welding students' surveys	11	3.36	3
Associate degree welding students' surveys	28	3.43	3

Fast Track was created to rapidly prepare students for employment. We therefore were interested to learn to what extent students felt their program had prepared them for employment in their field of study, Table VII. Again, we note that there are limitations to our comparisons - Fast Track students were in fact completing their program of study when they completed their surveys, while students in the 30 credit and associate degree programs were not necessarily completing their programs of study. And it may have been premature for these students to know how prepared they would be after they finished their respective programs. With these caveats, it is not too surprising that both the median and mean scores for Fast Track students were slightly higher than for their counterparts. Within the parameters of a one term program, Fast Track students felt they were ready to enter the labor market. Our caution in looking at these responses is that these are students' perceptions, not those shared by industry. And as will be discussed below (see section on advisory committees) employers were far less

confident that Fast Track students were actually prepared for employment, even at the entry level.

<b>TABLE VII: "DO YOU FEEL PREPARED) FOR EMPLOYMENT?" (1=NOT AT ALL / 5=PREPARED)</b>			
	<b>Number of students</b>	<b>Mean</b>	<b>Median</b>
<b>All students' surveys</b>	190	3.71	4
All welding students' surveys	61	3.74	4
Fast Track welding students' surveys	22	3.9	4
30 credit welding students' surveys	11	3.44	3
Associate degree welding students' surveys	28	3.72	3

Finally, we asked students the degree to which they were satisfied with their program of study, Table VIII below.

<b>TABLE VIII: "OVERALL, HOW SATISFIED WERE YOU WITH THIS PROGRAM - INCLUDING WHAT YOU LEARNED AND THE MEANS BY WHICH YOU LEARNED IT?" (1=not satisfied and 5=extremely satisfied)</b>			
	<b>Number of students</b>	<b>Mean</b>	<b>Median</b>
<b>All students' surveys</b>	190	3.54	4
All welding students' surveys	61	3.45	4
Fast Track welding students' surveys	22	3.91	4
30 Credit welding students' surveys	11	3.64	4
Associate degree students in welding surveys	28	3.48	4

Here the means of Fast Track students was slightly higher than their 30 credit and associate degree counterparts, but the medians for all the credential programs were the same. Without a larger number of students, the means are only suggestive. However, a number of questions emerge: does enrollment in a circumscribed program of study increase student satisfaction? Does a more time limited program create a sense of satisfaction - clearer goals and more structure? Does access to a dedicated career specialist make a difference? Unfortunately, we are unable to answer these questions under this TAA grant. This might, however, be an area for future research re CTE versus degree programs.

### **Student Feedback Post Program Spring 2016 Survey and Phone Interview**

As indicated above, SMC sent out surveys to all 40 graduates in the spring of 2016 and received 8 completed surveys back. Of note is the distribution of responses – three students from fall 2013, one from spring 2014, two from fall 2014, and two from spring 2015. When asked about their overall satisfaction with their fast Track experience in terms of the skill sets and knowledge they gained the mean score was 3.75 and the median was 3.5. However, three Fast Track graduates indicated 5, and one Fast Track graduate indicated 2. When asked how the Fast Track certificate program made a difference in their employment searches, three graduates said it “opened up new employment opportunities.” The responding graduates also indicated that

their computer and math skills had improved as a result of their enrollment in Fast Track. Of note was the answer to our question: “has the Fast Track Certificate made any other difference in your life?” There were multiple options and students could select more than one as well as write in. Five students selected, “gave me more confidence” and three indicated they had gained new friends. One graduate checked, “inspired me to continue with my education” and one wrote in “gave me a taste of what could be a good career.”

The single Fast Track graduate who responded to our invitation for a phone interview was one of the many non-traditional students who enrolled in Fast Track. Echoing what we received on the survey, this former student stated that he had gained confidence from being in the program. He had not been a very good student in high school but discovered that he could still learn new things, and actually did much better academically in Fast Track and later in his associate degree program – a program he chose to do as a result of his good experiences in Fast Track. He credited the support he received from faculty and Fast Track program staff as a factor in his success.

## **STRATEGIC ALIGNMENT**

### **Advisory Committees and Industry Partners**

Colorado’s state government pursuant to federal Perkins’ regulations requires that all CTE programs hold regularly scheduled advisory board/committee meetings.<sup>27</sup> WCCC schedules semi-annual CTE program advisory meetings (fall and spring) at which field subgroups also meet. During the TAA project two additional advisory committees held meetings<sup>28</sup> with some of the same industry partners as well as new ones. One of these committees focused on the manufacturing cluster (Basic Welder and CAD/CAM) and one focused on process technology and technology integration clusters (Computer Technician, Electronics Technician, Control Systems Technician, and Certified Network Technician).

The minutes of the above cited five advisory committee meetings included discussions of Fast Track issues as well as other CTE issues. The embedding of Fast Track rather than the creation of a separate Fast Track advisory committee made good strategic sense. It facilitated the integration of program discussions in respect to both Fast Track and non-Fast Track credential programs.

However, due to tight schedules of industry reps, overall participation in TAA-related committee meetings was inconsistent. This affected program feedback, review and planning activities, i.e., different industry partners brought at times, very different perspectives. For example, some of the initial industry partners who encouraged the creation of Fast Track were

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<sup>27</sup> Colorado Community College System (2008). A guide to the operation of career and technical education advisory committees. Denver, Colorado: Author. p ii

<sup>28</sup> The manufacturing committee met three times and the Process Technology and Technology Integration committee met twice

not at the table once the certificates were up and running; and “new” partners at the table expressed some reservations about the Fast Track model (see below).

SMC’s discussion with department heads, program staff and the single committee member, suggested that more advance notice and more regularly scheduled meetings along with better defined functions would have strengthened these committees and the enhanced their ability to guide CMU. With the recent reorganization of WCCC’s leadership structure, it will be important to identify a member of the faculty or staff to coordinate and convene all advisory board meetings.

The advisory recommendations can be summarized then as: a) the continuation of two entry level 16-18 certificates; b) the reconceptualization of the other four Fast Track certificates into mid-level and advanced certificates; c) the reassessment of content of the entry level Basic Welder certificate to provide a more generalist foundation; and d) the option to complete all certificates in one or more semesters to enable part time study. These findings are discussed in more detail below.

**Manufacturing:** Three advisory committee meetings were held (March 2014, December 2014 and October 2015). The attendance varied at each meeting but the following companies were represented at one or more meetings: All Metals Welding; American Equipment Manufacturing; Cameron; Western Slope Iron; Capco; Mountain Racing Products; Schmueser & Associates, Inc.; Spendrup Fan Company; and Wren Industries among others.

