GREATER MEMPHIS ALLIANCE FOR A COMPETITIVE WORKFORCE TAACCCT ROUND 4 GRANT:

Preliminary Impact Evaluation Report

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September 2016

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INTRODUCTION

OVERVIEW

The Greater Memphis Alliance for a Competitive Workforce (GMACW), led by Arkansas State University Mid-South, was awarded $9,814,818 in the fourth round of the Trade Adjustment Assistance Community College Career Training (TAACCCT) grants on October 1, 2014. The GMACW TAACCCT grant represents a consortium of four colleges including Arkansas State University Mid-South (ASU Mid-South) as the lead college, Southwest Tennessee Community College (Southwest), William R. Moore College of Technology (Moore Tech), and Tennessee College of Applied Technology (TCAT). The GMACW TAACCCT grant is focused on creating or enhancing programs for the manufacturing, transportation, distribution and logistics industries in the Memphis area. The grant-supported programs of study at each college are listed in Table 1. Although the grant began in October 2014, the first few months of the grant were dedicated to setting up systems and contracts to implement the grant. Grant-funded programs of study began to be implemented in January 2015. Programs at the four consortium colleges varied in their launch dates (see Appendix A).

Table 1. Grant-funded programs of study

Manufacturing	
Machining	ASU Mid-South/Moore Tech/TCAT/Southwest (non-credit)
Welding	ASU Mid-South/Moore Tech/TCAT/Southwest (non-credit)
Process Control	ASU Mid-South
Mechatronics	ASU Mid-South
Transportation/Distribution/Logistics	
Diesel	ASU Mid-South/TCAT
Aircraft Maintenance	ASU Mid-South/TCAT
Truck Driving	TCAT

The consortium hired Corporation for a Skilled Workforce (CSW) and the Ray Marshall Center (RMC) of The University of Texas at Austin as the third party evaluation team for this TAACCCT-funded effort. CSW and RMC are providing comprehensive evaluation services in support of GMACW's TAACCCT grant program (Corporation for a Skilled Workforce 2015). These services include collecting, analyzing, and interpreting data that meet USDOL reporting requirements, inform continuous program improvements and determine the extent to which the various interventions are associated with positive outcomes and impacts. The evaluation consists of two components: (1) an implementation (formative) evaluation, conducted by CSW; and (2) an impact (summative) evaluation, conducted by RMC.

EVALUATION DESIGN

The impact evaluation conducted by the Ray Marshall Center includes three components: a descriptive analysis, outcomes analysis, and an impact analysis. Research questions guiding the impact evaluation include:

- Do participants persist in the program at higher rates than similar non-participants, measured in terms of continued enrollment rates and credit hours completed?

- Do participants complete the program at higher rates than similar non-participants, measured in terms of certificates and degrees attained?

- How do participants' employment rates compare to the employment rates of similar non-participants, measured at program completion and up to four quarters post-completion?

- How do participants' quarterly earnings compare to similar non-participants' earnings post-program completion, measured up to four quarters post completion?

- Do participants experience greater employment stability compared to similar non-participants, as measured by monetary eligibility for Unemployment Insurance (UI) benefits?

Outcomes analysis

GMACW is expected to lead to a number of significant and measurable outcomes. The Ray Marshall Center is documenting and analyzing the outcomes by assembling data on education and employment outcomes over the evaluation period. In alignment with program outcomes reported to DOL, the Ray Marshall Center is monitoring, examining and will report the following outcomes:

- Number of GMACW TAACCCT program participants served

- Number of GMACW TAACCCT program participants completing program of study

- Number of GMACW TAACCCT program participants retained in program of study

- Number of GMACW TAACCCT program participants completing credit hours

- Number of GMACW TAACCCT program participants earning credentials

- Number of GMACW TAACCCT program participants enrolled in further education

- Number of GMACW TAACCCT program participants employed after program completion

- Number of GMACW TAACCCT program participants retained in employment after completion

- Number of GMACW TAACCCT program participants who received wage increase post-enrollment

Impact analysis

The impact analysis is designed to address the question: what impact did GMACW's TAACCCT program have on student education and employment outcomes? The main goal of the impact analysis is attribution – isolating the effect of GMACW's TAACCCT program from other factors and potential selection bias.

The main challenge of any impact analysis is to determine what would have happened to program participants if the program had not existed (i.e. the counterfactual). While a program's impact can truly be assessed only by comparing the actual and counterfactual outcomes, the counterfactual is not observed. Without information on the

counterfactual, the next best alternative is to compare outcomes of program participants with those of a comparison group of non-participants. Successful impact analyses hinge on finding a good comparison group (Khandker, Koolwal et al. 2010).

The Ray Marshall Center is using a quasi-experimental evaluation methodology to estimate the impacts of the GMACW TAACCCT program on key education and employment outcomes. A quasi-experimental design is appropriate since the program does not easily lend itself to a random assignment evaluation. GMACW consortium colleges are open-access community colleges with limited resources to serve students in targeted programs; randomly assigning these students to different systems of programs and services is resource intensive and would jeopardize the successful implementation of the programs. Recent research has demonstrated that, when carried out under the right conditions, quasi-experimental estimation produces impact estimates that are similar in direction and magnitude to those resulting from more expensive and intrusive experimental (random assignment) evaluation methods (Greenberg, Michalopoulos et al. 2006).

DATA SOURCES

Salesforce database

The Ray Marshall Center is obtaining participant demographic and background characteristics collected through intake forms. Intake forms are administered to all TAACCCT grant participants and collect a wealth of information (see Appendix B). Data from the intake forms is entered into a common Salesforce database. Additionally, course enrollment, course outcomes, credential attainment and employment outcomes for all participants are tracked and entered into the same common Salesforce database.

Institutional research data systems

The Ray Marshall Center is obtaining individual-level academic progress and educational outcomes from the institutional research data systems at the individual colleges in the Consortium. These databases include information on student demographics,

enrollment status, course performance, credit attainment, and program completion. The Ray Marshall Center is obtaining this data for non-participants in the comparison pool.[1]

Unemployment Insurance (UI) records

The Ray Marshall Center also plans to obtain matched individual-level employment outcome data from the Unemployment Insurance (UI) quarterly earnings records, available through each state's employment data system. These records provide individual-level data on earnings, employers of record, and new-hire dates. These data will help the evaluation team track job placement, job retention, and earnings gains. The Ray Marshall Center will attempt to obtain data for GMACW TAACCCT program participants, as well as non-participants in the comparison pool.

