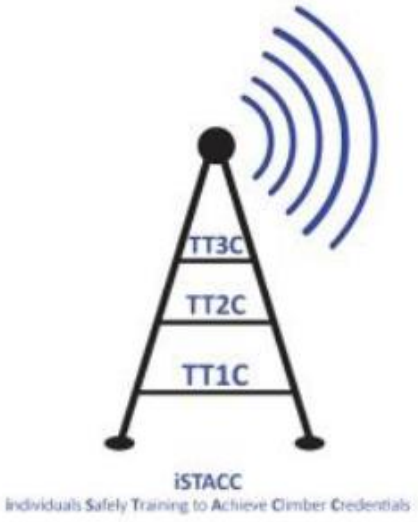
Individuals Safely Training to Achieve Climber Credentials (iSTACC)

Aiken Technical College



FINAL EVALUATION REPORT

September 30, 2018

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TABLE OF CONTENTS

TABLE OF EXHIBITS AND TABLES

EXECUTIVE SUMMARY

Aiken Technical College (ATC) was a South Carolina state-approved grantee for a TAACCCT program designed to train and employ low-skilled workers, TAA-certified workers, and other eligible individuals in high paying and in-demand jobs in the tower and wireless installation industry. The Individuals Safely Training to Achieve Climber Credentials (iSTACC) project was designed to help satisfy unfilled industry demand for trained workers, reduce fatalities in an unnecessarily dangerous industry, and create a replicable model for community colleges nationwide.

Between 2003 and 2013, over 100 climbers died working on cell tower sites[1]—many of these deaths were due to limited safety training or failure to follow outlined safety procedures. On February 10, 2014, OSHA Assistant Secretary Dr. David Michaels wrote to the Communications Tower Industry employers stating, "there were a total of 13 tower industry related fatalities in 2013 alone, which was higher than the fatality totals of 2012 and 2011 combined." These statistics, and the growth in the industry and workforce demand, fueled ATC's commitment to serve the need for high-quality safety training, while simultaneously bringing opportunities to the workforce in their region.

Over the life of the TAACCCT grant, ATC successfully built and expanded their existing and nationally unique Tower Installation (TWI) training program.[2] Through the iSTACC project, ATC implemented three primary elements into their TWI program, including:

- Stackable Credentials for Career Pathways in the Tower Installation Industry
- Rigorous Tower Installation Training Curricula
- Student Support Services

RTI International conducted an evaluation that assessed the iSTACC project, working closely with ATC staff. The 24-month mixed methods evaluation included both formative and summative analyses to determine the project's outcomes and to help the iSTACC project team to reflect upon and improve the implementation of the proposed activities. As such, the evaluation questions, and resulting cumulative final evaluation report, were organized around program implementation and program impact.

During the first month of the evaluation, RTI worked with ATC staff to develop a logic model for the program. They identified the desired short-, mid-, and long-term goals, and the inputs and strategies deemed necessary for accomplishing the desired outcomes. The final logic model for the program is included in Exhibit A of the report. A summary of key findings by evaluation question and potential future strategies for sustainment are provided in the following subsections.

[1] http://wirelessestimator.com/content/fatalities

[2] https://www.atc.edu/Study/Programs-of-Study/Technical-Education/Tower-Installation

KEY FINDINGS

IMPLEMENTATION FINDINGS BY EVALUATION QUESTION

1. Which program elements were successfully implemented?

- The proposed program elements were successfully implemented, including the creation of stackable credentials for career pathways in the tower installation industry, the development and enhancement of the tower installation training curricula, and the delivery of student support services.
- Stackable credentials are now offered through the TWI program, including Tower Training 1 (TT1), Tower Training 2 (TT2), Tower Training 3 (TT3), and Tower Training 4 (TT4) certificates.
- ATC has been able to sustain the TWI program beyond the grant. The instructor is now being funded by the college and is in the process of getting approved to be an administrator of the TT1 and TT2 certifications.
- Students in the TWI program will continue to receive support services through the college's Workforce Readiness Center.

2. What barriers existed or were encountered?

- Severe flooding in South Carolina during the first year of the grant led to a delay in the procurement of several key program-related items, including curriculum developers, the evaluator (RTI), and the practice climbing tower. However, these items were all acquired within the grant period and should not be a barrier moving forward.
- Challenges still exist with recruitment and placement, including general awareness, financial constraints of students, unique job requirements, lack of industry required certifications, and a void in a recruitment and placement specialist. Strategies for growing the program will need to be identified.

IMPACT FINDINGS BY EVALUATION QUESTION

1. What are the program participant characteristics vs. the comparison group?

- The TAACCCT funded Tower program had the highest percentage of non-white students across all programs (at 64 percent).
- Since receiving TAACCCT funding, the percentage of females engaged in the Tower program has increased (from 1 percent to 9 percent).
- While the average age of the Tower student has decreased since receiving the TAACCCT funding, it is still higher than the average age of Welding students (29.48 and 19.53, respectively).
- The Tower program engages more veterans than the comparable Welding program (16 percent and 0 percent, respectively).

2. What are the participant outcomes versus student in the comparison group?

- 162 students enrolled in the TAACCCT funded Tower training program, with 112 having graduated and receiving their TT1 certificate of completion from ATC, and another four students currently enrolled in the program.
- The completion rate of the Tower program is comparable to the Welding program (71 percent and 73 percent, respectively).
- Being a Tower student was associated with a GPA .32 points higher than those in the Welding program.
- Age was the only significant predictor of GPA when controlling for the other demographic variables—with every year of age increasing a student's GPA by .01 point.
- Employment data not available for this evaluation, but future analyses could be conducted.

POTENTIAL FUTURE STRATEGIES FOR PROGRAM SUSTAINMENT

With the recruitment and placement challenges mentioned, ATC needs to identify a new strategy for recruiting students and finding employment placements for their graduates to ensure continued program success. As an example, continuing to engage as a board member of the National Wireless Safety Alliance may help to raise awareness of the training program at ATC as the industry moves towards requiring tower climbing training and certification. The college could also seek a new partner serving veterans to help increase and sustain enrollment. Funding for additional student supports should also be identified.

I. INTRODUCTION

Aiken Technical College (ATC) was a South Carolina state-approved grantee for a TAACCCT program designed to train and employ low-skilled workers, TAA-certified workers, and other eligible individuals in high paying and in-demand jobs in the tower industry. The Individuals Safely Training to Achieve Climber Credentials (iSTACC) project was designed to help satisfy unfilled industry demand for trained workers, reduce fatalities in an unnecessarily dangerous industry, and create a replicable model for community colleges nationwide.

Between 2003 and 2013, over 100 climbers died working on cell tower sites[3]—many of these deaths due to limited safety training or failure to follow outlined safety procedures. On February 10, 2014, OSHA Assistant Secretary Dr. David Michaels wrote to the Communications Tower Industry employers stating, "there were a total of 13 tower industry related fatalities in 2013 alone, which was higher than the fatality totals of 2012 and 2011 combined." Given these statistics, and the growth in the industry and workforce demand, fueled ATC's commitment to serve the need for high-quality safety training, while simultaneously bringing opportunities to the workforce in their region.

PROGRAM DESIGN

ATC proposed to build upon and expand their existing and nationally unique Tower Installation (TWI) training program.[4] Designed to produce entry-level authorized climbers, the program included 16 semester hours of college credit over 5-weeks, with students earning a Tower Technician I (TT1) Certificate. Through the iSTACC project, ATC proposed to implement three primary elements into their TWI program, including:

- Stackable Credentials for Career Pathways in the Tower Installation Industry
- Rigorous Tower Installation Training Curricula
- Student Support Services.

EVALUATION OVERVIEW

RTI International conducted an evaluation that assessed the iSTACC project, working closely with ATC staff. The 24-month mixed methods evaluation included both formative and summative analyses to determine the project's outcomes and to help the iSTACC project team to reflect upon and improve the implementation of the proposed activities. Accordingly, the following evaluation questions and this report were organized around program implementation (Section II) and impact (Section III). During the first month of the evaluation, RTI worked with ATC staff to develop a logic model for the program. They identified the desired short-, mid-, and

[3] http://wirelessestimator.com/content/fatalities

[4] https://www.atc.edu/Study/Programs-of-Study/Technical-Education/Tower-Installation

long-term goals, and the inputs and strategies deemed necessary for accomplishing the desired outcomes. The final logic model for the program is included in **Exhibit A**.