The manufacturing committee focused on the *Basic Welder* and *CAD/CAM* programs. They discussed changing 3 credit hour courses to 4 credit hours to better reflect the work students are doing and to be more in sync with other community colleges, e.g. increase GMAW/FCAW, GMAW and FCAW classes from 3 credits to 4 credits. The committee also discussed the content of specific courses, course sequencing and requirements for both certificate and associate degrees in welding for employment in the field. For example, as discussed above, pipe welding was eliminated from the Fast Track entry-level certificate, and only offered in the associate degree program; WELD 117 was split into two courses - one in cutting and one in welding; Welding 211 was also split into two courses - one in GMAW and one in FCAW; and advanced SMAW was added with emphasis in pipe.<sup>29</sup>

Advisory board meetings as well as more informal conversations among project staff, faculty, and industry partners often focused on growing concerns about the limited amount of knowledge and skills students are able to absorb in a single term. For example, local employers stated that Fast Track Basic Welder graduates would not be hired as pipe welders or even in most cases as an entry level welder, but instead would most likely be hired as a “welder helper” at about \$9.50 per hour. Program staff acknowledged that this rate was far lower than what most students were expecting. However, employers did indicate that other things being equal, a Fast Track graduate would probably be hired over someone without a Fast Track certificate.

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<sup>29</sup> This content comes from the minutes of the December 3, 2014 and October 13, 2015 advisory board meetings.

*CAD/CAM*: Again, industry reps provided helpful feedback and suggestions in respect to curriculum sequencing and course content. For example, there was agreement that a “*principles of production class*” should be added to the certificate and degree programs. They also suggested the elimination of CAD 108. Further, they suggested changing MAMT 151 and 155 to 251 and 255; and changing Numerical Control to CNC Machining in order to comply with Colorado Common Course Numbering; as well as adding MAMT 115 to incorporate manual machining fundamentals. There was overall concern by industry partners about the need for students to have higher level math skills in order to succeed in their respective fields.

Echoing their counterparts from welding, CAD/CAM employers registered concern about the amount of basic material students can learn within a 16 week program.

Both industry sectors, however, indicated that other things being equal a Fast Track certificate might increase “*an applicant’s chances of obtaining employment, but compensation would not be any higher.*”

**Technology Integration, Process Systems Technology**: This advisory group focused on four certificates: *Electronics Technician, Control Systems Technician, Computer Technician, and Certified Network Technician*.

Over the course of the grant, two advisory meetings were held (February 2014 and September 2014). The attendance varied at each meeting but the following companies were represented at one or both meetings or engaged with program faculty or staff via phone or email: the City of Grand Junction; CIS-ATIP; CRUM Electric; Quality Health Network; IT Solutions MCVSD51; Networks Unlimited; St. Mary’s Hospital; and Tri-ED Distributing.

A number of advisory committee participants expressed general concerns about the four above certificates. These concerns included the need for students to have more proficiency in math including binary, hexadecimal, and math that deals with IP addressing. Again, like their counterparts in manufacturing, industry representatives suggested that math proficiency needed to be evident prior to admission and more attention to math was needed throughout the Process Tech programs. Specific recommendations included the need for students to know power over Ethernet and to develop a stronger foundation in basic electronics within each of the four certificates. The challenge of a one term introduction to such extensive, if not complex program content, was discussed. Some of the above cited program changes evolved from these discussions, e.g., computer technician should remain a one term Fast Track program, but the others are being restructured into mid or advanced level certificate programs. Further, given increasing need in the medical – health sector for staff who can handle IT problems, a recommendation was made that CMU establish a Health Information Technology Certification, or Health Information Networking Certification that would combine medical office assistant content with IT/Network services.

Both advisory committees expressed the need for more soft skill development (body language, interviewing and other communication skills, professional presentation of self) to enable



graduates to more effectively work “with the customer, client, vendors” and provide effective assistance in staffing help desks/help lines. They also noted the need for graduates to be able to develop more advanced troubleshooting and project management skills than is possible within a one term course.

The above feedback and recommendations of WCCC-CMU’s industry partners speaks to the importance of industry being at the table from the very beginning of CTE program development and/or revision. In addition, CMU’s experiences suggest the importance of on-going documentation of industry feedback and changes in their thought processes; as well as subsequent decision making and program changes. Such longitudinal tracking will provide a historical record that can help the college identify best practices and lessons learned for future program development.

### **Other Industry Contributions**

Other industry contributions that should be noted are industry representatives assisting faculty with developing specific course content, identifying the critical elements to be included in industry specific resumes and applications, and contributing equipment to WCCC.

### **The Workforce Center**

Fast Track program staff built on pre-existing relationships between WCCC and the Mesa County Workforce Center and established a strong working relationship with the WFC. Periodic phone and in person meetings took place throughout the TAACCCT grant to discuss employment trends, referral processes, screening of prospective students, as well as the needs of individual students in the Fast Track program. These contacts involved front line WFC staff as well as senior staff including the director of the WFC, the director of employment, and the director of business development.

Fast Track was marketed to individuals registered at the WFC and WFC referred prospective students to the Project Manager and career specialists for interviews. At the same time, program staff referred prospective students to the WFC to explore financial assistance including TAA and WIA and/or to take the Work Keys series of assessment exams. Fast Track students were also referred to the WFC to obtain information about employment opportunities.

### **ONLINE EDUCATIONAL RESOURCES (OER)**

The OER requirement for TAACCCT grantees was to upload all materials designed *specifically* for the grant onto the Skills Commons TAACCCT database. In response to ETA’s requirements, WCCC uploaded marketing materials developed for Fast Track recruiting. However, given that no curriculum was specifically developed for Fast Track, no other OER materials were posted.

### **OUTCOMES - Demographics and Academics**

Tables I above presented the total number of *unique students* served by the TAACCT grant and the distribution of the credentials they were pursuing - Fast Track, 30 credits, associate degrees (requires minimum of 60 credits for most programs) and bachelor degrees (requires 120 credit hours). However, given the small numbers of bachelor degree students, the remaining analysis only includes 30 credit and associate degree students in the “non-Fast Track cohort.”

We began with a comparison of selective demographic characteristics for students enrolled in a Fast Track certificate and those who were in the non-Fast Track cohort, Tables IX and X.

	FAST TRACK STUDENTS (n=40)		NON-FAST TRACK OTHER CERTIFICATE (n=44)		NON-FAST TRACK AAS STUDENTS (n=161)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Male	32	80%	42	95.5%	145	90.1%
Age Average <sup>31</sup>	41 years	N/A	32	N/A	30	N/A
Age Min	21 years	N/A	19	N/A	19	N/A
Age Max	75 years	N/A	74	N/A	66	N/A
Disabled	0	0%	0	0%	0	0%
Persons of Color <sup>32</sup>	5	12.5%	10	22.7%	30	18.6%
Veteran Status	2	5%	4	9.1%	27	16.8%
Pell Recipients	21	52.5%	26	59.1%	93	57.8%

Students enrolled in Fast Track shared some of the same demographic and academic characteristics as their counterparts in other certificate and degree programs, e.g., male, Pell recipient, and not disabled. However, there were some important differences creating challenges for any comparison of outcomes for the two cohorts.