DATA COLLECTION

The Ray Marshall Center worked with the consortium to develop tools and protocols for collecting, matching, and aggregating the data described above. At the beginning of this grant, the Ray Marshall Center entered into data sharing agreements with the four colleges in the consortium in order to access data from their institutional research data systems. The evaluation team is currently working with the consortium to set up data sharing agreements with state workforce agencies in order to access UI data.

Over the summer of 2015, The Ray Marshall Center reviewed the data elements available in the institutional data systems and the state wage data systems to identify the specific list of variables needed for the evaluation (see Appendix B). During the baseline site visits conducted in September 2015, the evaluation team met with institutional research staff to assess each college's capacity to meet the data needs of the evaluation (Corporation for a Skilled Workforce 2015). The evaluation team determined that overall, the consortium appeared well positioned to meet the data needs of the evaluation. The Salesforce database was effective in collecting detailed information on all grant program participants, including demographics, enrollment, course progress, education outcomes, and

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[1] Similar data for program participants can be accessed from the Salesforce database by the evaluation team.

employment outcomes. Data availability for the comparison group, needed for the impact analysis of grant funded programs, varied across the colleges but was overall satisfactory. Following the Fall 2015 site visits, the Ray Marshall Center finalized the impact evaluation plan (Ray Marshall Center 2016).

The Ray Marshall Center began collection of Salesforce data in Spring 2016. Following a series of test data transfers, the evaluation team worked with the GMACW team to ensure that the Salesforce dataset had all the information necessary for the evaluation. The Ray Marshall Center received complete Salesforce dataset on June 30, 2016. This dataset covers the time period from the start of program implementation in late 2014 through June 30, 2016, and includes a total of 835 participants.

The Ray Marshall Center began collection of institutional research data in May 2016, beginning with a test data transfer in June 2016. The evaluation team then followed up with each individual college to address concerns and find solutions to data collection challenges. The Ray Marshall Center received complete institutional research datasets from two of the four colleges in August 2016.

REPORT ORGANIZATION

This report summarizes early findings from the impact evaluation. Findings are based on analyses of the Salesforce dataset provided to the evaluation team on June 30, 2016; this dataset covers the time period from the start of program implementation in late 2014 through June 30, 2016, and includes a total of 835 participants. The next chapter of the report describes the population served by the GMACW TAACCCT program and examines participation patterns. This is followed by a chapter describing early outcomes of GMACW TAACCCT program participants. The report concludes with a chapter summarizing key preliminary findings and outlining next steps for the evaluation.

PARTICIPANT CHARACTERISTICS

This chapter of the report describes the population served by the GMACW TAACCCT program and examines participation patterns. The Salesforce dataset reports that a total of 835 participants were served by the grant, as of June 30, 2016. Thus, the grant was well on its way to meeting its target of serving 900 participants by the end of Year 2.

ENROLLMENT

TCAT-Memphis served the highest number of participants, while Southwest served the lowest number of participants (see Figure 1). Overall, nearly half of all GMACW TAACCT participants were enrolled at TCAT-Memphis, a little over a quarter were enrolled at Moore Tech and a little less than a quarter were enrolled at ASU-Mid South. Only 6% of the GMACW TAACCT participants were enrolled at Southwest.

Figure 1. Enrollment by college
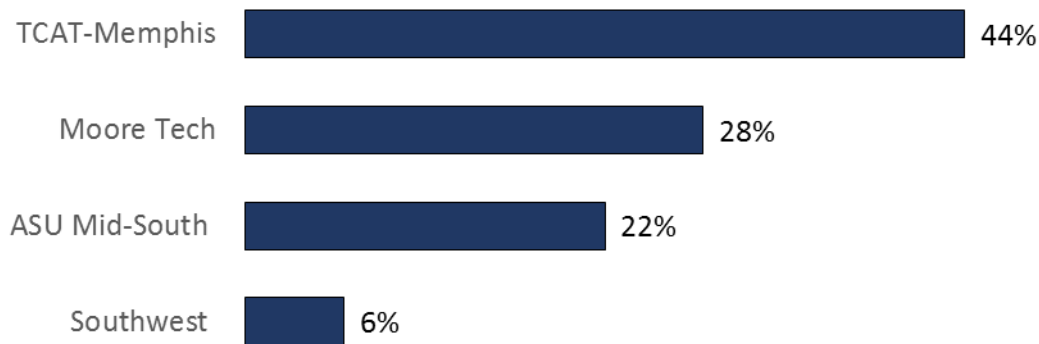
Note: Total N is 835

Figure 2 examines enrollment over time. The first participants in the GMACW TAACCCT program enrolled in January 2015. As expected, there were peaks in enrollment at the beginning of the semesters and trimesters at each college.

DEMOGRAPHICS

Table 2 lists the demographic characteristics of GMACW TAACCCT participants, reported through the intake forms. GMACW TAACCCT participants were mostly male (88%).

Half of all participants were black (49%), nearly half were white (41%), and a small proportion (3%) were Asian. Only a small proportion (4%) of participants were Hispanic. This demographic distribution among GMACW TAACCCT participants closely aligns with the demographics of the Memphis Metropolitan Statistical Area: 46% black, 48% white, 2% Asian and 5% Hispanic (U.S. Census Bureau 2010). A tenth of all participants were veterans. Nearly half of all participants were Pell-Grant eligible (42%). Two-thirds of all participants were employed at the time of intake.

Figure 2. Enrollment over time
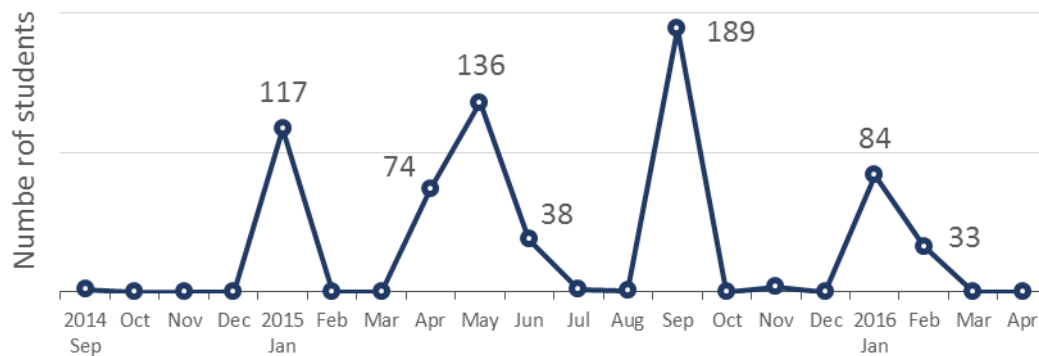
Note: Total N is 835

Table 2. Demographic characteristics of participants

Characteristic	%	Characteristic	%
Male	88%	Veteran	10%
Black	49%	TAA eligible	4%
White	41%	Dislocated worker	1%
Asian	3%	Pell Grant eligible	42%
Hispanic	4%	Employed	65%
U.S. Citizen	97%	*Total N is 835*	

PRIOR EDUCATION

Participants were asked to report the highest education level they had completed, at the time of intake (see Figure 3). Nearly two-thirds of GMACW TAACCCT participants were only high school graduates or equivalent (60%), while about a fifth had one to two years of college, technical or vocation school with a diploma or certificate awarded (21%).