EVALUATION QUESTIONS

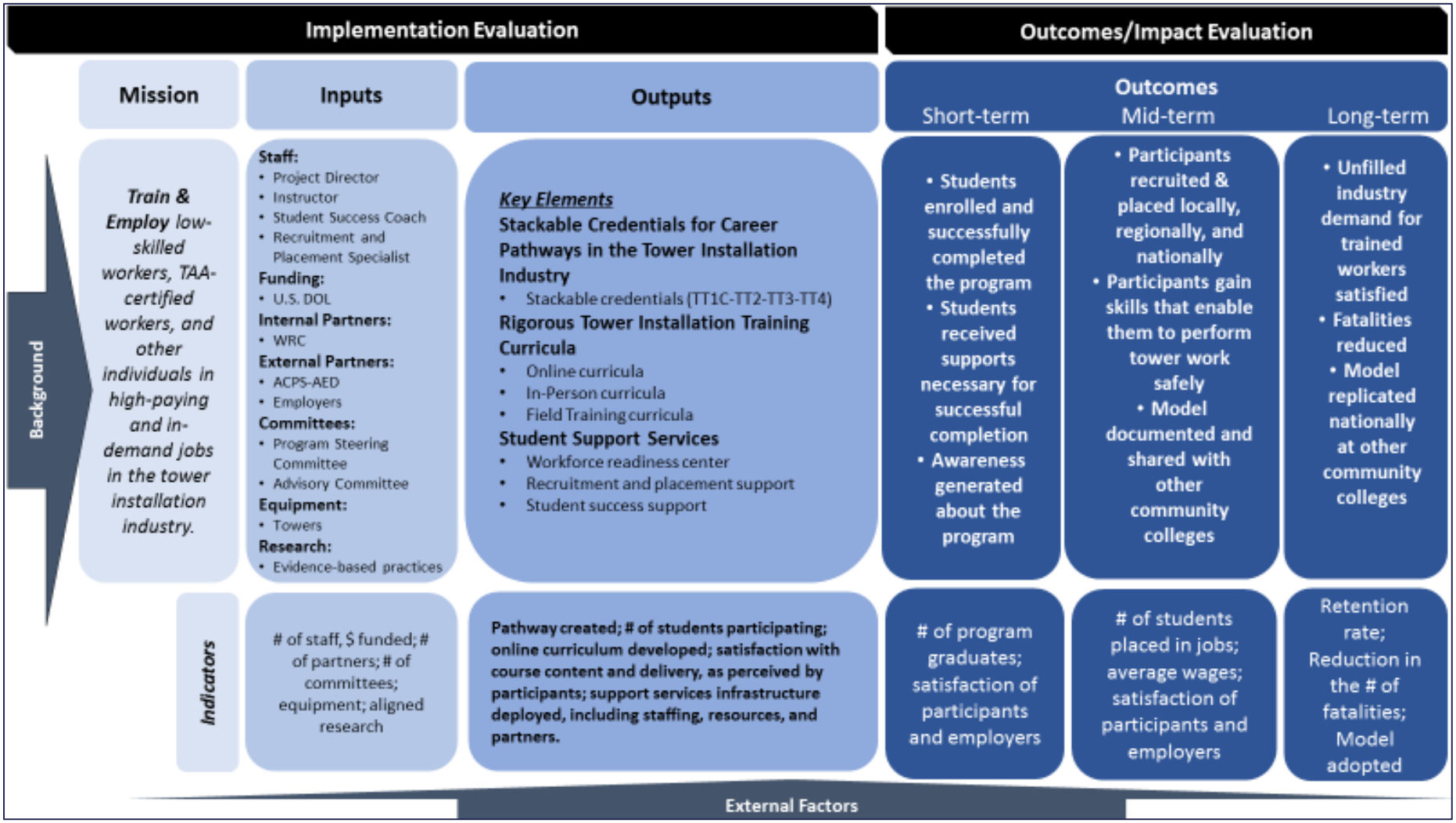
Program implementation questions:

1. Which program elements were successfully implemented?
2. What barriers existed or were encountered?

Program impact evaluation questions:

1. What are the program participant characteristics vs. the comparison group?
2. What are the participant outcomes (credit, certificates, degree attainment) versus student in the comparison group?

Exhibit A. Evaluation logic model



II. IMPLEMENTATION STUDY

IMPLEMENTATION STUDY METHODOLOGY AND LIMITATIONS

The implementation study included multiple sources of information and data collection methods. This included program site visits, student surveys, and interviews with businesses. Each of these methods and the respective limitations of the data is further described below.

SITE VISITS

Three in-person site visits were conducted during the course of the project (in Fall 2016, Summer 2017, and Summer 2018). During the site visits, interviews were conducted with key staff (such as the program director, instructor, student success coach, and the recruitment and placement specialist), focus groups were held with current students, and observations of the classroom and training activities were conducted. The following provides more information about each of these data sources.

STAFF INTERVIEWS

Staff interviews were conducted with key staff during the site visits to ATC. Specific interviews by site visit date are outlined below.

- Fall 2016: program director, instructor, student success coach, and recruitment and placement specialist
- Summer 2017: program director, instructor, student success coach, and recruitment and placement specialist
- Summer 2018: program director and instructor

STUDENT FOCUS GROUPS

Student focus groups were conducted during each of the site visits to ATC. The following provides the number of students that participated in the focus groups by site visit.

- Fall 2016: 4 students
- Summer 2017: 6 students
- Summer 2018: 5 students

CLASSROOM OBSERVATIONS

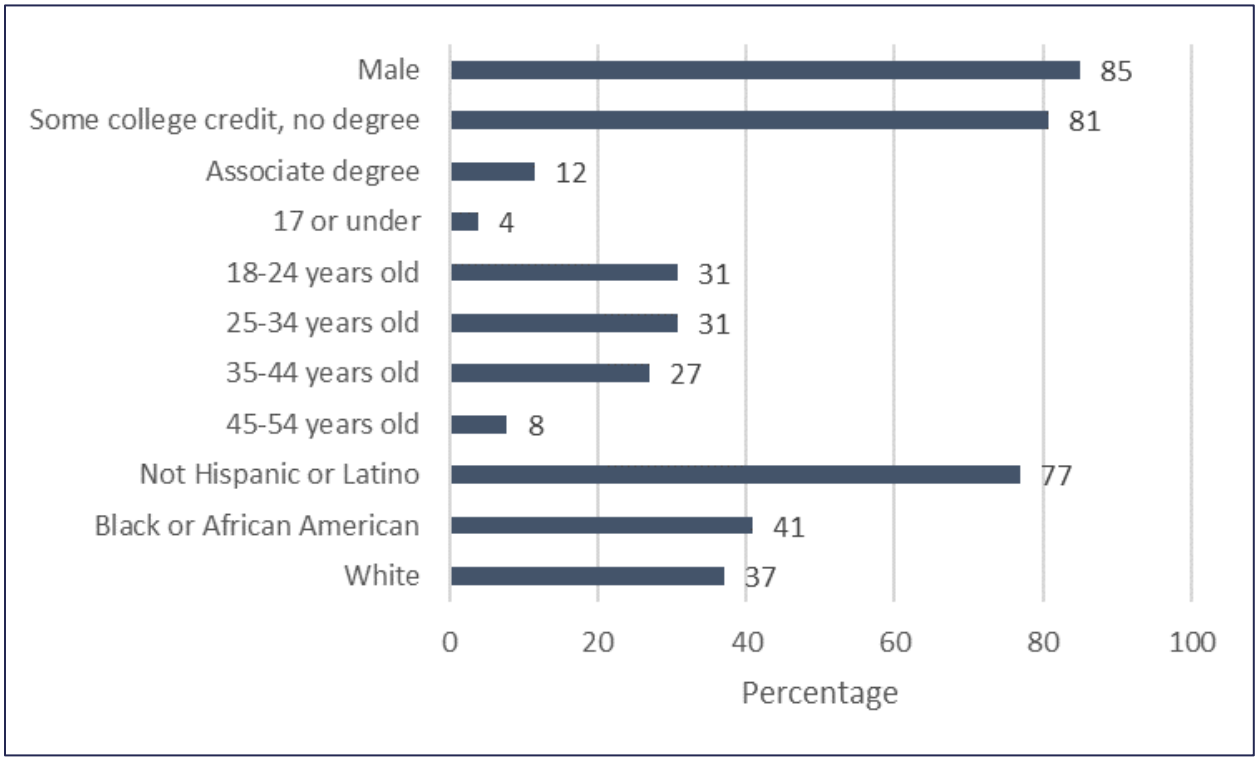
Classroom observations were conducted during the site visits to ATC. The focus of the classroom observations was to witness the curriculum implementation, assess student engagement, and assure focus on safety throughout.

STUDENT SURVEY

Surveys were administered in two waves: a series of requests were sent to 76 alumni in June 2017, and then in July 2018, requests were sent again to non-responders in addition to 40 new alumni. Across both administrations, 28 alumni responded out of a total of 116 students, resulting in an overall response rate of 24 percent. It is therefore important to note that a response rate of 24 percent is insufficient to consider any of the results generalizable to the entire TWI alumni population. The survey results shared in this report represent the feedback of only those who responded and should be interpreted with this in mind.

The majority of students who responded to the survey were male (85 percent), had completed some college (81 percent), and were not Hispanic or Latino (77 percent). Most survey respondents were between the ages of 18 and 34 years old (62 percent) (**Exhibit B**).

Exhibit B. Select demographics of survey respondents (N=28)