First, Fast Track students were on average ten years older than those students pursuing other certificates or degrees. This is not too surprising given that recruitment focused on TAA eligible and like individuals, veterans and other un or under employed individuals who needed to retool themselves. Second, Fast Track students were less racially diverse than the other certificate programs, only 12.5 per cent reporting as a “person of color” in contrast to 22 percent of those enrolled in another Career and Technical Education (CTE) certificate programs. It is not clear why this was the case and might be important to further explore. Third, only 5 percent of Fast Track enrollees were veterans compared 9.1 percent of CTE enrollees and 16.8 percent of individuals pursuing a degree. Again, given the involvement of veteran organizations in recruitment activities, it is not clear why this was the case – but possibly relates to the need for veterans to work concurrent to their studies.

<sup>30</sup> There were 6 students who were reported as Non-Degree Seeking and thus did not fall into these categories

<sup>31</sup> Calculated as the time from their Date of Birth to 9/30/2015

<sup>32</sup> There were students who did not report an ethnicity: 5 Fast Track, 3 Non-Fast Track Certificate, and 10 Non-Fast Track Degree students

TABLE X: ETHNICITY OF ALL STUDENTS IN GRANT AFFECTED COURSES				
	FAST TRACK		NON-FAST TRACK	
	Frequency	Percent <sup>33</sup>	Frequency	Percent <sup>34</sup>
Missing	4	10%	13	6%
White	29	73%	155	74%
Black	2	5%	2	1%
Native American	1	3%	5	2%
Asian	0	0%	2	1%
Hispanic	1	3%	21	10%
Pacific Islander	0	0%	1	1%
Two or More Races	3	8%	12	6%
Total	40	102% <sup>35</sup>	211	101% <sup>36</sup>

The proportion of Hispanic students in Fast Track (3 percent) was much lower than in non-Fast Track programs (combined certificate and degree), 10 percent. It is not clear if this was a random occurrence or suggests some other issues, e.g. recruitment, the need for employment concurrent with college studies. Further tracking would be important to understand if it is a pattern, and why.

Given that Fast Track was an intensive program of study requiring the completion of 16-18 credits in a single semester, all Fast Track students were full time students. In contrast, only 49 per cent of students pursuing 30 credit and/or associate degrees were full time.<sup>37</sup>

TABLE XI: MATRICULATION STATUS OF UNIQUE PARTICIPANTS <sup>38</sup> IN GRANT AFFECTED COURSE				
	FAST TRACK		NON-FAST TRACK	
	Frequency	Percent <sup>39</sup>	Frequency	Percent <sup>40</sup>
Full-time Status	40	100%	103	49%
Part -time Status	0	0%	108	51%
TOTAL	40	100%	211	100%

We were also interested in comparing the GPA's for students who were full and part time and those in the Fast Track certificate programs as compared to their counterparts who were pursuing 30 credits certificates and associate degrees. It is important to note here that Fast Track and 30 credit students were only taking Fast Track or other CTE courses (see Table X above), whereas students enrolled in an associate degree program were required to take other general education courses, and may have been pursuing a degree in a totally different subject area, e.g.

<sup>33</sup> Percent includes missing student data

<sup>34</sup> Percent includes missing student data

<sup>35</sup> Due to rounding, may not add to 100%

<sup>36</sup> Due to rounding, may not add to 100%

<sup>37</sup> All Fast Track = Full time. For Non-Fast Track FT = FT in every fall and spring they were enrolled, PT = PT in at least one fall or spring they were enrolled.

<sup>38</sup> Only 30 credits and associate degree students.

<sup>39</sup> Percent includes missing student data

<sup>40</sup> Percent includes missing student data

political science. As a result, the nature of their academic coursework may have varied considerably from their CTE only peers.

Nonetheless, despite the intensity of Fast Track and the technical nature of all courses, Fast Track certificate students maintained a higher mean and median.<sup>41</sup>

TABLE XII: STUDENTS BY MATRICULATION STATUS AND GPA <sup>42</sup>										
	FAST TRACK STUDENTS N=40					NON-FAST TRACK STUDENTS N=194				
	Frequency	Minimum GPA	Maximum GPA	Mean GPA	Median GPA	Frequency	Minimum GPA	Maximum GPA	Mean GPA	Median GPA
Full-time Status	40	3	4	3.69	3.71	100	0	4	3.15	3.55
Part-time Status	0	0	0	0	0	94	0	4	3.12	3.42
TOTAL	40	3	4	3.69	3.71	194	0	4	3.14	3.5

### OUTCOMES - Stacking Credentials

Over the course of the TAACCCT grant four Fast Track certificate students went onto to earn additional credentials. Four students earned three additional CTE certificates; one of these students also went on to earn and an associate degree. And another Fast Track certificate graduate also went on to earn an associate degree.

TABLE XIII: STUDENT STACKING CREDENTIALS				
	Student One	Student Two	Student Three	Student Four
Initial Fast Track Certificate	XX	XX	XX	XX
Second Fast Track Certificate	XX	XX	XX	
Associate Degree			XX	XX

### EMPLOYMENT AND WAGES

In this section we look at the employment and wages of the students who completed a Fast Track certificate. We begin with a brief overview of the Mesa County/Grand Junction regional economy during the life of the grant. We then discuss the limitations of data and data analysis. We then present the data and possible interpretations

#### Economic Context

Over the past four years (2012-2016) Mesa County has reported a higher rate of unemployment than the state of Colorado and the nation as a whole. And while the Mesa County's rate of unemployment has dropped from a high of 9.7 in 2012 to a low of 5.7 in 2015, the current rate of 6.0 is 33 percent higher than the rest of Colorado (Table XIV below).

<sup>41</sup> GPAs only for of students who completed Fast Track, other CTE certificate programs and/or degree programs

<sup>42</sup> These courses were flagged using a list of courses that were surveyed by grant staff with intake forms. However, only 238 unique participants appear in those flagged courses, meaning that at least one course was probably left off the list. Additionally, some students from the non-Fast Track group withdrew and thus did not earn a grade. Therefore, the GPA is calculated with n=234 (40 + 194 =234).

TABLE XIV: COMPARISON OF UNEMPLOYMENT RATES <sup>43</sup>			
	US	Colorado	Mesa County
2012	8.2	7.8	9.7
2013	7.3	6.7	8.8
2014	6.2	4.8	6.0
2015	5.3	3.8	5.7
2016	4.9	3.8	6.0

High unemployment often leads to individuals returning to school to upgrade their skills or learn new ones.<sup>44 45</sup> However, a commitment to a certificate or degree program means reduced time for employment, as well as the costs for schooling. So the rhetorical question arises, “to what extent will the earning of additional credentials increase my pay scale when I do find a job; and will I find a job in my field of study?”

The Bureau of Labor Statistics reported that as of May 2015 average hourly wages in Mesa County were \$20.73 as compared to the national averages \$23.23, or 11% lower for sectors.<sup>46</sup> The impact of Mesa County’s lower average wages on recruitment efforts was raised as an issue by program staff, faculty and staff from the Mesa County Workforce Center.

In sum, the economic context for the Fast Track programs was a region in which there was a large demand for jobs, but wages were often not reflective of state and national trends.