Figure 3. Highest education level completed by participants at intake
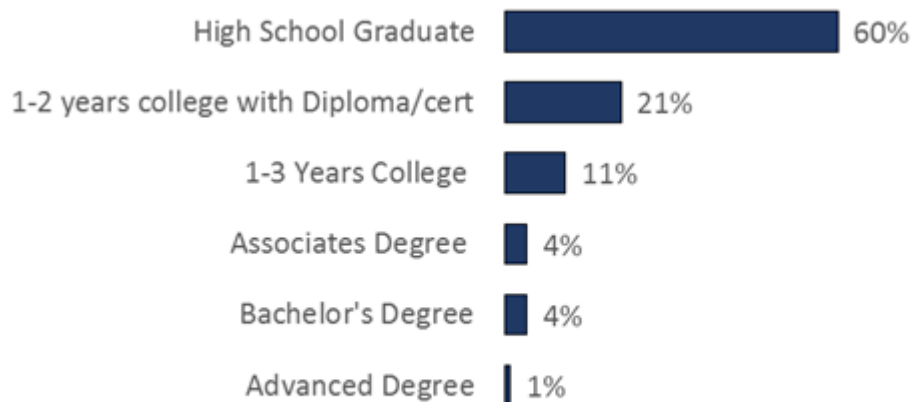
Note: Total N is 835

CURRENT ENROLLMENT STATUS

Participants were asked to report their current enrollment status at the time of intake. Two-thirds of GMACW TAACCCT participants reported that they were currently enrolled in full-time credit programs, and a little over a quarter reported that they were currently enrolled in part-time credit programs (see Figure 4). A tiny fraction reported that they were either enrolled in non-credit programs (3%), or they were not yet enrolled at intake (2%); these participants all entered GMACW TAACCCT programs at Southwest.

Figure 4. Current enrollment status at intake

FULL-TIME CREDIT | PART-TIME CREDIT | NON-CREDIT | MISSING | NOT ENROLLED

Total N is 835

Figure 5 examines current enrollment status by college. Nearly all of the GMACW TAACCCT participants at TCAT-Memphis were currently enrolled in a full-time credit program at the time of intake. In contrast, only about half of GMACW TAACCCT participants at ASU-Mid South and Moore Tech were enrolled in a full-time credit program at the time of intake; the other half were enrolled in a part-time credit program. At Southwest, only about a tenth were enrolled in a full-time credit program, while a third were enrolled in a non-credit program. Southwest was the only college where participants reported that they were not enrolled in any program at the time of intake.

Figure 5. Current enrollment status at intake, by college

FULL-TIME CREDIT | PART-TIME CREDIT | NON-CREDIT | MISSING | NOT ENROLLED

TCAT-Memphis: 92%
Moore Tech: 46% | 51%
ASU Mid-South: 49% | 48%
Southwest: 11% | 34% | 19% | 36%
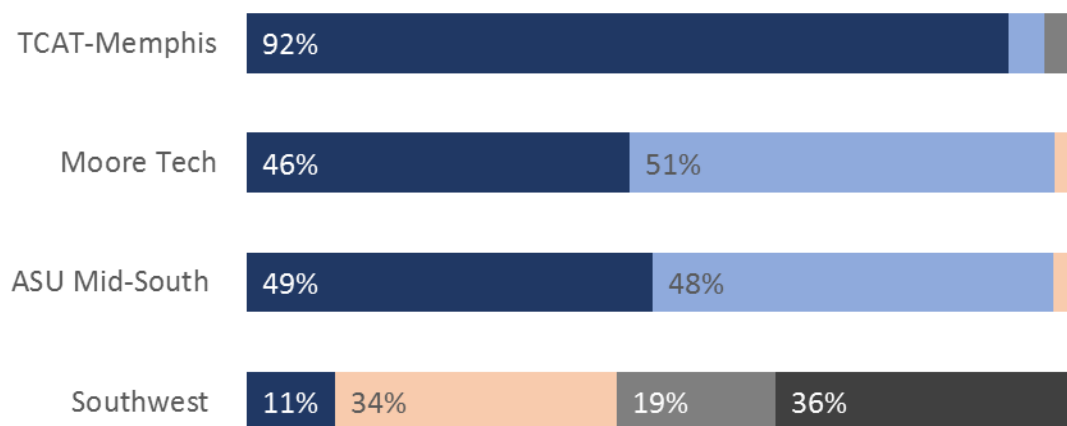
Total N is 835
Subgroup Ns: TCAT-Memphis = 368 | Moore Tech = 234 | ASU-Midsouth = 186 | Southwest = 47

CURRENT PROGRAM OF STUDY

Participants were also asked to report their current program of study at the time of intake. Figure 6 examines the current program of study reported for the 793 participants who were already enrolled in full-time, part-time or non-credit programs, at the time of intake. The GMACW TAACCCT program appeared to draw heavily from students whose current programs of study were *Aircraft Technology* or *Aircraft Mechanics*, *Welding*, and *Machine technology*.