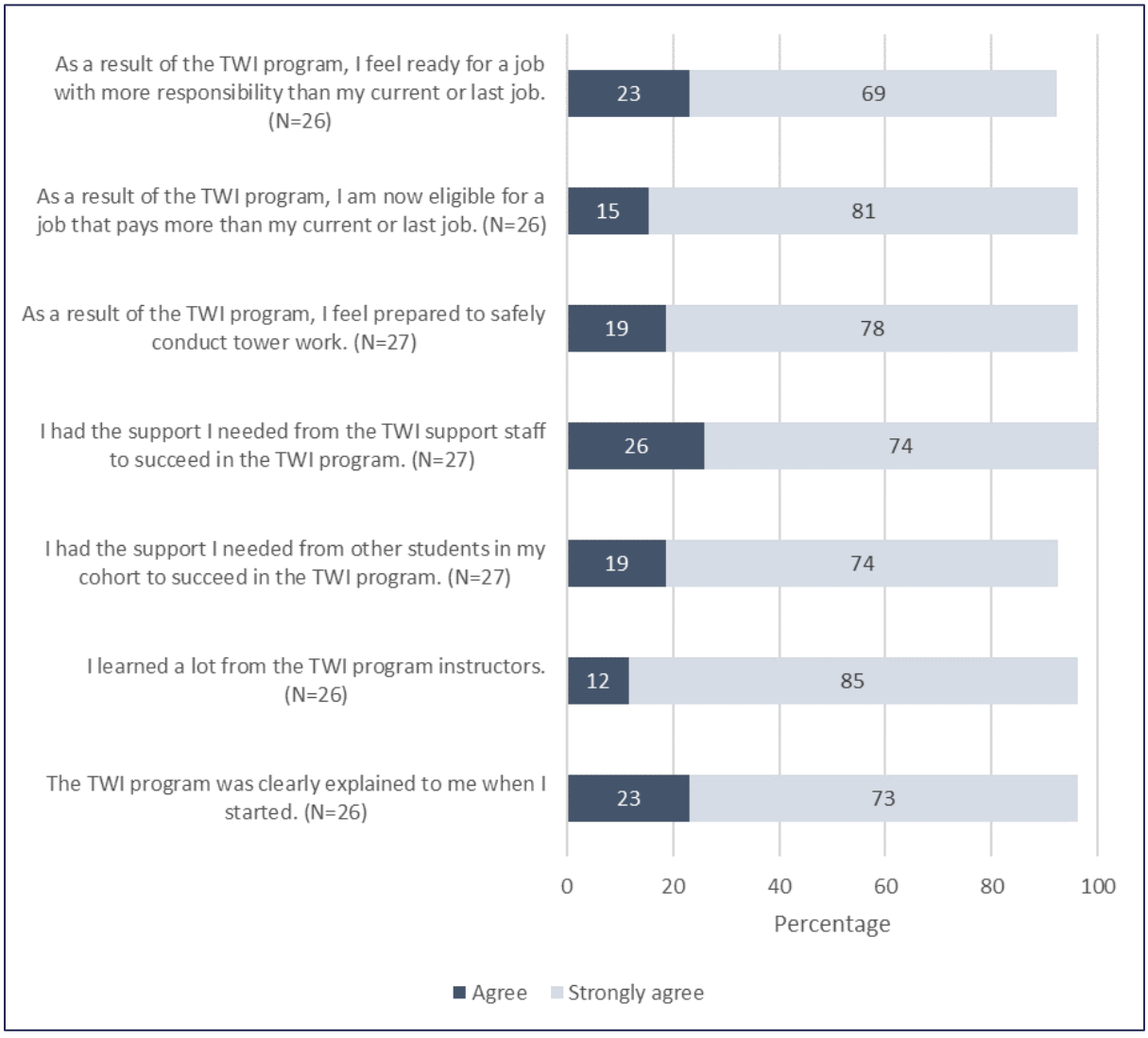
EMPLOYER INTERVIEWS

Interviews were conducted in April 2018 with three businesses in which ATC engages with in order to gain feedback from the employer perspective. ATC identified five businesses to reach out to, but only three participated in the interviews. The businesses represented the tower industry, including both cellular and broadcast companies.

IMPLEMENTATION STUDY RESULTS

The RTI team reviewed the data collected from across the sources described in the previous methodology section to assess the program. Overall, the students participating in the focus groups and the survey respondents were satisfied with the TWI program. Specifically, survey respondents rated their overall level of agreement with a number of elements regarding the program (**Exhibit C**). At least ninety-two percent of respondents indicated that they agreed or strongly agreed with each of the statements. The statement with the highest rating (all respondents agreed or strongly agreed) was, "I had the support I needed from the TWI support staff to succeed in the TWI program." The statement, "As a result of the TWI program, I feel ready for a job with more responsibility than my current or last job" received the lowest rating (although still very high at 92 percent of agreement), with only eight percent of respondents disagreeing that they felt ready for a job with more responsibility (data not shown).

Exhibit C. Percentage of respondents who agreed or strongly agreed with statements about the TWI program



The following subsections provide the aggregated findings across the two implementation evaluation questions presented in the introduction.

IMPLEMENTATION EVALUATION QUESTION #1: WHICH PROGRAM ELEMENTS WERE SUCCESSFULLY IMPLEMENTED?

Through the iSTACC project, ATC successfully implemented three key elements into their TWI program in order to achieve their objectives, including:

- Stackable Credentials for Career Pathways in the Tower Installation Industry
- Rigorous Tower Installation Training Curricula
- Student Support Services

ELEMENT #1: STACKABLE CREDENTIALS FOR CAREER PATHWAYS IN THE TOWER INSTALLATION INDUSTRY

Over the life of the TAACCCT grant, ATC successfully developed career pathways in the tower installation industry by creating a stackable credentialing training program with four levels: Tower Training 1 (TT1), Tower Training 2 (TT2), Tower Training 3 (TT3), and Tower Training 4 (TT4) certificates. The enhanced TT1 program takes 12 weeks to complete, with three weeks online, followed by nine weeks on campus. Upon completion, students earn their TT1 certificate and 16 hours of college credits. The TT2 and TT3 provide training for more in-depth skills and additional college credit hours. TT4 results in an Associate's Degree in Applied Sciences, with a concentration in wireless technology.

Program staff funded through the grant included the program director, who was hired in April 2015, and then a student success coach, a recruitment and placement specialist, and an instructor. However, at the end of the grant cycle, the positions for the program director, student success coach, and recruitment and placement specialist were eliminated. Funding for the instructor was sustained by the college, enabling the college to be able to continue offering the program to students. Additionally, TWI students continue to have access to ATC's Workforce Readiness Center for services that were provided or coordinated by the student success coach.

To date, 162 students have enrolled in the TT1 program, with 71 percent completing. Several survey questions were asked of students about how they heard about the program, and their motivations for enrolling. Additionally, information about their employment status before and after the program was also gathered. At least half of survey respondents had heard about TWI through an advisor, another student, or a recruiter (**Exhibit D**). The other half selected "other." Of the 14 students who responded "other", four specified that they had learned about the program through the military, two indicated the Forgot Gordon Education Center, and two through a "post challenge."

Survey respondents cited getting a "higher paying job" as the number one reason they had signed up for the TWI program (64 percent; **Exhibit E**). The next most frequently-cited reasons included interest in cellular/wireless technology (46 percent) and the desire to get a new

job (39 percent). The majority of respondents were not employed when they started the TWI program (73 percent; **Exhibit F**).

Exhibit D. How respondents had heard about the ATC TWI program (N=28)

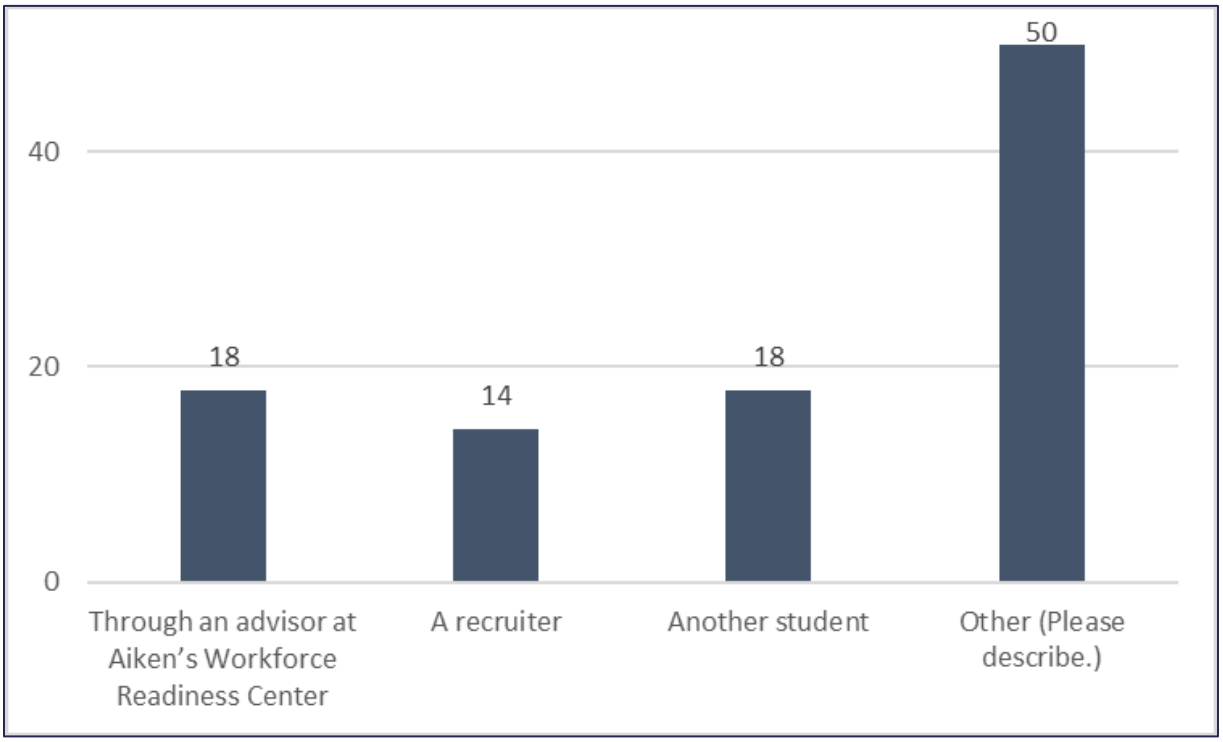
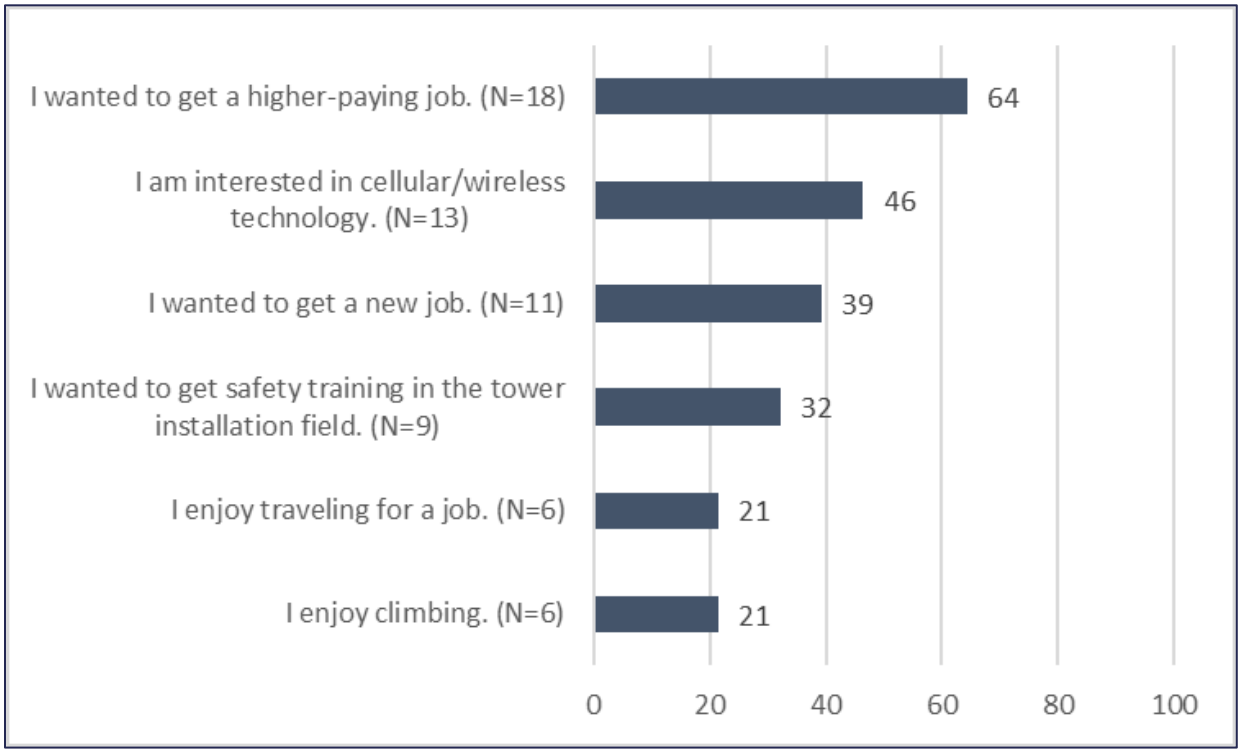
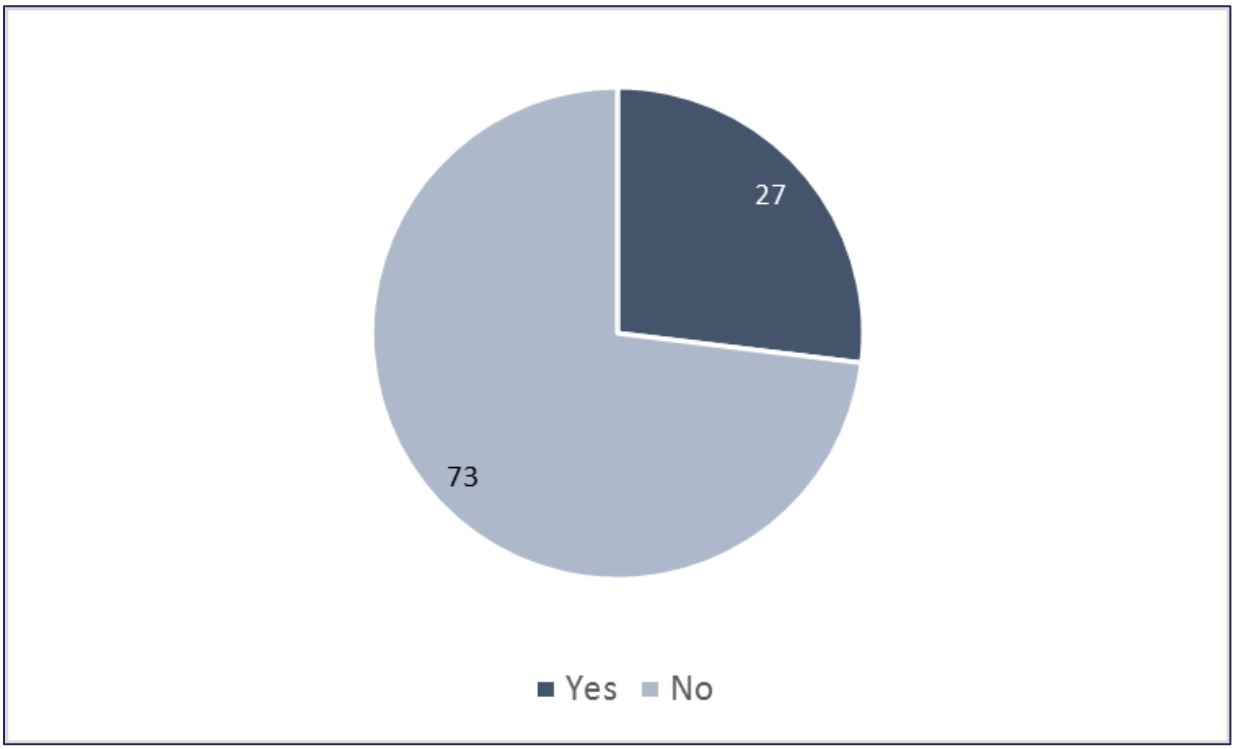