### Limitations of Available Data

State and federal unemployment insurance (UI) data is used by researchers to track changes in unemployment as well as wages. SMC requested CMU’s assistance in getting UI files. CMU was, after many attempts, able to get UI data files from Colorado’s Department of Higher Education. However, the UI data files SMC received from CMU did not include NAIS sector codes. As noted previously, at SMC’s request CMU received these files from Colorado’s Department of Higher Education. In addition, the data files SMC received did not include information on the position an individual is working in, nor if he/she is working full or part time. Thus, our analysis of student employment and wages does not provide information if students completing the Fast Track program or other CMU certificate and degree programs actually found and kept a job in their respective field of study; or if they worked full or part time (possibly to also attend classes and earn higher credentials.). What we have instead is data on employment status and the wages earned. This limited data makes it impossible to attribute any gains in employment or changes in wages over time to the skills and knowledge acquired during a course of study for a certificate or a degree. Further, the UI data does not track other factors related to employment and wages such as promotions to higher level jobs within a

<sup>43</sup> Data is from the US Bureau of Labor Statistics and the Current Population Survey. Retrieved from <http://data.bls.gov/timeseries/LNS14000000>

<sup>44</sup> O’Dell, A. (2015). Where Do the Unemployed Go? Back to School... <http://economyandmarkets.com/demographic-trends/education/where-do-the-unemployed-go-back-to-school/>

<sup>45</sup> Barr, A., & Turner, S. (2015) Out of work and into school: Labor market policies and college enrollment during the Great Recession. *Journal of Public Economics*. 124, 63–73.

<sup>46</sup> BLS (2015) Occupational Employment and Wages in Grand Junction — May 2015. Retrieved from [http://www.bls.gov/regions/mountain-plains/news-release/occupationalemploymentandwages\\_grandjunction.htm](http://www.bls.gov/regions/mountain-plains/news-release/occupationalemploymentandwages_grandjunction.htm)

company or sector because of the earning of an additional credential. For most Fast Track students all we can compare the before and after – not much more.

SMC's evaluation plan included surveying all Fast Track students post-graduation to get further information about their experiences in Fast Track, but more importantly to collect information about graduates post program academic and/or employment experiences. The latter focus was designed to complement the more limited data available from UI data files where as noted above, neither industry sector or job title are identified. Unfortunately, as mentioned above, out of the 40 graduates to whom we sent surveys spring 2016 we only received back 8 completed surveys – this was the total response after multiple attempts to reach them through both postal mail and emails. (Note, only two surveys were returned as undeliverable). The reason the remaining graduates did not respond either to the survey or the above noted request for phone interview is likely, in part, due to the amount of time elapsed since graduation. Given the low rate of employment per UI data, there is a possibility of frustration that the anticipated return on an investment in a Fast Track certificate was not met. The one graduate to whom SMC spoke stated that he thought there was a guarantee of employment post Fast Track. He could not identify any specific statement made, but the marketing led him to assume such, and while he was employed he was not employed in his field of study.

### **Employment and Wages Analysis**

The Unemployment Insurance data files used for all employment and wage analysis was obtained by CMU from the Colorado Department of Higher Education. It included employment and wage data for those employed in Colorado, but did not include data on individuals who moved out of state to pursue employment.

Table XV below compares the employment of individuals in the two cohorts - Fast Track certificate graduates and non-Fast Track students who earned 30 credits and associate degrees employed in Colorado during the study period, fall 2013 through fall 2015. Tracking begins in the quarter<sup>47</sup> in which the student enrolled in their respective program of study, the quarter in which he/she completed their credential, and then 6, 12 and 18 months subsequent to credential completion. It is important to note that employment may not have been throughout the quarter, nor does it indicate full or part time employment. The numbers are all rather small so the reader should not interpret this data for any other individuals except those in these cohorts.

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<sup>47</sup> All UI data uses quarters, therefore incumbent workers' data reflects the full quarter in which a student enrolled in a program – as such he/she may have stopped working when his/her studies began. Similarly, for “time of completion” reflects the full quarter – so that a recent graduate may or may not have worked the day of completion but did within the quarter of completion.”

TABLE XV: EMPLOYMENT AT ENROLLMENT AND WITHIN SIX, TWELVE, AND EIGHTEEN MONTHS OF GRADUATION						
	ALL STUDENTS		FAST TRACK STUDENT		NON-FAST TRACK STUDENTS	
	Frequency	Percent of All Students	Frequency	Percent of All Students	Frequency	Percent of All Students
Number of students	129	100%	38 <sup>48</sup>	100%	91	100%
Students employed at start of program of study	49	38%	15	39%	34	37%
Students employed at time of credential completion	54	42%	13	34%	41	45%
Students employed 6 months post completion	55	43%	19	50%	36	40%
Students employed one year post completion	43	33%	13	34%	30	33%
Students employed 18 months post completion <sup>49</sup>	22	17%	9	24%	13	14%

The numbers are too small for any tests of significance, but a larger percent of non-Fast Track students were employed at time of completion than Fast Track – this may reflect part time employment during the course of academic studies. But this is only a guess and cannot be confirmed given available data.

Fast Track students then appear to have a somewhat better pattern of employment at six months and 18 months after program completion than non-Fast Track students. But, again, it is not clear what factors contributed to this and the numbers are small so reflect only the experience of the individuals in the cohorts under study. Perhaps the Fast Track’s cohort’s older average age affected their employment opportunities. Regression analysis to determine the factors that were associated with possible differences was not possible given the small cell sizes.

As we tracked all the data, of most significance was the low levels of employment for all graduates – ranging from a low of 24 to a high of 50 percent for Fast Track; and a low of 14 to a high 45 percent for 30 credit and associate degree students. In sum, for all graduates, rates of employment were 50 percent or less. During the grant, members of the CTE advisory committee members and other industry partners indicated that entry level jobs were scarce – especially in the Mesa County region – and that current employment needs were for individuals with experience and advanced levels of skill for their specific fields. These comments from industry were confirmed by anecdotal feedback program staff received from Fast Track graduates who

<sup>48</sup> Although 40 students completed Fast Track and earned a degree, only 38 students were shown in the credential file as having earned a credential. The reason for this is unknown.

<sup>49</sup> Note some time censoring occurred given the date of completion, i.e., 18 months may not have elapsed subsequent to the student’s program completion. For example, a student earned her credential in December 2015 – so only 12 months of employment/wage tracking is possible.

kept in touch post completion. That is, students who had already earned an associate and bachelor degree were more often able to get jobs, and to get jobs in their field of study than Fast Track certificate holders who did not also have an associate or bachelor’s degree. Overall, however, these very low rates of employment are a real concern.

To amplify this concern are the findings presented in Table XVI below. Here SMC looked at employment of an individual over time, not just who was employed at a specific point in time, e.g. 6 or 12 months after completion. Given that we used six month intervals – we may not have captured changes of employment status between the intervals – we thus have labeled the table estimated”.

The economic context helps to explain these low rates of employment. For example, as reported above, the Basic Welder program had the largest enrollment of any of the offered technical credentials. However, during the grant there were significant fluctuations in the oil and gas extraction sector, a sector that uses welders.

Fast Track students appear to have had more continuous employment than non-Fast Students – however, it is unknown what factors contributed as cell sizes preclude any regression analysis.