Figure 6. Current program of study at intake

Program	Percentage
Aviation technology	30%
Welding	25%
Machine technology	20%
Diesel technology	11%
Truck driving	7%
Process technology	2%
Mechatronics	1%
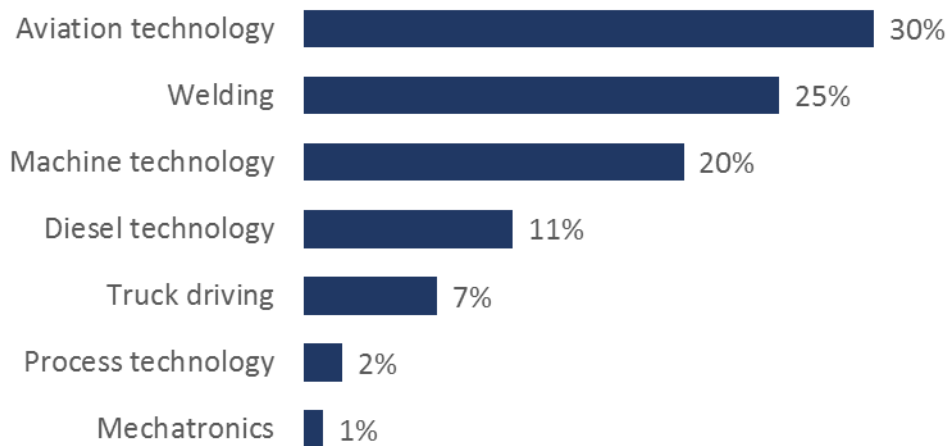
Total N of already enrolled participants is 793

Table 3 examines the current program of study at intake, broken down by college. TCAT-Memphis enrolled well over half of its GMACW TAACCCT participants from the *Aircraft Mechanics* program. Moore Tech enrolled participants equally from the *Machine Technology* and W*elding* programs. ASU-Mid South enrolled about a third of its participants from the *Welding* program, and about a quarter from the *Process Technology* program.

Table 3. Current program of study at intake, by college[2]

LOW - **HIGH**

	TCAT-Memphis n=354	Moore Tech n=234	ASU Mid-South n=184
Aviation technology	59%		17%
Welding	5%	53%	33%
Machine technology	8%	47%	11%
Diesel technology	11%		24%
Truck driving	16%		
Process technology			7%
Mechatronics			6%

[2] Southwest is not included in this table, as no current program of study was recorded for participants at Southwest.

EARLY PROGRAM OUTCOMES

This chapter of the report examines the early outcomes of GMACW TAACCCT participants. Outcomes examined include program completion; education outcomes such as credit hour accumulation and credential attainment; and employment outcomes such as placement, retention and wage increase. Outcomes are reported for all GMACW TAACCCT participants, and variations in outcomes by institution and program are also examined. Table 4 summarizes the outcomes that the grant aims to achieve by the end of the grant period, as noted in their proposal to the U.S. Department of Labor. Appendix B provides a breakdown of these outcomes by year, and by institution.

Table 4. Target GMACW TAACCCT grant outcomes

Outcome measures	N	% of Participants
Participants served	1500	100%
Completing a funded program of study	1050	70%
Participants completing credit hours	1350	90%
Retained in program of study	600	40%
Participants earning credentials	1200	80%
Enrolled in further education	400	27%
Participants employed after study completion	700	47%
Retained in employment	600	40%
Participants who received a wage increase	280	19%

Findings presented in this chapter are based on the Salesforce dataset provided to the evaluation team on June 30, 2016. This dataset covers the time period from the start of program implementation in late 2014 through June 30, 2016, and includes a total of 835 participants. Program completion status was missing for over two thirds of the 835 GMACW participants - it is likely that these participants are still continuing in the program and hence their completion status has not yet been recorded. The remainder of this chapter focuses

on the 262 participants with program completion status recorded in the database; these participants are assumed to have exited the GMACW TAACCCT program.

The program implementation team has noted lags in data entry as well as gaps in data entry that vary by college. The grant has recently focused on strengthening data entry efforts, concentrating on accurately recording credential attainment as well as recording completion status for participants who have exited the program. Thus, findings presented in this chapter should be interpreted with care. The evaluation team expects to have more complete data when it reexamines outcomes in the upcoming interim evaluation report.

PROGRAM COMPLETION

Of the 262 participants who exited the program, two-thirds completed their coursework and obtained a certificate or degree (62%), very close to the target goal of 70% of participants completing the program. Less than a third completed some coursework but did not obtain a certificate or degree (27%), while a tenth did not complete their coursework (11%).

Figure 7. Program completion status

COMPLETED COURSEWORK; OBTAINED CERTIFICATE/DEGREE
COMPLETED SOME COURSEWORK; NO CERTIFICATE/DEGREE OBTAINED
DID NOT COMPLETE COURSEWORK

| 62% | 27% | 11% |

Total N of program exiters is 262

Figure 8 examines program completion by college. TCAT-Memphis appeared to have the strongest completion outcomes: nearly three-quarters of participants who exited the program at TCAT-Memphis completed their coursework and received a certificate or degree. In comparison, half of GMACW participants who exited the program at Moore Tech, and just over a third of GMACW participants who exited the program at ASU-Mid South completed their coursework and obtained a certificate or degree.

Note that compared to TCAT, both ASU-Mid South and Moore Tech appear to have higher proportions of students who exited the program and completed some coursework but did not receive a certificate or degree. This may be attributed to TCAT's system of competency-based, self-paced learning, with clear entry/exit points tied to shorter-term certificates that stack to form a diploma; students reaching each point achieve a certificate, thus attaining a credential should they leave the program early.[3]

Figure 8. Program completion status by college

COMPLETED COURSEWORK; OBTAINED CERTIFICATE/DEGREE
COMPLETED SOME COURSEWORK; NO CERTIFICATE/DEGREE OBTAINED
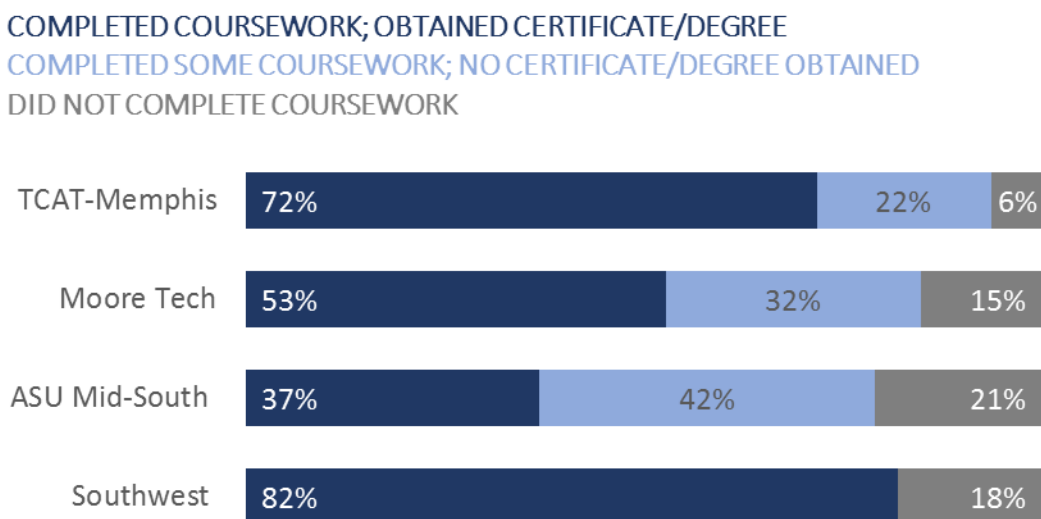**DID NOT COMPLETE COURSEWORK**