Exhibit E. Respondents' motivation for enrolling in TWI



NOTE: Respondents could select more than one answer, therefore percentages will not sum to 100.

Exhibit F. Percentage of respondents who were employed when they started the TWI program (N=26)



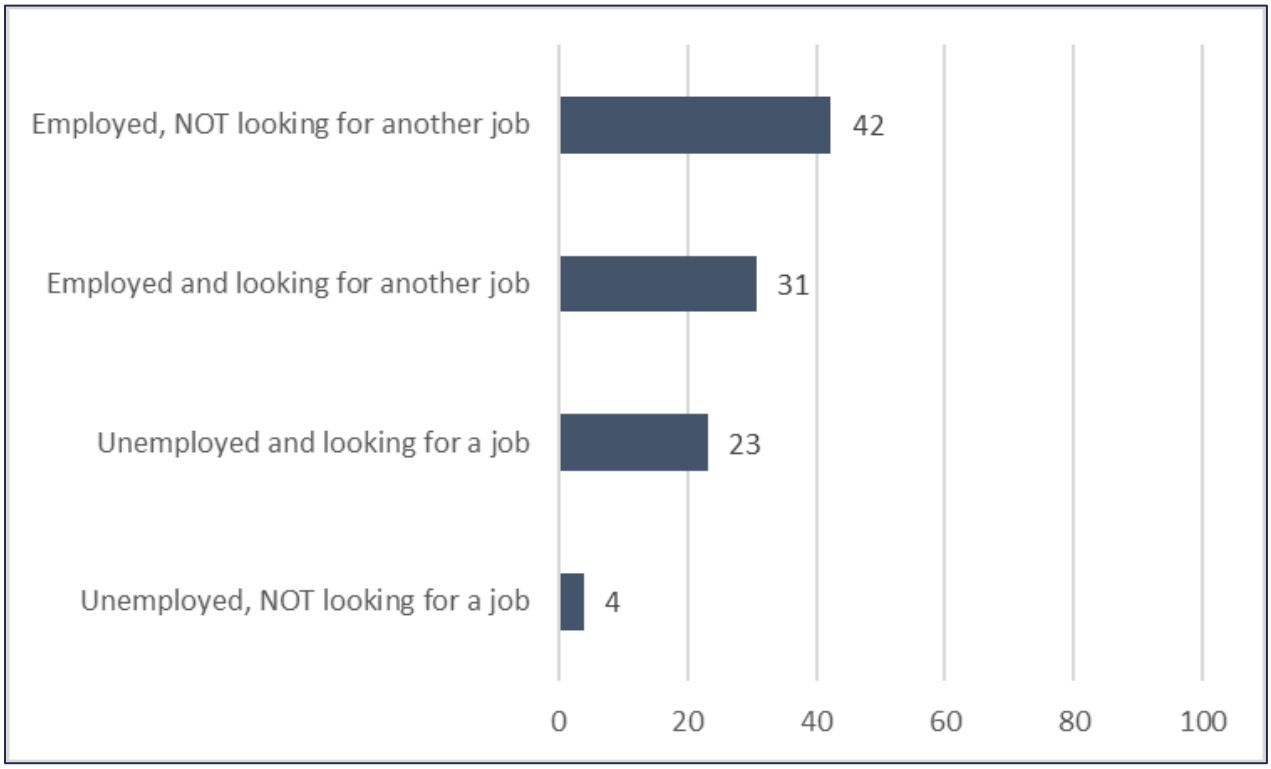
Respondents who indicated they were employed at the time they enrolled were asked to indicate how much they were paid per hour. Hourly pay ranged from $8.50 to $21.00. Average pay prior to enrollment was $15.10 and median was $16.10, which is slightly lower than the amounts respondents reported after completion of the program (see **Table 1**). After the program, the average pay per hour was $16.98, the median was $17.25, and the range was $8.50-$27.00 per hour.

Table 1. Post-Program hourly pay (N=16)

	Hourly Pay	
Average	$	16.99
Median	$	17.25
Minimum	$	8.50
Maximum	$	27.00

Respondents were also asked to report information about their current job situation (or what can be considered post-program employment; **Exhibit G**). The largest group of respondents indicated that they were employed and not looking for another job (42 percent) and only four percent of respondents indicated they were unemployed and not looking for a job. Twenty-three percent of respondents indicated they were unemployed and looking for a job. Of those who were employed after the program, the majority indicated they were employed as a tower installation technician (53 percent; data not shown).

Exhibit G. Respondents' most recent employment situation (N=26)

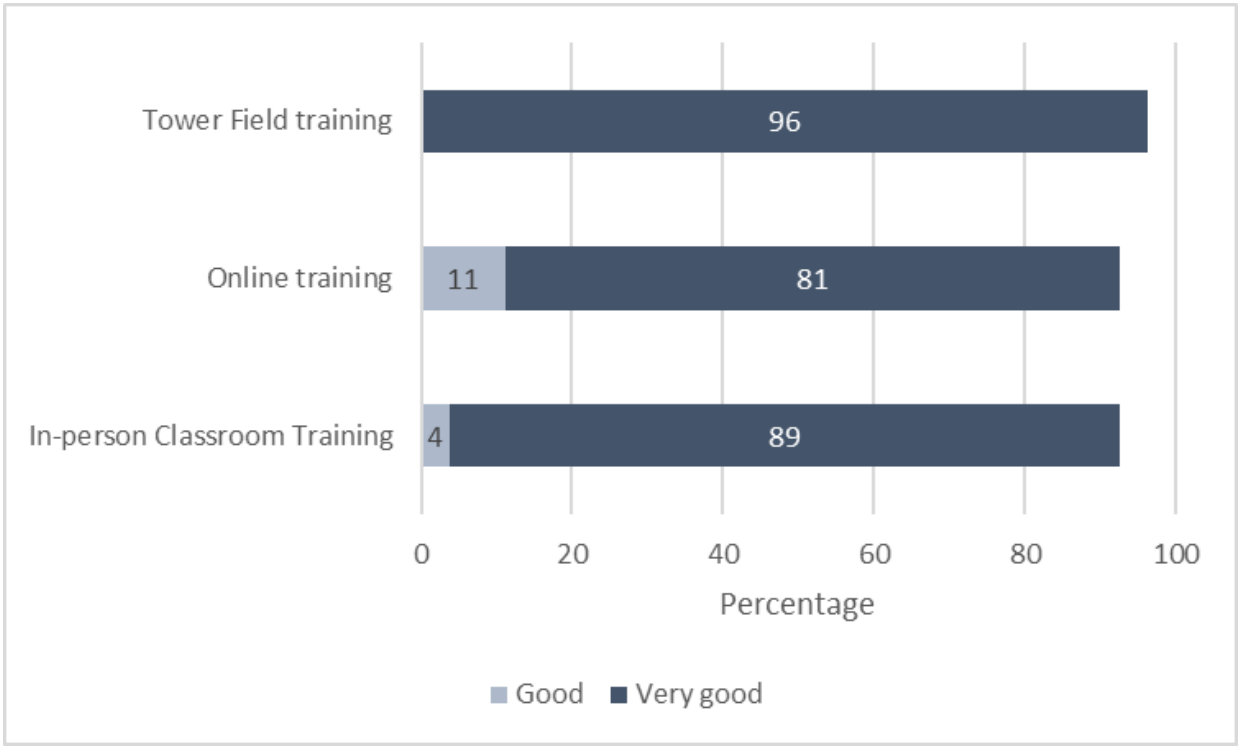


During interviews, staff self-reported a graduation rate of 100 percent (once they have completed their first climb), a placement rate of 98 percent, and that employers have voiced that the students are prepared. However, supporting workforce data was not available to confirm (see Section III for more information on program outcomes). Only one of the three businesses interviewed reported actually hiring graduates of the ATC program, but noted that he believed the program would fill an industry training need as the field moves toward requiring certifications. He also noted that the program graduates that they had hired were productive, technically competent, and demonstrated a strong awareness of safety.