TABLE XVI: ESTIMATED NUMBER OF STUDENTS WITH CONTINUOUS EMPLOYMENT AFTER COMPLETION						
	ALL STUDENTS		FAST TRACK STUDENT		NON-FAST TRACK STUDENTS	
	Frequency	Percent of All Students	Frequency	Percent of All Students	Frequency	Percent of All Students
Number of students	129	100%	38	100%	91	100%
Students employed at time of credential completion	54	42%	13	34%	41	45%
Employed both at completion and six months after completion	35	27%	10	26%	25	27%
Employed both at completion and one year after completion	21	16%	6	16%	15	16%
Employed both at completion and 18 months after completion <sup>50</sup>	18	14%	6	16%	12	9%

In sum, these very low numbers for continuous employment for all certificate and associate degree graduates are very sobering. But again the reader is reminded that the cells are very small and thus only reflect the experiences of those individuals in the cohorts under study.

Next SMC looked at the average quarterly wages of our two cohorts - Fast Track certificate earners and those who earned a 30 credits or associate degree. Table XVII below indicates that comparing incumbent workers - those working at the start of their respective programs, non-Fast Track students were earning on average about \$1000 more than students who enrolled a

<sup>50</sup> Again, these numbers may have been affected by time censoring.



Fast Track certificate. This is interesting given the younger cohort of non-Fast Track students, but might also suggest that wages were a stimulus for Fast Track enrollees to return to school.

Non-Fast Track graduates earned more at the end of their programs than Fast Track. This might reflect more part time work among non-Fast Track students in the quarter of graduation.

It is important to note that in calculating the “average wage difference” between time of completion and 6, 12 and 18 months after credential completion – we calculated each individual’s wage difference and then averaged those. We observed a few outliers that affected the mean – but we decided to include all changes in wages.<sup>51</sup>

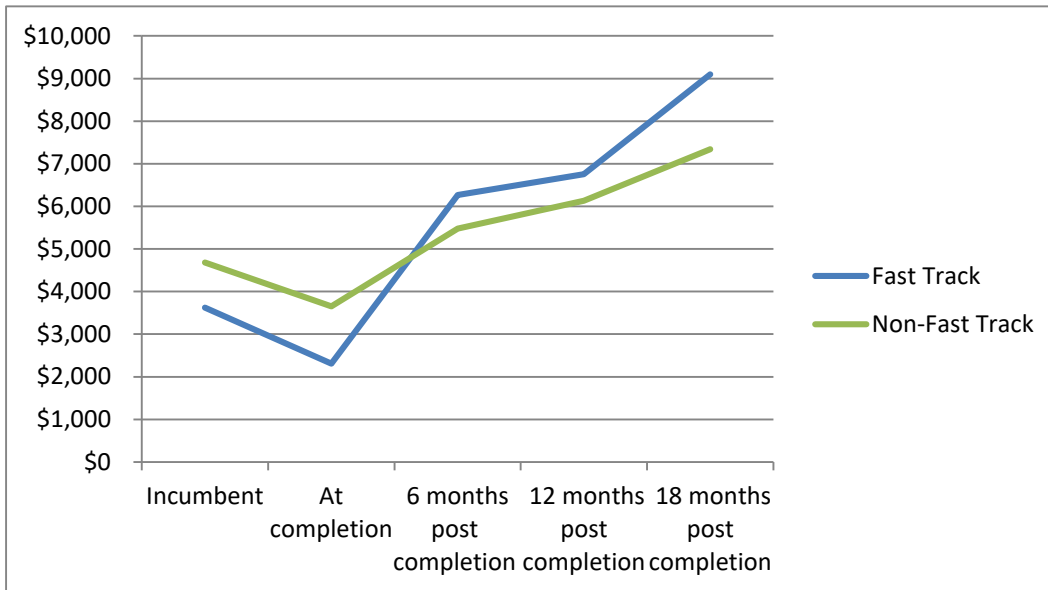
TABLE XVII: AVERAGE QUARTERLY WAGES AT ENROLLMENT AND WITHIN SIX, TWELVE, AND EIGHTEEN MONTHS OF GRADUATION						
	ALL STUDENTS		FAST TRACK STUDENT		NON-FAST TRACK STUDENTS	
	Number of Students	Average Wage	Number of Students	Average Wage	Number of Students	Average Wage
Number of students	129	N/A	38	N/A	91	N/A
Average incumbent wages	49	\$4359	15	\$3627	34	\$4682
Average wages at the time of completion	54	\$3331	13	\$2311	41	\$3654
Average difference in wages between incumbent and completion	31	-\$179	9	-\$282	22	-\$138
Average wages six months after completion	55	\$5751	19	\$6268	36	\$5478
Average difference in wages between completion and six months	35	\$2154	10	\$5340	25	\$880
Average wages twelve months after completion	43	\$6319	13	\$6753	30	\$6132
Average difference in wages between completion and twelve months	21	\$2430	6	\$2793	15	\$2284
Average wages eighteen months after completion	22	\$8061	9	\$9100	13	\$7341
Average difference in wages between completion and eighteen months	10	\$4127	2	\$3356	8	\$4319

There is a considerable change in average quarterly wages for Fast Track certificate earners six months post completion – but this an artifact of a single outlier. At the same time, the Fast Track cohort appears to be doing better than the non-fast Track cohort. This also seems to be the case 18 months post completion. Is it because the Fast Track certificate earners are working in sectors with higher pay scales than the non-Fast Track cohort which is a mix of credentials in technical fields as well as in the liberal arts. Lacking data on the sector of employment it is impossible to know. What we can say is that both Fast Track and non-Fast Track credentials resulted in higher

<sup>51</sup> One student had a difference of -\$27,093 which most certainly skewed the data. It was partially offset by a student who had a \$16,939 increase, so it was left in.

wages, 12 and 18 months post completion (see Figure I below) for those individuals within each cohort. The results should not be generalized beyond these individuals.

**FIGURE I: TRACKING AVERAGE QUARTERLY WAGES**



## CHALLENGES

### Variance with Grant Targets

Over the past three years, program staff and the third party evaluator have identified a group of overlapping barriers and obstacles to recruitment affecting the total number of Fast Track enrollees. Low numbers of enrollment subsequently affected other program related outcomes including number of unique participants, and credentials earned.

The following are the challenges and barriers– most previously reported in Third Party annual reports and in responses to queries by the Federal Program Officer (FPO) – that affected CMU’s ability to meet enrollment targets:

- The target population was the unemployed and the under employed. Despite the limited number of months to complete the program – a full time academic commitment required by Fast Track’s one term certificate programs restricted the hours left for employment. Most individuals in the target population needed to work at least part time and thus could not enroll. The original author of the proposal seems not to have recognized a mismatch between intensity of program and the population’s need for employment.
- There is high unemployment and low labor demand in the Mesa County region, discouraging the target population and others from investing in educational training programs during the grant period.