College	Completed; Obtained	Some; No cert	Did not complete
TCAT-Memphis	72%	22%	6%
Moore Tech	53%	32%	15%
ASU Mid-South	37%	42%	21%
Southwest	82%		18%

Total Ns for program exiters: TCAT- Memphis = 141 | Moore Tech = 72 | ASU-Midsouth = 38 | Southwest = 11

Figure 9 examines program completion by program of study. Nearly all of the GMACW TAACCCT participants who exited the *Truck Driving* program completed their coursework and earned a certificate or degree (94%). Nearly two-thirds of GMACW TAACCCT participants who exited the *Welding* and *Aviation Technology* programs completed their coursework and earned a certificate or degree (61%). In contrast, a little

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[3] The evaluation team's baseline site visit report noted that the four schools were at varying levels of ability to provide documentation of learning prior to program completion; this was a concern since a frequently noted challenge by college staff and faculty was that students often "step out" of their educational program for an employment opportunity, and then do not complete their program or credential.

less than half of GMACW TAACCCT participants who exited the *Machine Technology* and *Diesel Technology* programs completed their coursework and earned a certificate or degree.

Figure 9 Program completion status by program of study[4]

COMPLETED COURSEWORK; OBTAINED CERTIFICATE/DEGREE
COMPLETED SOME COURSEWORK; NO CERTIFICATE/DEGREE OBTAINED
DID NOT COMPLETE COURSEWORK

Program	Completed coursework; obtained certificate/degree	Completed some coursework; no certificate/degree obtained	Did not complete coursework
Truck driving	94%		
Aviation technology	61%	30%	9%
Welding	61%	32%	7%
Machine technology	48%	35%	17%
Diesel technology	42%	37%	21%

Total Ns for program exiters: Truck driving = 31 | Aviation technology = 80 | Welding = 69 | Machine technology = 46 | Diesel technology = 19

CREDIT HOUR ACCUMULATION

Table 5 examines the average number of credits earned per semester. Overall, GMACW TAACCCT participants who exited the program earned an average of 10 credits per semester or trimester. TCAT-Memphis had the highest credit hour accumulation rate: participants who exited the program at TCAT-Memphis earned an average of 13 credits per trimester. In contrast, participants who exited the program at ASU-Mid South and Moore Tech earned an average of 6 to 7 credits per semester or trimester

The *Aviation Technology* program had the highest credit hour accumulation rate: participants who exited this program earned an average of 13 credits per semester or trimester. In contrast, GMACW TAACCCT participants who exited the *Mechatronics*, *Truck*

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[4] Program completion is reported only for the 245 participants with a clearly identified program of study.

Driving, Diesel Technology and *Machine Technology* programs earned an average of 8 to 9 credits per semester or trimester. Participants who exited the *Welding* and *Process Technology* programs had the lowest credit hour accumulation and earned an average of 5 credits to 6 credits per semester or trimester.

Table 5. Average number of credits earned

LOW - **HIGH**

|	Average credits earned per semester or trimester
Overall, n=684	9.6
By college	
TCAT-Memphis, n=321	13.1
Moore Tech, n=192	6.3
ASU Mid-South , n=169	7
By program of study	
Aviation technology/aircraft mechanics, n=227	13.4
Welding, n=170	6.2
Machine technology, n=138	9
Diesel technology, n=79	9
Mechatronics, n=11	8.4
Truck driving, n=45	7.5
Process technology, n=5	5.4

CREDENTIAL ATTAINMENT

Figure 10 examines overall credential attainment for the 262 GMACW TAACCCT participants who exited the program. Overall, nearly two-thirds earned a credential of some type (62%); this is much lower than the target goal of 80% of participants earning a credential. Nearly a third earned a diploma (29%), while about a quarter earned a certificate

(23%). Small fractions (<5%) earned a non-credit credential, a certificate of proficiency or an AAS.

Figure 10. Overall credential attainment

YES | NO
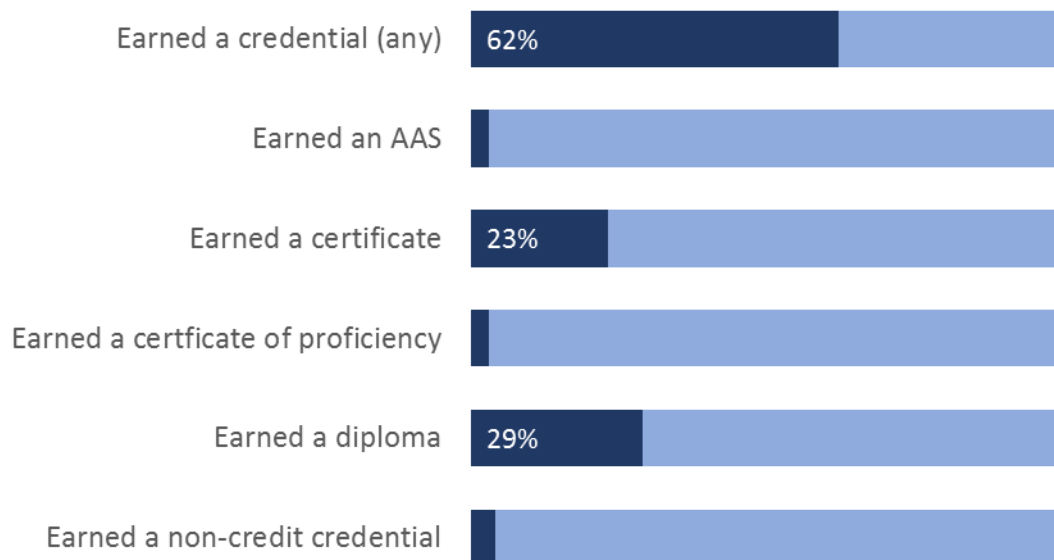
Total N of program exiters is 262

Table 6 examines credential attainment, broken down by college. Southwest had the highest credential attainment rate at 91%; however, these were participants who exited the "Aha! Getting Ahead" workshop and only earned a non-credit credential. Among the three colleges offering for-credit programs, TCAT-Memphis had the highest credential attainment: nearly three-quarters of participants who exited the program at TCAT-Memphis earned a credential of some type (71%); nearly half earned a diploma (48%); and, nearly a quarter earned a certificate (23%). Moore Tech had strong credential attainment as well: more than half of participants who exited the program at Moore Tech earned a credential of some type (54%); more than a third earned a certificate (38%); and, more than a tenth earned a diploma (13%). ASU-Mid South appeared to have the weakest credential attainment outcomes, with only about a third of participants who exited the program earning a credential of some type (34%).