ELEMENT #2: RIGOROUS TOWER INSTALLATION TRAINING CURRICULA

The grant funds were used to enhance ATC's existing TT1 curriculum, and to develop curriculum for the TT2, TT3, and TT4 credentials. This included developing the online portion of the curriculum, which occurs the during the first three weeks of the TT1 program, as well as acquiring a climbing tower for on-campus field training. The procurement of the onsite tower was delayed for the majority of the grant[5], requiring students to travel to an offsite training location. Fortunately, the building of the onsite tower was completed during the Spring of 2018 and will be available for future use. Survey respondents were asked to rate the quality of the different delivery modes of the TWI safety training curricula, including the online, in-person, and field training (**Exhibit H**). The majority of respondents, or more than 90 percent, indicated that they thought all of the training curricula was "good" or "very good."

Exhibit H. Level of satisfaction with the training curricula (N=27)



Just over half of survey respondents indicated that the program was appropriately challenging (**Exhibit I**). No respondent indicated that they thought the program was too easy and did not feel challenged. Approximately 30 percent of the respondents thought the program was very challenging, but not problematic. Respondents were then asked how they would rate the time it took to complete the TWI program (**Exhibit J**). The majority of respondents, or 65 percent, thought that the program took an appropriate amount of [their] time.

[5] See page 15 for more information about this delay.

Exhibit I. Respondent's rating of the program difficulty (N=27)

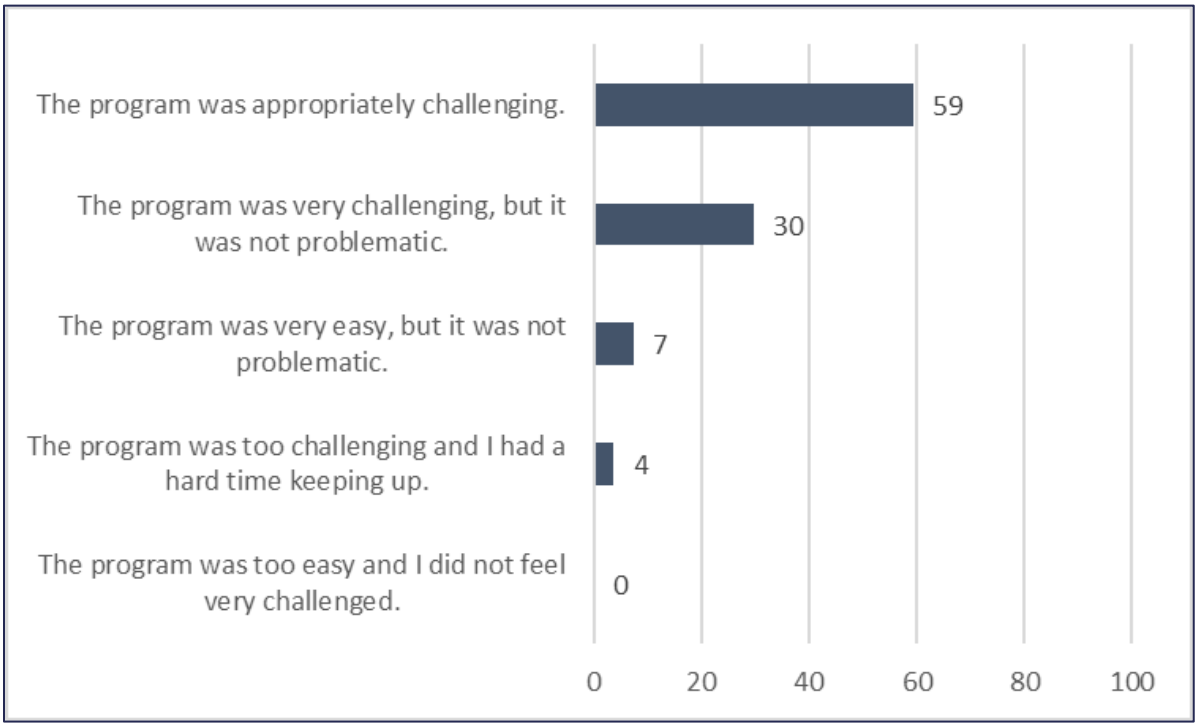
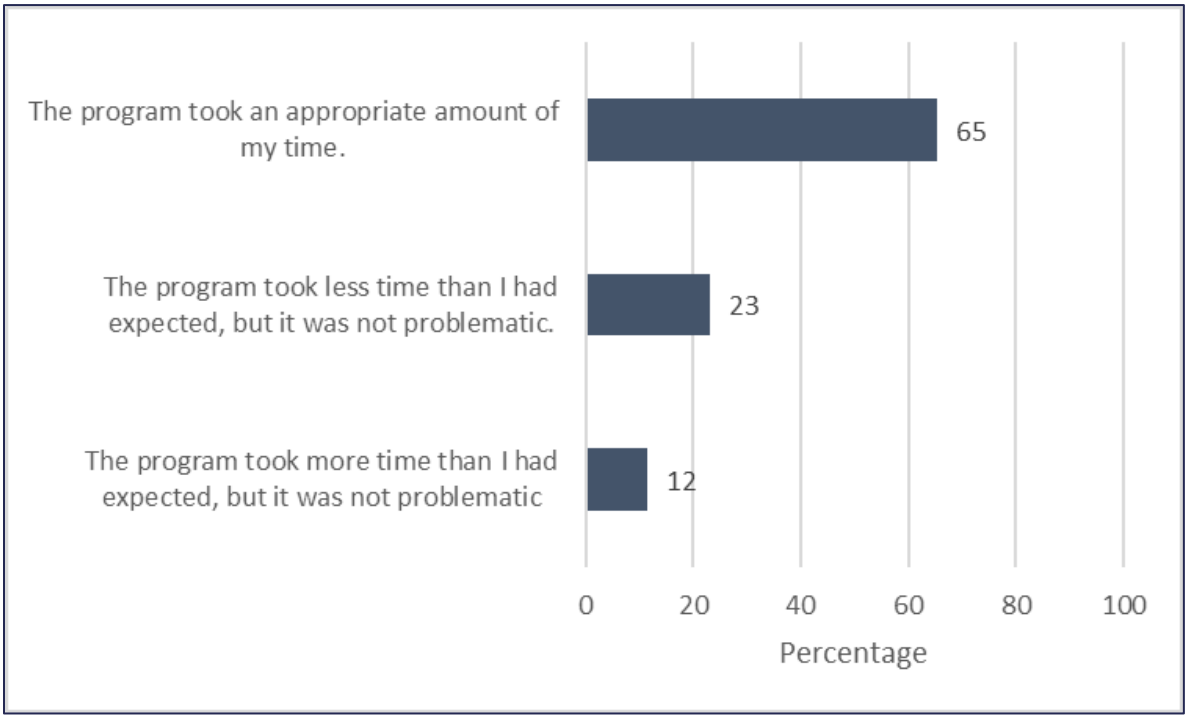


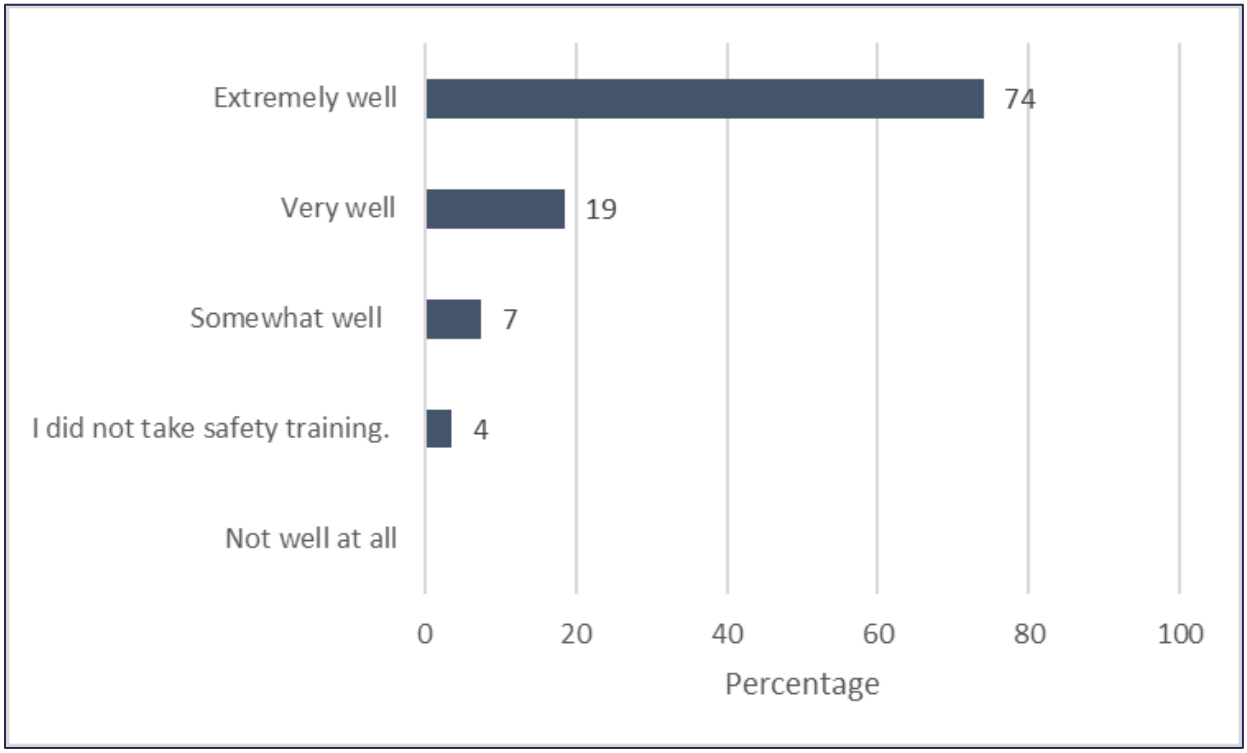
Exhibit J. Rating of the time it took to complete the program (N=26)



NOTE: Respondents could select more than one answer, therefore percentages will not sum to 100.