- Although Fast Track was located in the community college division of CMU, four year college tuition per credit is charged, currently \$327.<sup>52</sup> This is much higher than the tuitions charged at other Colorado community colleges, e.g. Aims \$76 in district per credit hour; Front Range Community College \$211.90 and Pueblo \$245.<sup>53</sup> Tuition and administrative costs were beyond the means and capacity of many potential students and WFC clients, the unemployed, the under employed, and veterans.
- Many veterans in Mesa County and the surrounding areas are homeless and/or suffer from a range of psychological and physical difficulties affecting their ability to successfully enroll in any academic or vocational programs, particularly accelerated programs of study such as Fast Track.<sup>54</sup> Prior to considering any educational training programs, many veterans need to find basic services that meet their primary needs - housing, food and medical and mental health care.
- Program staff stated that the majority of potential students who inquired about the programs did not have the requisite math and English skills to successfully navigate accelerated programs.<sup>55</sup>
- The original proposal miscalculated the potential pool from which to recruit the TAA eligible population. The Mesa County region has a limited number of TAA clients.
- CMU envisioned recruitment to take place beyond Mesa County including other parts of Colorado and Utah, the assumption being that individuals from other areas would relocate to enroll in a one semester program. In fact, recruitment related travel was included in the proposal. However, given the high cost of housing in the region, this option was not attractive and thus the program did not recruit much beyond the Grand Junction/Mesa County region.

### **Fast Track Program Model**

The strength of industry's initial interest in the creation of the Fast Track's intensive one semester model was not available to SMC. However, after Fast Track was launched, industry partners attending advisory committee meetings expressed reservations about some of the certificates. As discussed above, these industry concerns were echoed by a number of CTE faculty members. To what extent can a 16-18 credit certificate program adequately prepare individuals without any background for entry level work in a specific field? Anecdotal feedback from a number of Fast Track graduates<sup>56</sup> supported this concern - individuals with only a Fast Track certificate had great difficulty finding employment in their field of study.

From a teaching and learning perspective, the Fast Track model was very intense, requiring students to work full time to cover all required content. Such intensity appears to have worked

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<sup>52</sup> <http://www.coloradomesa.edu/student-accounts/documents/undergraduate-in-state-fall.pdf>

<sup>53</sup> See tuition pages for each college: <http://www.aims.edu/student/finaid/calc/calculatelt.php>; <https://www.frontrange.edu/paying-for-college/tuition-and-fees/current-tuition-rates>; <http://www.puebloc.edu/Tuition/>

<sup>54</sup> Program staff identified this challenge through their work with regional veteran services.

<sup>55</sup> Program staff communication in respect to interviews and Work Keys results.

<sup>56</sup> Unemployment Insurance files do not provide the field of work. However, a number of Fast Track graduates stayed in contact with program staff and reported their lack of success in finding employment in their fields of study.

well for some students. However, both students and faculty registered concerns about the enormity and complexity of the content: how quickly it could be absorbed; and how much of such rapid learning could be retained.

### **Admissions and Enrollment Issues**

Industry partners and faculty repeatedly stated that basic, if not intermediate proficiency, in math is needed to be successful in the manufacturing and process technology industries. In response, Fast Track program staff attempted to counsel out and/or refer individuals who did not have basic proficiencies in math, English and computers. However, given CMU's open admissions policy, individuals without these proficiencies could elect to register for Fast Track. This created difficulties for some students as well as faculty. Struggling with the work some of these students ended up formally withdrawing or just dropping out, costing them time, money, as well as some emotional distress.

CMU's grant target for Fast Track certificate graduates was 183. It is not clear how this number was established, nor if calculating it considered the availability of faculty and lab space to accommodate this number of potential Fast Track students. In fact, even with significantly smaller number of prospective Fast Track students – a number of prospective Fast Track students were closed out of required courses and placed on the waiting list, e.g., welding courses.

At the same time, in response to course demand, a number of faculty opened their registrations to accommodate additional students. This raised their registrations above the traditional 12-15 students. These faculty members stated that the larger registrations curtailed the 1:1 support they wished to give their Fast Track students.

### **Administrative Issues**

The TAA grant had many moving facets that required collaboration and coordination, e.g., marketing and recruitment, equipment purchasing, IT assistance to post OER materials, and accessing student related data. As with any grant some of this coordination worked smoothly and others were more difficult to accomplish. For example, accessing needed Unemployment Insurance (UI)<sup>57</sup> data files took more than a year, the college only receiving UI data files late spring 2016. This resulted in SMC's inability to annually track employment and wage data.

Professional training opportunities were extremely helpful to CTE faculty. At the same time, identifying and scheduling replacement faculty, and making travel arrangements on top of already stretched workloads was difficult for the two Fast Track department heads.

Despite the successful purchase under the TAACCCT grant of needed equipment and course supplies, senior faculty expressed concerns about delays between request and receipt. In part

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<sup>57</sup> After many different attempts CMU was able to get UI data files through the Colorado Department of Higher Education. After social security numbers had been stripped, the files were sent to a password protected encrypted SMC account.

this was a result of some incomplete purchase orders that had to be redone. It also reflected faculty's lack of experience with grant funded purchase procedures which differed from standard college funded purchases. In one case, the college was unable to negotiate a contractual agreement with a vendor. This resulted in a change of vendor, hence a five month delay between purchase request and the arrival of needed equipment. Lacking the needed equipment, the faculty member had to modify his curriculum in the middle of the semester. In a few instances an initial quote for equipment was outdated by the time the purchase request was authorized requiring a new purchase request order to be processed.

### **Employment and wages**

Over the grant period there was high unemployment and low labor demand in the Mesa County region. This economic landscape may have discouraged the target population and others to invest in educational training programs during the grant period.

Employment and wages depends on field, position, prior credentials and job openings. Unemployment Insurance data does not provide such critical information.

Anecdotal feedback from industry representatives indicated that employers generally seek individuals with higher skills levels than what can be gained in a one term of study, even at the entry level.

Industry representatives observed that a Fast Track certificate might increase the chance of an individual being hired, if all other job related attributes were equal to another job applicant. However, some industry partners did not think Fast Track certificates were a sufficient credential for employment.

### **INSTITUTIONAL CAPACITY BUILDING**

Despite the above challenges, the TAACCCT funded Fast Track pilot certificate programs resulted in significant expansion of CMU-WCCC's capacity to provide CTE training in the region.

#### **Curriculum Modifications**

Program curriculum and courses were reviewed, updated and revised to meet changing industry standards and needs. These changes were the direct result of input from industry partners on the advisory boards, faculty, and the subject matter experts paid with grant funds.

#### **Professional Development**

On-going professional development is critical to maintain the currency and capacity of academic programs to train the next generation. Faculty need to be familiar with the latest industry technology, and they need to be up to date re changing industry standards. Faculty also should hold current industry credentials to legitimize their preparation of students for industry exams. Over the past three years, the TAACCCT grant funds provided training

opportunities for six faculty members who participated in eleven training workshops. Faculty earned and/or upgraded their certifications in: CCNA, Siemens, NCCER and CISCO security. They also were trained to operate robotic and automated welding machines purchased under the TAACCCT grant.

## **Equipment**

“Getting new equipment changed the face of the program pushing the program towards the future” (CTE Faculty Member)

TAA funds were used to purchase virtual welders and a robotic welder for use by Fast Track and other welding students. (Note, given the amount of content Fast Track certificate students needed to learn, a decision was made to use the robotic welder only with advanced welding students).