Table 6. Credential attainment, by college

	Credential (any)	AAS	Certificate	Certificate of proficiency	Diploma	Non-credit credential	Industry recognized credential
TCAT-Memphis, n=141	71%		23%		48%		1%
Moore Tech, n=72	54%	4%	38%		13%		0%
ASU Mid-South , n=38	34%	11%		24%			16%
Southwest , n=11	91%					91%	36%

Table 7 examines credential attainment, broken down by program of study. The *Truck Driving* program had the strongest credential attainment: nearly all participants in the program earned a certificate (94%). The *Truck Driving* program is offered as a GMACW TAACCCT program only in TCAT-Memphis, likely explaining the strong credential attainment for TCAT-Memphis described above.

Table 7. Credential attainment, by program of study

	Credential (any)	AAS	Certificate	Certificate of proficiency	Diploma
Aviation technology, n=80	63%				63%
Welding, n=69	59%	3%	33%	13%	10%
Machine technology, n=46	46%	9%	13%		24%
Diesel technology, n=19	42%		5%		37%
Truck driving, n=31	94%		94%		

The *Aviation Technology* program had strong credential attainment as well: nearly two-thirds of participants who exited this program earned a diploma (63%). The *Welding* program also had strong credential attainment: nearly two-thirds of participants who exited this program earned a credential of some type (59%); a third earned a certificate (33%); a little over a tenth earned a certificate of proficiency (13%) and, a tenth earned a diploma

(10%). The *Machine Technology* and *Diesel Technology* had more moderate credential attainment, with less than half of participants who exited these programs earning any credential.

Industry recognized credential attainment

In addition to academic for-credit and non-credit credentials, participants also had the opportunity to earn industry recognized credentials. Overall, just 4% of participants who exited the program, earned an industry recognized credential. A close examination reveals that over a third of participants who exited the program at Southwest earned an industry recognized credential (36%), while 16% of participants who exited the program at ASU Mid-South earned an industry recognized credential.
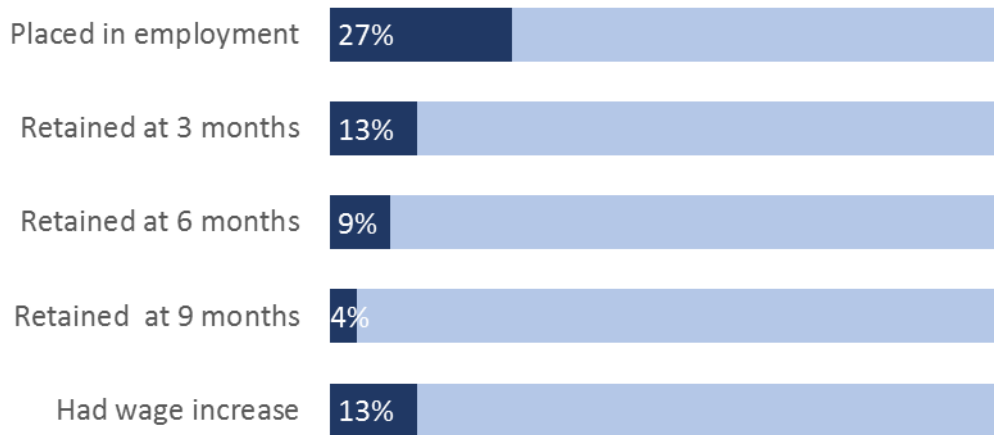
EMPLOYMENT OUTCOMES

Figure 11 examines overall employment outcomes[5] for the 262 GMACW TAACCCT participants who exited the program. Note that employment outcomes are self-reported: employment outcomes are tracked by grant-funded Job Retention Coaches who follow-up with students individually at regular intervals. Attempts to follow-up with students have not always been uniformly successful, and Job Retention Coaches have had challenges gathering employment data directly from students.

Overall, just over a quarter of all participants who exited the program were placed in employment (27%); a little over a tenth were retained in employment after 3 months (13%) and after 6 months (9%); only 4% were retained in employment after 9 months; and, a little over a tenth experienced a wage increase (13%). These employment outcomes are much lower than the target goals of 47% of participants being placed in employment, and 40% of participants being retained in employment.

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[5] In this preliminary report, the evaluation team chose to examine employment outcomes for all participants who exited the program. In future reports, as the number of participants exiting the program grows, the evaluation team will distinguish between incumbent and non-incumbent workers when examining employment outcomes.

Figure 11. Employment outcomes

Placed in employment	27%
Retained at 3 months	13%
Retained at 6 months	9%
Retained at 9 months	4%
Had wage increase	13%

Total N of program exiters is 262

Table 8 examines employment outcomes, broken down by college. TCAT-Memphis, appeared to have the strongest employment placement outcomes, followed closely by ASU-Mid South and Moore Tech. Over a quarter of participants at TCAT-Memphis who exited the program were placed in employment (27%), while about a fifth of participants who exited the program at Moore Tech and ASU-Mid South were placed in employment (21%). TCAT's strong Co-op program may have contributed to the strong employment outcomes. Southwest had the lowest number of participants exiting the program, and appeared to have the weakest employment outcomes: only about a tenth of participants at Southwest who exited the program were placed in employment (9%), with retention rates at 0%.

Moore Tech appeared to have the strongest employment retention outcomes: a fifth of participants at Moore Tech who exited the program were retained in employment three months after program exit (19%). In comparison, only a tenth of participants at TCAT-Memphis and ASU-Mid South who exited the program were retained in employment three months after program exit. However, the six-month retention rates across these three colleges were very similar, ranging from 8% to 10%. TCAT-Memphis had the strongest 9-month retention rate at 6%, followed by Moore Tech at 3%.