Nearly three quarters of respondents, or 74 percent, indicated that the safety training offered as part of the TWI program prepared them for employment in the tower industry "extremely well" (**Exhibit K**). Only seven percent of respondents thought the training prepared them only "somewhat well."

Exhibit K. Respondents' assessment of how well training prepared them for employment (N=28)



ELEMENT #3: STUDENT SUPPORT SERVICES

Providing students with supports necessary to complete the program was an important element to the project staff. During interviews, staff noted an informal "no fail" policy—where they believed everyone could succeed—and they were willing to put the time and effort into each student to ensure success. During the focus groups, the students reported feeling that the program staff cared about them and were dedicated to helping them succeed.

Of the different support staff, a majority of survey respondents indicated that they worked with the program instructors the most while enrolled in the program (**Exhibit L**). Respondents were also asked to indicate which of the support services they had used while in the program (**Exhibit M**). Sixty-one percent of respondents used job placement services and thirty-two percent used counseling/advising through the ATC's Workforce Readiness Center. Only seven percent of respondents used the online boot camps.

If a respondent indicated they had used a service, they were then asked to rate their satisfaction with that service (**Exhibit N**). The majority of respondents reported being very or extremely satisfied with each of the support services, although job placement services had twelve

of respondents indicate that they were “not at all satisfied” and eighteen percent indicate they were only “somewhat satisfied” (data not shown).

Exhibit L. Support staff respondents reported working with the most (N=25)

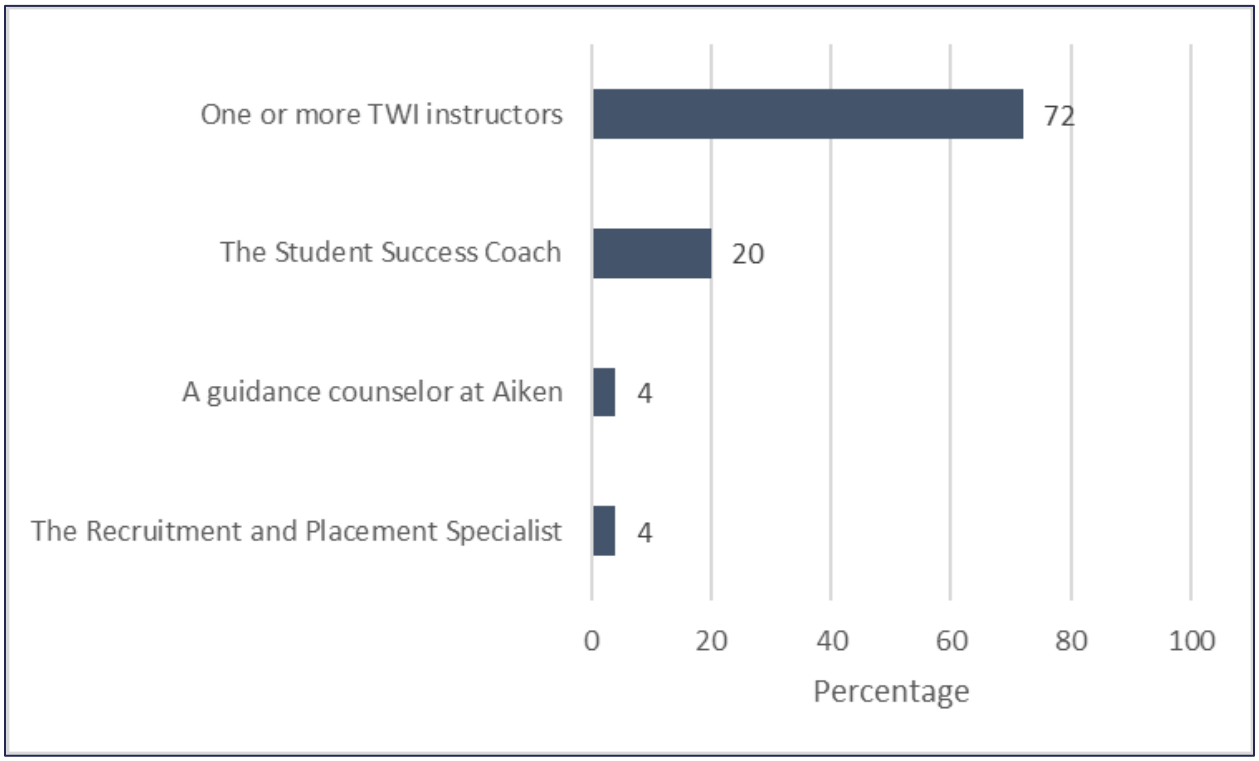


Exhibit M. Percentage of respondents reporting use of support services (N=28)

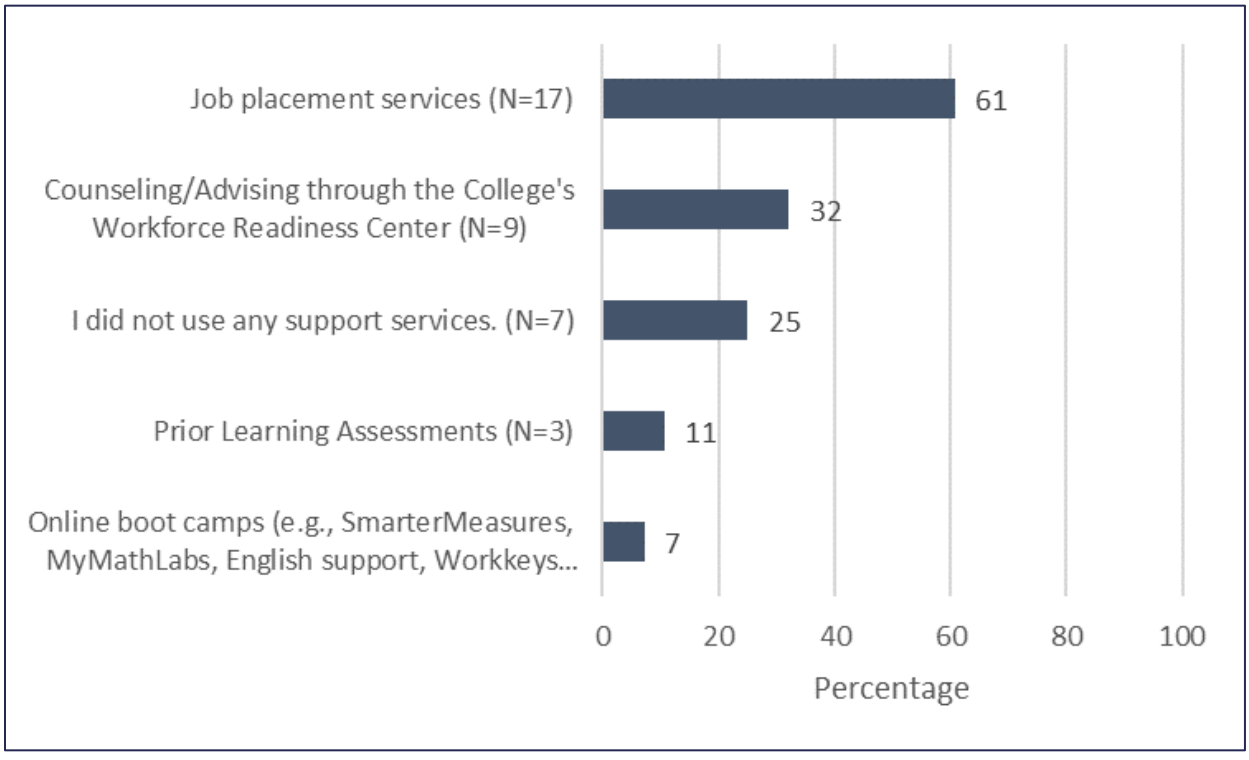
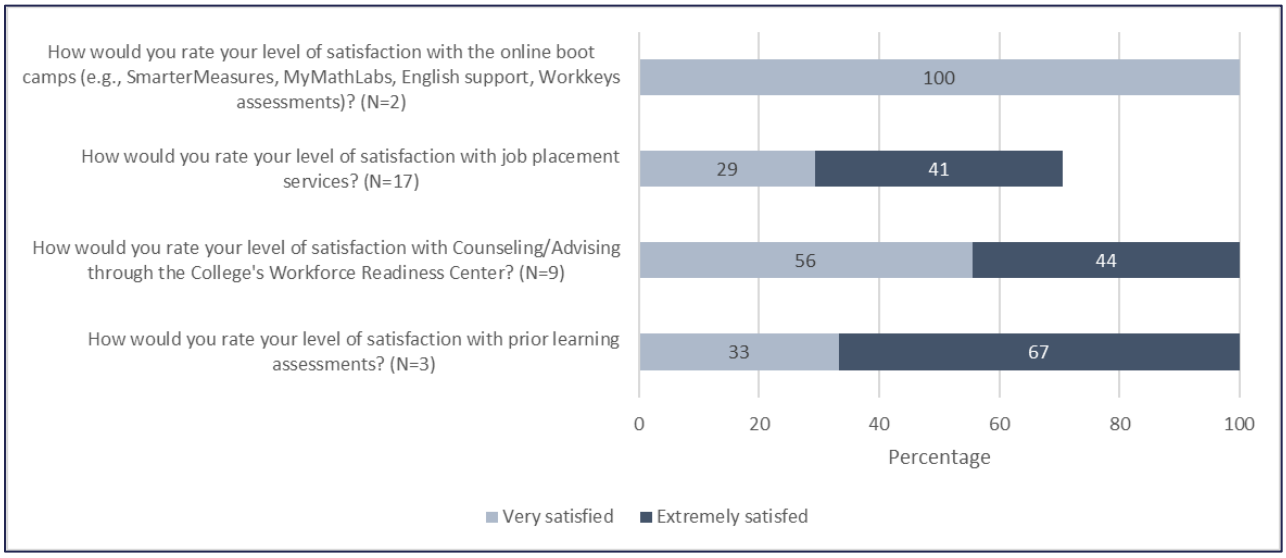


Exhibit N. Level of satisfaction with support services



IMPLEMENTATION EVALUATION QUESTION #2: WHAT BARRIERS EXISTED OR WERE ENCOUNTERED?