A 3D printer, a new drafting table, a comparator, a hardness tester and material supplies were also purchased to support the training of welding and CAD/CAM students.

In addition, software was purchased for students in process technology and the computer technician programs.

Finally, Cameron Industry donated some equipment and supplies to the welding department when they eliminated their local office and operations, and Schmueser and Associates also donated welding supplies.

The above acquired equipment and supplies expanded WCCC’s classroom resources and greatly facilitated faculty training students in the college’s labs.

## **STUDENT OPPORTUNITY AND GROWTH**

CMU envisioned Fast Track certificates would provide an accelerated opportunity for underemployed and unemployed individuals to gain skills and secure employment, if not higher wages. Fast Track no doubt helped some individuals find employment in their field of study, and helped raise the wages of some certificate earners regardless of field of employment. However, the specific impact of earning a Fast Track certificate remains largely unknown given the small numbers in the Fast Track cohort; and the availability of employment sector data. Nevertheless, in conversations with program staff, faculty, and one student, it is clear that important secondary benefits accrued for Fast Track students.

Non-traditional students out of school for many years discovered that they could learn new and often complex material. Their sense of achievement successfully completing a demanding and intense certificate program gave them new confidence. For some graduates this new confidence stimulated them to enroll in an associate and bachelor degree program. The Fast Track certificate thus can act as important milestone – a sense that I can do it, I am getting someplace. It can, as one faculty member commented, “give them drive to go on.”

At the same time, graduates who chose not to go on and were seeking work indicated that Fast Track had provided them with a new professionalism which could help them find a job and perhaps even get promoted.

## **LESSONS LEARNED AND RECOMMENDATIONS**

The TAACCCT grant enabled CMU-WCCC to pilot a new model to address the needs of the unemployed and under employed. In a sense, a pilot can be an experiment to explore how well a concept or model works, for whom, when and where. A pilot can identify challenges and problems that need to be addressed, or provide evidence that a concept or model will not work as planned. In reflecting on the Fast Track program as a pilot, there have been some important lessons learned.

### **Industry Partnerships**

Sector partnerships (college, industry and WFC) result in multiple benefits<sup>58</sup>, including input re curriculum, input re changing industry standards and skills, the employment of graduates, the creation of internships, and the establishment of incumbent training programs.

To take advantage of these benefits CMU needs to formalize its CTE advisory committees; define board functions and membership (e.g., three year commitment); and establish a regular schedule of board meetings months before the actual dates, e.g., the first Monday of March and the first Monday of August. A part time administrator responsible for scheduling and coordinating advisory meetings, and following up meeting decisions would strengthen the capacity and effectiveness of the advisory committees.

In addition to the establishment of advisory committees, it would have been very helpful for CMU to have a designated individual responsible for fostering and cultivating relationships with regional employers, identify key partners, and recruit them to be members of standing committees and/or adjunct faculty.

Finally, in conjunction with the above activities, the college needs to engage industry partners in the development of mid and advanced level courses in respect to course content and assessments as well as the establishment of more discriminating admissions criteria.

### **Certificate Model**

A time limited program can provide individuals with an opportunity to explore a field of study and even get a foot in the door. It “gives them a chance to try new things,” and might be “a life changing event for them.” At the same time, for heavily skill based industry jobs – an accelerated introductory certificate program may not be sufficient even for entry level positions.

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<sup>58</sup> See the websites of the National Skills Coalition, <http://www.nationalskillscoalition.org/state-policy/sector-partnerships>; and American Association of Community Colleges: [http://www.aacc.nche.edu/AboutCC/Pages/college-industry\\_partnership.aspx](http://www.aacc.nche.edu/AboutCC/Pages/college-industry_partnership.aspx)

A certificate can act as an important milestone –a credit limited certificate can help students try out a field, see that they can be successful, and encourage the pursuit of additional credentials.

WCCC's 30 credits programs are attractive to individuals interested in a CTE field but who are not interested in spending time taking general education courses. At the same time, industry may not value a certificate in the same way as they do an associate or bachelor degree. The college thus needs to continue to advise students about their options and costs/potential benefits of enrolling in an associate degree program.

In developing programs for unemployed and underemployed individuals, as well as non-traditional students, it is critical to recognize their time constraints. Courses – hybrid or in-class - thus need to be available days, evenings and/or weekends; and students need options to pursue their education on either a part time or a full time basis dependent on their financial support and work/family responsibilities.

Incumbent workers often want short term training opportunities to enhance their skills, learn new industry technologies, and/or prepare for industry licensing exams. As discussed above, CMU now has enhanced its capacity in terms of faculty training and new equipment to offer state of the art mid and advanced level training to the region's incumbent workers. Any new offerings should be developed with industry input and be flexible to meet the schedules of workers, e.g., evenings, weekends.

One industry representative suggested that the college integrate business and communication skills into its two year degree welding program to give graduates greater flexibility in respect to employment, and/or starting their own business.

### **Course Content**

Industry partners need to be involved early on in the process of creating new programs and should review existing curriculum on a regular basis to insure that it meets changing industry technologies and standards.

Soft skills including critical thinking, problem solving, leadership, team work, and professional ethics are critical for industry success and for employee retention. Embedding and integrating soft skills throughout training works better than offering separate course or curriculum.

Language skills – oral and written comprehension, writing and reading skills – should be enhanced throughout CTE curriculum to prepare students to develop and read scopes of work, to prepare requests for information (RFI) from their clients, and to read a blueprint and related comments.

### **Admissions**

Courses which require specific levels of math and computer proficiency should be limited to those individuals who have the needed skills. This increases rates of retention and eases



faculty's teaching burden. CMU's new policy reflects this "lesson learned" by now requiring and encouraging students without college level proficiencies in math or English to enroll in developmental education courses.

### **Student Support**

The WCCC campus is at a considerable distance from CMU's main campus, and parking is difficult to find at the main campus. It therefore is important that student support services, e.g. financial aid, are made more accessible to students on the WCCC campus, especially during the registration period. Locating support services several times a week on the WCCC campus would facilitate student access to critical services affecting student satisfaction and retention.

As evident during the TAACCCT grant, a full time career specialist/academic adviser dedicated to working with CTE students around career planning and job searches can play an important role within CTE programs. The college has recognized the importance of this position and has now employed a full time career specialist/recruiter. In addition, to her other activities, the specialist's tracking student progress will be critical to improve student success and retention. A policy that requires three meetings a term (initial week, midpoint and end of term) with such a staff person would help to normalize the getting "help" and relieve faculty from being the first line advisers atop already heavy schedules.

### **Professional Development**

It will be important that the college continues to provide opportunities for faculty to expand their skills and knowledge. This is especially important given the college's decision to establish mid and advance level courses in a number of fields. WCCC and CMU need to identify on-going funding sources to cover the costs of training workshops and replacement faculty.

### **Administration**

Grant funded programs need to be integrated into the life of the college as much as is possible to facilitate later institutionalization. At the same time, given the grant timetables and targets for a grant, it is important that the college staff and faculty collaborate and coordinate to insure that grant deliverables are completed on a timely basis.