Table 8. Employment outcomes, by college

	Placed in employment	Retained in employment at 3 months	Retained in employment at 6 months	Retained in employment at 9 months	Had wage increase
TCAT-Memphis, n=141	27%	9%	9%	6%	11%
Moore Tech, n=72	21%	19%	10%	3%	15%
ASU Mid-South , n=38	21%	11%	8%	0%	11%
Southwest, n=11	9%	0%	0%	0%	0%

Table 9 examines employment outcomes, broken down by program of study. The *Truck Driving* program had the strongest employment outcomes. Just over half of participants who exited from the *Truck Driving* program were placed in employment (52%); about a fifth were retained in employment at three months (19%), six months (19%), and nine months (16%); and nearly a third experienced a wage increase (29%). The *Truck Driving* program is offered as a GMACW TAACCCT program only in TCAT-Memphis, likely explaining the strong employment outcomes for TCAT-Memphis described above.

Table 9. Employment outcomes, by program of study

	Placed in employment	Retained in employment at 3 months	Retained in employment at 6 months	Retained in employment at 9 months	Had wage increase
Aviation technology, n=80	18%	4%	4%	4%	1%
Welding, n=69	22%	14%	9%	1%	10%
Machine technology, n=46	39%	22%	11%	2%	24%
Truck driving, n=31	52%	23%	23%	16%	29%
Diesel technology, n=19	32%	11%	11%	0%	21%

Machine Technology appears to be another program with strong employment outcomes. Well over a third of GMACW TAACCCT participants who exited from the

Machine Technology program were placed in employment (39%); about a fifth were retained in employment at three months (20%), although retention appeared to drop at six months (9%) and nine months (2%); and about a quarter experienced a wage increase (24%). The *Aviation Technology* program had relatively the weakest employment outcomes, with less than a fifth of participants placed in employment.

DISCUSSION

SUMMARY OF FINDINGS

As discussed earlier, the preliminary findings about program outcomes presented in this report should be interpreted with care. The program implementation team has noted lags in data entry as well as gaps in data entry that vary by college. The grant has recently focused on strengthening data entry efforts, concentrating on accurately recording credential attainment as well as recording completion status for participants who have exited the program. Thus, the evaluation team expects to have more complete data when it reexamines outcomes in the upcoming interim evaluation report.

The findings in this report, although preliminary, are promising. Program completion outcomes are strong: two-thirds of participants completed their coursework and obtained a certificate or degree, very close to the grant's target goal of 70% of participants completing the program. Credit hour accumulation is robust with participants earning, on average, about ten college credits per semester. Credential attainment is also strong, with nearly two-thirds earned a credential of some type. Note however that this strong credential attainment is still lower than the target goal of 80% of participants earning a credential.

While education outcomes for GMACW TAACCCT participants are robust, employment outcomes are weak. Only a quarter of participants were placed in employment, considerable lower than the target goal of nearly half being placed in employment. Note however that employment outcomes are self-reported: employment outcomes are tracked by Job Retention Coaches (funded by the TAACCCCT grant) who follow-up with students individually at regular intervals. Attempts to follow-up with students have not always been uniformly successful, and retention coaches have had challenges gathering employment data directly from students. However, the grant has recently focused on strengthening these follow-up efforts, concentrating specifically on gathering employment data from students. Thus, the evaluation team expects that employment data recorded in Salesforce over the coming year will be more complete, and anticipates stronger employment outcomes in the next Salesforce data transfer. Also, if the

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grant is able to secure access to UI wage data, the evaluation team expects to be able to gather better and more complete employment outcomes from the UI wage records.

As noted in this report, education and employment outcomes vary considerably, both by institution and by program of study. The program implementation team would benefit from studying these variations to identify specific strategies that are contributing to successful institutions and successful programs, and adapting these strategies at other institutions and programs.

NEXT STEPS

During the first two years of grant implementation, the impact evaluation team made significant progress as it (1) established data sharing agreements with the four consortium colleges; (2) conducted baseline site visits to understand grant implementation and assess data collection capacities; (3) refined the evaluation design based on how the grant was being implemented; (4) prepared and delivered the final impact evaluation plan (Ray Marshall Center 2016); (5) established a timeline with target dates for data collection; (6) conducted test data transfers with the consortium colleges; (7) addressed challenges identified during the test data transfers; and (8) received and analyzed intake and outcome data for participants, collected through the Salesforce database. As a result of the advances made in the first two years of the grant, the evaluation team is well positioned to carry out the impact evaluation as designed, in the final two years of the grant.

However, two gaps in data collection remain. First, access to wage data has not yet been established. The Ray Marshall Center continues to work with the GMACW team to obtain Unemployment Insurance (UI) quarterly earnings records, available through each state's employment data system. Efforts are ongoing, and the evaluation team hopes to make progress over the coming year. Second, due to the unique manner in which the grant was implemented at Southwest, identifying a suitable comparison group for participants at Southwest has been challenging. The Ray Marshall Center continues to work with the GMACW team and the program coordinator at Southwest to explore potential comparison group students. The evaluation team anticipates making progress on this front when it begins conducting preliminary impact analyses in the coming year.

The evaluation team recently received academic data on comparison group students from the institutional research data systems at ASU-Mid South and Moore Tech, and expects to receive academic data on comparison group students from TCAT- Memphis in the coming months. Once data has been received from all three colleges, the evaluation team will conduct preliminary impact analyses and will present initial findings of program impacts in the next report. The evaluation team will also continue to monitor data on the treatment group participants (collected through the Salesforce database); participant demographics and outcomes will be monitored and reported in the next report as well.

APPENDIX A. PROGRAM LAUNCH DATES

College	Programs	Date Program Launched
Mid-South Community College	1) Welding Technology	1/27/2015
	2) Machine Technology	6/1/2015
	3) Process Control	11/30/2015
	4) Diesel Technology	7/13/2015
	5) Aviation Technology	1/27/2015
	6) Mechatronics	6/1/2015
William R. Moore College of Technology	1) Machining Technology	1/5/2015
	2) Welding	1/5/2015
Tennessee College of Applied Technology	1) Machine Tool Technology	5/11/2015
	2) Diesel Powered Equipment Technology	4/1/2015
	3) Aircraft Mechanics	5/18/2015
	4) Welding, Brazing & Soldering	5/18/2015
	5) Truck Driving	5/18/2015
Southwest Tennessee Community College	1) Non-credit industry-specific training aligned with pathways	
	i. Finishing (Machining)	2/2/2016
	ii. Welding	9/27/2016
	iii. Aha! (IRT completers)	9/8/2015

APPENDIX B. GMACW TAACCCT PARTICIPANT INTAKE FORM

Greater Memphis Alliance for a Competitive Workforce
TAACCCT 4 Intake Form

For Office Use Only: ☐ Moore Tech ☐ MSCC ☐ TCAT-M ☐ Southwest Student ID # _____

BACK-GROUND

The US Department of Labor has awarded a grant to fund the improvement of education in the manufacturing and transportation, distribution, and logistics (TDL) sectors to the Partner Colleges of the Greater Memphis Alliance for a Competitive Workforce (GMACW).