Severe flooding in South Carolina led to a delay in the procurement of several key program-related items, including curriculum developers, the evaluator (RTI), and the onsite practice climbing tower. The delay in procuring the practice climbing tower was the biggest challenge mentioned by several staff during the site visit interviews. While the ability to train was not impacted by this delay, it did result in a loss of money and time having to be spent traveling to the off-site training towers (which were 45 minutes to an hour and a half away from the college). The tower was ultimately installed during Spring 2018, which will improve the program efficiency moving forward. The delay in hiring the curriculum developers also impacted the program outcomes, as this delayed the TT2/TT3/TT4 programs from launching until the final year of the grant program.

Other challenges that were mentioned include:

- **Barriers to recruitment**: finding recruits that fit the requirements of climbers, who must uniquely be physically fit, very comfortable with heights, and willing to travel for work. Financial constraints and family obligations while students are in the program also creates a challenge in recruiting. Students are unable to work a full-time job while in the program, so they do not have the income to support their families during that time. They did report a few students worked part-time night jobs to offset some of this burden. A suggestion was given that the program could offer some sort of stipend might help offset this burden.
- **Certifications currently not required by industry**: Recruitment and placement challenges also exist because certification in the field is not required at this time (although there is discussion that they are moving towards this). In 2015, the National Association of Tower Erectors formed the National Wireless Safety Alliance to serve as

the official national assessment and certification arm. The ATC tower instructor is currently enrolled in course work to become a certifier so that ATC would be an official examination site for the TT1 national assessment and certification.

- **On-campus housing unavailable**: one of the largest barriers to recruitment mentioned was having no on-campus housing, which has limited marketing the program to primarily local students who can drive-in, or to those who can afford to pay for a hotel during the 9-week on-campus portion. The college has been unsuccessful in securing reduced rates with any hotel, which is generally expensive due to a robust horse industry bringing in tourists and competitors monthly. This challenge will only get more complicated when they expand the program.
- **Lack of opportunities for female students**: the industry is male dominated and only nine female students have gone through the program. One of the female students felt that the reason she was not offered a position upon program completion was because she was female. However, program staff clarified that she was also not old enough to work in the field (which requires field staff to be 21+ years old for liability purposes). Expanding diversity in the field and program will be a barrier to be overcome.
- **Students struggle with life skills**: staff mentioned that students often experience challenges related to life skills, such as showing up on time, being prepared for class, working with technology, and managing finances. Generally, staff noted that the older students often struggle with the technology, while the younger students often struggle with time management strategies. The student success coach often spends time working with students in these areas. One area that was mentioned as potentially needing more attention was counselling students on financial management. According to one staff member, once they leave the program and start making good money, they often do not possess the financial skills to manage the extra income wisely.
- **Not having climbing simulators**: given that many towers in the field are unique and in addition, there are rapidly changing technology on towers, using climbing simulators would be helpful to expose students to the different experiences they may face.
- **Program support:** The loss of the college's President in 2017 was mentioned by some staff, though they did say that there is still senior administrative support. A new President has now been hired and is getting up to speed on the program and related requirements.

III. IMPACT STUDY

IMPACT STUDY METHODOLOGY AND LIMITATIONS

Data were collected by ATC and provided to RTI in deidentified form so that students' privacy was protected. The nature of the data provided necessitated varying somewhat from the analyses originally planned. The data were found to be inadequate for propensity score matching, given the relatively small number of students overall (259), especially after accounting for missing data. This was even more of a problem with respect to subgroups. In addition, the variables that could be used for creating comparison groups with matching were too few and had too little variability to construct valid matches. Fortunately, this possibility was anticipated in our proposal, and we used multiple regression to account for the differences among groups on the variables that we did receive (see Descriptive statistics below).

Outcome data were also greatly limited: RTI did not receive data for employment, salary, or any other post-program outcomes. Among potential outcomes prior to students' leaving ATC, only GPA was found to be sufficiently reliable. Program completion could not be used for the regression analysis as an outcome because it was not apparent why students dropped out or at what point in the term they left.[6] Similarly, information on other certifications obtained by students was not available for the analysis.

We conducted two general types of regression analysis: descriptive modeling and predictive modeling. The descriptive models included only demographic predictors. Their main purpose is two-fold: to demonstrate the extent to which the data fit these basic models, and to show which characteristics were significant predictors of GPA without accounting for group membership. The predictive models showed differences between student groups while controlling for demographic characteristics. The results from these models are intended to address the research questions: Was there a difference in outcomes between TAACCCT Tower program students and the non-TAACCCT students in the Welding program at the same time? and, was there a difference in outcomes between TAACCCT Tower program students and students who were in the Tower program prior to TAACCCT? This latter question is limited in that the number and type of demographic predictors are doubtless insufficient to account for the fact that the earlier Tower students were enrolled several years prior to the TAACCCT students. We interpret the results in this light.

[6] Withdrawal data from enrollment includes any student that initially enrolled in the Basic Tower course, including those that may withdraw before attending one day in the course. Outcomes related to completion rates should be viewed with this limitation in mind.

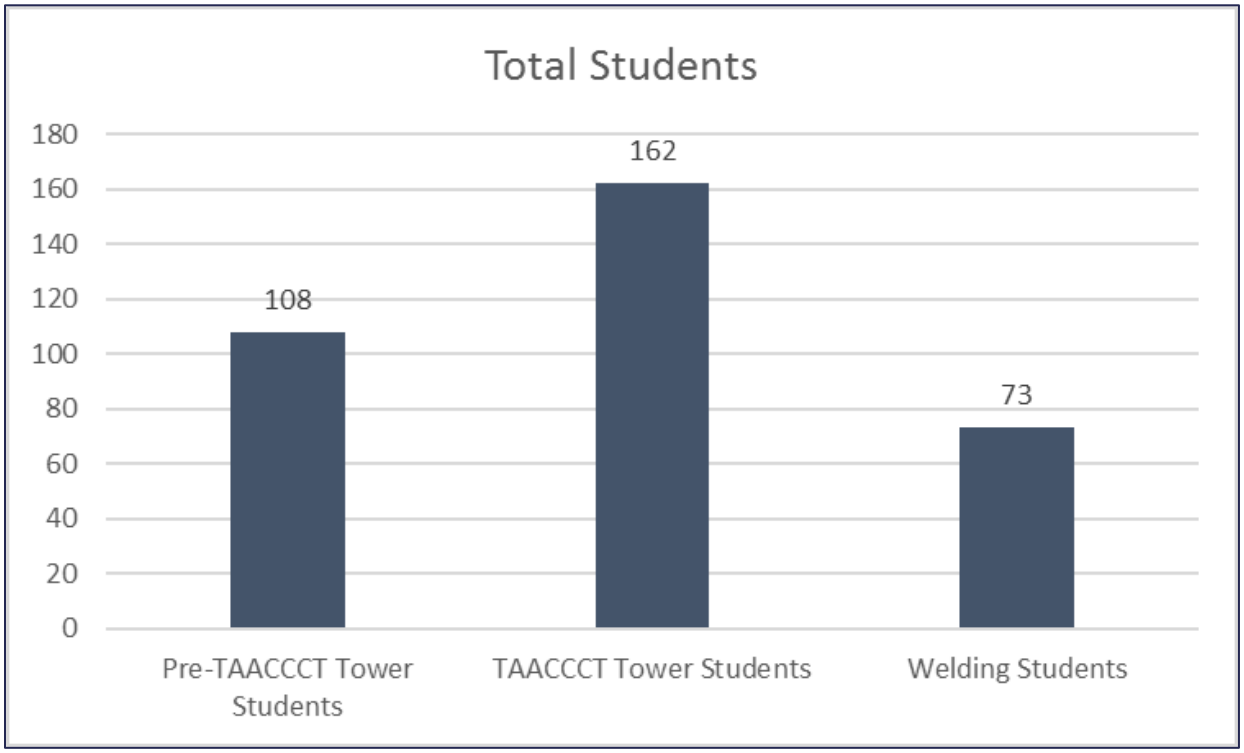
IMPACT STUDY RESULTS

Results and findings of the student administrative data are organized around the two impact evaluation research questions in the following subsections.

IMPACT EVALUATION QUESTION #1: WHAT ARE THE PROGRAM PARTICIPANT CHARACTERISTICS VS. THE COMPARISON GROUP?

Since the beginning of the TAACCCT grant, 162 students have enrolled in the TAACCCT Tower training program, with 116 students either currently enrolled (4) or having graduated from the program (112). The descriptive analysis is divided into three groups: all students (whether in Tower or Welding, TAACCCT or not), students who were in the Tower program prior to TAACCCT implementation, TAACCCT Tower students, and non-TAACCCT Welding students over the same time periods. The total students for each program, including those that withdrawn are provided in **Exhibit O**.