Time limited grant funds must be spent during the life of the grant. Any prolonged delay in the purchase process for equipment and supplies limits the use of these purchases in the grant funded programs. It is suggested that faculty working on grants be oriented early on to grant specific purchasing policies and procedures to facilitate timely delivery.

### **STUDY LIMITATIONS**

The above evaluation has sought to tell the story of the TAACCCT grant and CMU-WCCC's Fast Track pilot certificate programs. The evaluation, however, has been limited by the size of the population enrolled in Fast Track, and the absence of a natural comparative cohort. Further, the low response rate to the invitation to be interviewed by students and industry partners

limited SMC's ability to include their voices and perspectives, or to triangulate their responses with Unemployment Insurance files to employment patterns by sector and/or position, e.g., who was employed in the field of their certificate, who was promoted as result of skills gained during Fast Track, etc.

Going forward it is recommended that the Department of Labor make available more data fields so that researchers can truly track the trajectory of individuals who return to school to gain additional credentials.

**APPENDIX A: LOGIC MODEL**

IDENTIFIED NEEDS	PROJECT ACTIVITIES	CAPACITY BUILDING OUTPUTS	OUTCOMES	IMPACT
<p><b>INDUSTRY</b></p> <ul style="list-style-type: none"> <li>Industry needs a skilled and knowledgeable workforce</li> </ul> <p><b>WORKFORCE</b></p> <ul style="list-style-type: none"> <li>TAA-eligible, unemployed and under employed need training to upgrade and/or develop new skills</li> <li>Incumbent workers need opportunities to upgrade their skills and knowledge</li> <li>Non-traditional students need opportunities to explore and learn new skill sets</li> </ul> <p><b>STUDENTS</b></p> <ul style="list-style-type: none"> <li>Need assistance with career choices, employment searches, and academics</li> </ul> <p><b>CMU-WCCC</b></p> <ul style="list-style-type: none"> <li>Faculty need to upgrade their skills and knowledge to keep pace with industry changes</li> <li>College needs to upgrade and expand its lab equipment</li> </ul> <p><b>CMU –WCC AND COMMUNITY PARTNERSHIPS</b></p> <ul style="list-style-type: none"> <li>College needs to strengthen its relationship with regional industries</li> <li>CMU-WCCC needs to strengthen its relationship with Mesa County Workforce Center</li> </ul>	<p><b>CURRICULUM</b></p> <ul style="list-style-type: none"> <li>Develop and implement six Fast Track certificates</li> <li>Use subject matter experts to review and inform curriculum modifications</li> <li>Establish advisory committees and engage industry partners to inform program curriculum program and facilitate the employment of graduates</li> </ul> <p><b>PROGRAM OPERATIONS</b></p> <ul style="list-style-type: none"> <li>Recruit students via website, PSAs and marketing through community organizations including WFC</li> <li>Employ career specialist/academic adviser</li> <li>Establish regular contact with WFC</li> <li>Engage community organizations, e.g., veteran to market materials</li> </ul> <p><b>PROFESSIONAL DEVELOPMENT</b></p> <ul style="list-style-type: none"> <li>Faculty participate in professional development workshops to upgrade knowledge/skills and earn industry certifications</li> </ul>	<p><b>STUDENT PARTICIPANT OUTPUTS</b></p> <ul style="list-style-type: none"> <li>Enrollment</li> <li>Persistence</li> <li>Credentials</li> <li>Employment</li> <li>Wages</li> </ul> <p><b>INSTITUTIONAL CAPACITY BUILDING</b></p> <ul style="list-style-type: none"> <li>Creation of accelerated entry level certificate</li> <li>Increase integration of soft skill training in all curriculum</li> <li>Modified 16-18 credit certificates into one or two term programs of study</li> <li>Development of new mid and advance level certificate programs</li> <li>Increased opportunities for stacking credentials</li> <li>CTE faculty engaged in professional development trainings, and earning additional industry credentials</li> <li>Purchased of new equipment and software</li> <li>Develop and enhance partnership with WFC and community services organizations</li> <li>Enhanced evaluation</li> </ul>	<p><b>STUDENT OUTCOMES</b></p> <ul style="list-style-type: none"> <li>40 Students earned a Fast Track certificate</li> <li>251 unique students pursuing certificates, and associate and bachelor degrees were affected by the grant</li> <li>Five Fast Track graduates went on to complete three additional certificates and two associate degrees</li> <li>Incumbent Fast Track graduates increased their average quarterly wages</li> </ul> <p><b>FACULTY OUTCOMES</b></p> <ul style="list-style-type: none"> <li>6 Faculty attended 11 professional development trainings</li> </ul>	<p><b>INDUSTRY AND WORKFORCE</b></p> <ul style="list-style-type: none"> <li>Expanded skills of regional labor force</li> <li>Improved employment and wages of college certificate and degree graduates</li> </ul> <p><b>COLLEGE CAPACITY</b></p> <ul style="list-style-type: none"> <li>Expanded CMU-WCCC capacity to provide state of the art CTE training</li> <li>Enhanced partnership between CMU-WCCC, industry, WFC and community organizations</li> <li>Post grant employment of a full time career specialist</li> </ul>

**APPENDIX B:  
MATRIX OF COURSE OVERLAPS OF FAST TRACK CERTIFICATES**

			CAD/CAM		BASIC WELDING		CONTROL SYSTEMS		ELECTRONIC TECH		COMPUTER TECH		CERTIFIED NETWORK TECH
CADT 108	CAD-Mechanical		X										
CADT 109	CAD-Mechanical Adv.		X										
MAMT 105	Print Reading/Sketching		X		X								
MAMT 106	Geometric Tolerancing		X										
MAMT 148	CNC Applications		X										
MAMT 151	Numeric Control Machining 1		X										
MAMT 155	Numeric Control Machining 2		X										
MAMT 160	Properties of Materials				X								
WELD 110	Shielded Metal Arc Welding				X								
WELD 117	Oxy/Fuel & Plasma Cutting				X								
WELD 211	GMAW-FCAW				X								
WELD 240	Pipe Welding				X								
PROS 100	Intro. To Process Technology						X						
PROS 110	Safety, Health & Environment						X						
PROS 117	Electronics 1 (DC Circuits)						X		X				
PROS 120	Process Technology 1: Equipment						X						
PROS 130	Instrumentation						X		X				
PROS 118	Electronics 2 (DC Circuits 2)								X				
MATH 108	Technical Mathematics								X				
TECI 132	Intro to IT Hardware and System Software								X				

			CAD/CAM		BASIC WELDING		CONTROL SYSTEMS		ELECTRONIC TECH		COMPUTER TECH		CERTIFIED NETWORK TECH
TECI 132	Intro to IT Hardware and System Software										X		X
TECI 180	Cisco Networking 1										X		X
TECI 251	Personal and Professional Leadership Development										X		X
TECI 260	IT Hardware & System Software										X		
TECI 265	Advanced IT Hardware & System Software										X		
TECI 290	Certification: A+										X		X
TECI 185	Cisco Networking 2												X
TECI 230	Cisco Networking 3												X