IDENTIFYING INFORMATION

First Name:		Middle Initial:		Last Name:	

Street Address:

City:	County:	State:	Zip:

SSN: - -	DOB: / /	Home Phone: ( ) -

Cell Phone: ( ) -	E-mail:

2nd E-mail:	Emergency/Alternate Contact Name: Relation:

Emergency/Alternate Contact Phone: ( ) -	Emergency/Alternate Contact E-mail:

PARTICIPANT INFORMATION

Authorized to work in the United States: (check only one box)
☐ Yes, U.S. Citizen ☐ Yes, Permanent Resident ☐ Yes, Permanent Non-resident Work Visa ☐ No

What is your highest Education Level Completed? (check only one)

☐ High School graduate or equivalent

☐ 1-2 years of college, technical or vocational school –Diploma or Certificate awarded

☐ 1-3 years of college, technical or vocational school no degree

☐ Associates Degree or Equivalent

☐ Bachelor's Degree or Equivalent

☐ Advanced Degree beyond Bachelor's

Gender:

☐ Female

☐ Male

Race (select all that apply):
☐ American Indian ☐ Native Hawaiian/Pacific Islander
☐ Asian ☐ White
☐ Black or African American

Hispanic/Latino:

☐ Yes ☐ No

ENROLLMENT STATUS

Are you currently enrolled: (Select one)

☐ Full-time credit ☐ Part-time credit ☐ Non-credit ☐ Not Yet Enrolled

Semester / Year First Enrolled:	Current Program of Study:	Type of Degree or Certificate:

Are you eligible to receive Pell grant funds for your training? ☐ Yes ☐ No ☐ Unknown

EDUCATIONAL ALTERNATIVES

If the training / education program you are registering for did not exist, what is your best guess about what you would have done? (Select one)

☐ I would not have pursued any training / education

☐ I would have enrolled in a similar program of study offered at this college.
Which program? _____

☐ I would have enrolled in a similar program of study offered at another college.
Which college?_____

STATUS

Check all that apply:

Individual with Disability: ☐ Yes ☐ No Employed: ☐ Yes ☐ No ☐ TAA Eligible ☐ Dislocated Worker

VETERAN STATUS	Select one: ☐ Not a Veteran ☐ Served on active duty for ≤ 180 days ☐ Served on active duty for more than 180 days (including reservists during a period of war) ☐ Spouse of an active duty veteran who was disabled, died, or captured while on active duty
WORKFORCE OFFICE	If you were referred by a Workforce Center, which one? _____ Are you currently registered with your local Workforce Career Center?: ☐ Yes ☐ No If yes, please indicate the month and year of your most recent registration: _____
EMPLOYMENT STATUS	If employed: Employer Name: _____ Address: _____ Contact Person: _____ Position: _____ Hours / week: _____ ☐ Working Part-time ☐ Working Full-time Work Phone: (____)_____ Start Date: _____ Salary: $_____
EMPLOYMENT HISTORY	List your two previous jobs: [1] Position:_____ Employer:_____ Start date:_____ End Date:_____ Hours /Week:_____ Hourly Wage:_____ [2] Position:_____ Employer:_____ Start date:_____ End Date:_____ Hours /Week:_____ Hourly Wage:_____
CONSENT	The information being requested will be used to determine grant eligibility and report educational outcomes for the Department of Labor (DOL) Trade Adjustment Assistance Community College and Career Training (TAACCCT) 4 grant programs. Completion of all fields within the form is completely voluntary; however, failure to provide key eligibility information may result in incomplete information being reported which may affect program success. All information provided will be kept confidential and will only be used to determine program eligibility, referral to the appropriate training program, and evaluation of program progress. By signing below I am giving my consent to participate in this grant program and attest that the information provided is, to the best of my knowledge, complete and accurate. I authorize the disclosure of the information contained in this form to authorized third parties. I also authorize an employer to disclose information related to my employment to authorized third parties as required for evaluation of the grant as stated above and release my employers from liability for providing such information in good faith. This consent also includes authorization for the use of my photos, videos, and information in program publicity and student success stories. I certify that the information provided is to the best of my knowledge complete and accurate. In accordance with the Privacy Act of 1974 (Public Law No. 93-579, 5 U.S.C. 552a), you are hereby notified that the Department of Labor is authorized to collect information to implement the Trade Adjustment Assistance Community College and Career Training Program under 19 USC 2372 – 2372a. Participant's Signature:_____ Date: _____ Signature:_____ Date: _____ Program Counselor/Coordinator

APPENDIX C. TARGET GRANT OUTCOMES

	Outcome Measure	Grant Total	ASU Mid-South	Moore Tech	Southwest	TCAT-Memphis
1	# Participants Served	1500	338	295	584	283
	Year 1	400	90	79	155	76
	Year 2	500	113	98	195	94
	Year 3	600	135	118	234	113
2	# Completing Program of Study	1050	236	207	409	197
	Year 1	200	45	40	78	38
	Year 2	350	79	69	137	66
	Year 3	500	112	98	195	94
3	# Retained in Program of Study	600	135	118	234	113
	Year 1	100	23	20	39	19
	Year 2	200	45	39	78	38
	Year 3	300	68	59	117	56
4	# Completing Credit Hours	1350	304	266	526	254
	Year 1	320	72	63	125	60
	Year 2	400	90	79	156	75
	Year 3	630	142	124	246	119
5	# Earning Credentials	1200	271	237	467	226
	Year 1	150	34	30	58	28
	Year 2	500	113	99	195	94
	Year 3	550	124	109	214	103
6	# Enrolled in Further Education	400	90	79	156	75
	Year 1	50	11	10	19	9
	Year 2	150	34	30	58	28
	Year 3	200	45	39	78	38
7	# Employed After Program Completion	700	158	138	273	132
	Year 1	70	16	14	27	13

	Year 2	210	47	41	82	39
	Year 3	280	63	55	109	53
	Year 4	140	32	28	55	26
8	# Retained in Employment After Completion	600	135	118	234	113
	Year 1	60	14	12	23	11
	Year 2	180	41	35	70	34
	Year 3	240	54	47	94	45
	Year 4	120	27	24	47	23
9	# Received Wage Increase Post-Enrollment	280	63	55	109	53
	Year 1	60	13	12	23	11
	Year 2	80	18	16	31	15
	Year 3	80	18	16	31	15
	Year 4	60	13	12	23	11

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