Exhibit O: Student participation by program (including students that withdrew)



The demographic variables made available for the analysis were gender, race, veteran status, and age. **Table 2** provides the counts of students for each of these characteristics, limiting data to current students or those that have graduated. Comparing across groups, it is clear that TAACCCT Tower students differed from other students, particularly with regard to distribution of race and veteran status. That is, there were many more non-white students and many fewer veterans among TAACCCT students. Prior to the TAACCCT grant, ATC was working with an organization that focused on supporting veterans. This partnership ended during the first year of

the grant, which would explain the drop in that number. Age was also different across groups: TAACCCT Tower students tended to be younger than those in the Tower program prior to TAACCCT, while they tended to be older than those in the non-TAACCCT Welding program.

Table 2: Student demographics by program (excludes students that withdrew)

	All Students	Pre-TAACCCT Tower Students	TAACCCT Tower Students	Welding Students
Total	259	83	116	60
Race				
White	104 (40%)	36 (43%)	42 (36%)	26 (43%)
Non-White	155 (60%)	47 (57%)	74 (64%)	34 (57%)
Gender				
Male	239 (92%)	82 (99%)	106 (91%)	51 (85%)
Female	20 (8%)	1 (1%)	10 (9%)	9 (15%)
Age				
Mean	28.38	33.23	29.48	19.53
Standard Deviation	10.48	9.35	10.75	4.24
Veteran Status				
Veteran	64 (25%)	45 (54%)	19 (16%)	0 (0%)
Non-veteran	195 (75%)	38 (46%)	97 (84%)	60 (100%)

IMPACT EVALUATION QUESTION #2: WHAT ARE THE PARTICIPANT OUTCOMES VERSUS STUDENT IN THE COMPARISON GROUP?

The outcomes of the TWI program that were examined were the graduation rates of the students in the Tower program prior to the TAACCCT grant, the students under the TAACCCT funded Tower program, and the students in the comparison Welding. A total of 162 students that enrolled in the TAACCCT funded Tower program, as compared to 108 prior to the funding, and 73 Welding students. There was an overall graduation rate of 73 percent, with the pre-TAACCCT grant students having the highest graduation rate of 75 percent. This may also be related to the program's previous focus on veterans. The graduation rates of the non-veterans in the pre-TAACCCT tower funded program and the TAACCCT funded program are considerably lower, with only a 58 and 67 percent graduation rate, respectively. **Table 3** below provides a breakdown in the number of students that enrolled by status: graduated, withdrew, and current. It also provides the total and percent of students that graduated the respective programs, excluding the current students from the calculation.

Table 3: Breakdown of students enrolled in programs by status

	All Students	Pre-TAACCCT Tower Students	TAACCCT Tower Students	Welding Students
Graduated	222	75	112	35
Withdrew	84	25	46	13
Current	37	8	4	25
Total	343	108	162	73
Percent Graduated (excludes current students)	73%	75%	71%	73%

DESCRIPTIVE MODELS

Each of the descriptive models below predicts students' GPA from demographics alone, and so they cannot be used to infer the effectiveness of the program. Instead, they show the degree to which each characteristic (veteran status, age, sex, race) covaries with GPA. The intercept coefficient estimates represent the average GPA for each group of students, and the coefficient estimates for each characteristic represent the number of grade points by which the average GPA goes up for students with that characteristic. For example, in **Table 4** below for all students (i.e., not accounting for cohort or program), the average GPA overall is 3.01, but veterans scored 3.01 + .1 = 3.11 on average, though this was not a statistically significant amount ($p < .05$). With respect to age, for every year older a student was, his or her GPA increased by .01 points, which was a significant amount.

Table 4: Predicting GPA from demographics—All students

	Estimate	SE	t	p-value
Intercept	3.014874	0.105814	28.492	<0.0001*
Vet	0.09719	0.084117	1.155	0.249176
Age	0.013122	0.003557	3.689	0.000284*
Sex	0.118863	0.130188	0.913	0.362235
Race	-0.08583	0.073077	-1.175	0.241463

Adjusted R-squared: 0.06421
*p-value: 0.0009219**

As the table shows, age was the only significant predictor of GPA when controlling for the other demographic variables. The overall model was also significant, indicating a good fit to the data. In the next two tables, GPA was predicted only for Tower students (both before and after the intervention began) (**Table 5**) and only for students after the intervention began (both Tower and Welding) (**Table 6**), respectively. Neither model had a significant fit, but age was again a significant predictor among Tower students.

Table 5: Predicting GPA from demographics—Pre/Post TAACCCT Tower Students

	Estimate	SE	t	p-value
Intercept	3.217979	0.111423	28.881	<2e-16*
Vet	0.037301	0.075227	0.496	0.6206
Age	0.008863	0.003457	2.564	0.0112*
Sex	0.132585	0.14254	0.93	0.3536
Race	-0.07955	0.071704	-1.109	0.2688

Adjusted R-squared: 0.02466
p-value: 0.0797

Table 6: Predicting GPA from demographics—TAACCCT Tower students and Welding program students

	Estimate	SE	t	p-value
Intercept	3.065604	0.120331	25.476	<2e-16*
Vet	0.058763	0.132531	0.443	0.6581
Age	0.008065	0.004245	1.9	0.0593
Sex	0.174067	0.136167	1.278	0.203
Race	-0.06396	0.088511	-0.723	0.471

Adjusted R-squared: 0.008554
p-value: 0.2565

PREDICTIVE MODELS

The following tables predict GPA from group membership, i.e., TAACCCT participation ("TAACCCT"), whether the student was in the Tower program ("Tower"), and whether the student was in either the Tower or Welding programs before or after TAACCCT implementation. All demographic predictors were retained in all models despite most not being significant, because descriptive statistics indicate that the groups were not equivalent and had very different demographic characteristics. Including the student characteristics in the models allows us to interpret results after accounting for those differences. Across all students (**Table 7**), being an TAACCCT student was a significant predictor of GPA, so that compared to all other students and controlling for all other factors, these students had a GPA on average .3 points lower. Additionally, being in the Tower program, compared to all other students, was associated with a .61 points greater GPA. This model fit the data extremely well.

Comparing only students in the Tower program (**Table 8**), before and after TAACCCT implementation, we see that TAACCCT students had a GPA associated on average with .3 points less than those who preceded them in the program, controlling for other factors. However, despite the strong fit of the model, there is reason to question its interpretation. Note that this comparison is suspect because of the time difference: there may have been a strong cohort effect, meaning that TAACCCT students might have performed just as well as their predecessors if they had gone through the program earlier. It is completely possible that there were student

characteristics, for which we were unable to take into account in this model, that covaried with time period and influenced GPA but were not related specifically to TAACCCT.

Fortunately, we were able to construct a regression model in which TAACCCT Tower students and their comparison group, Welding students, were in their programs simultaneously, eliminating the cohort effect. Between these two groups of students, being a Tower student was associated with a GPA .32 points higher than those in the Welding program (**Table 9**). This result was statistically significant, as was the fit of the model as a whole.

Table 7: Predicting GPA from group—All students

	Estimate	SE	t	p-value
Intercept	2.920192	0.105823	27.595	<2.00E-16*
Vet	-0.08097	0.088479	-0.915	0.361141
Age	0.005466	0.003706	1.475	0.141665
Sex	0.191065	0.124268	1.538	0.125616
Race	-0.04933	0.069875	-0.706	0.480946
TAACCCT	-0.30395	0.087144	-3.488	0.000589*
Tower	0.613111	0.119157	5.145	0.000000594*

Adjusted R-squared: 0.1582
*p-value: 7.894e-08**

Table 8: Predicting GPA from group— Pre/Post TAACCCT Tower Students

	Estimate	SE	t	p-value
Intercept	3.505734	0.130496	26.865	<2.00E-16*
Vet	-0.08442	0.078927	-1.07	0.286272
Age	0.006161	0.003398	1.813	0.0716
Sex	0.192532	0.138018	1.395	0.164812
Race	-0.03985	0.06975	-0.571	0.568555
TAACCCT	-0.30233	0.078174	-3.867	0.000155*

Adjusted R-squared: 0.09708
*p-value: 0.0003703**

Table 9: Predicting GPA from group—TAACCCT Tower students and Welding program students

	Estimate	SE	t	p-value
Intercept	2.981998	0.119332	24.989	<2.00E-16*
Vet	-0.00274	0.129794	-0.021	0.98321
Age	0.00263	0.004429	0.594	0.55348
Sex	0.198098	0.132183	1.499	0.13601
Race	-0.06135	0.085795	-0.715	0.47567
Tower	0.324406	0.097897	3.314	0.00115*

Adjusted R-squared: 0.06853
*p-value: 0.006826**

IV. CONCLUSION

Based on the findings across the multiple data sources, ATC has successfully met their objectives for the TAACCCT funded iSTACC project. The key findings to each of the evaluation questions are highlighted below.

KEY FINDINGS

PROGRAM IMPLEMENTATION FINDINGS BY EVALUATION QUESTION

1. Which program elements were successfully implemented?

- The proposed program elements were successfully implemented, including the creation of stackable credentials for career pathways in the tower installation industry, the development and enhancement of the tower installation training curricula, and the delivery of student support services.
- Stackable credentials are now offered through the TWI program, including Tower Training 1 (TT1), Tower Training 2 (TT2), Tower Training 3 (TT3), and Tower Training 4 (TT4) certificates.
- ATC has been able to sustain the TWI program beyond the grant. The instructor is now being funded by the college and is in the process of getting approved to be an administrator of the TT1 and TT2 certifications.
- Students in the TWI program will continue to receive support services through the college's Workforce Readiness Center.

2. What barriers existed or were encountered?

- Severe flooding in South Carolina during the first year of the grant led to a delay in the procurement of several key program-related items, including curriculum developers, the evaluator (RTI), and the practice climbing tower. However, these items were all acquired within the grant period and should not be a barrier moving forward.
- Challenges still exist with recruitment and placement, including general awareness, financial constraints of students, unique job requirements, lack of industry required certifications, and a void in a recruitment and placement specialist. Strategies for growing the program will need to be identified.

PROGRAM IMPACT FINDINGS BY EVALUATION QUESTION

1. What are the program participant characteristics vs. the comparison group?

- The TAACCCT funded Tower program had the highest percentage of non-white students across all programs (at 64 percent).

- Since receiving TAACCCT funding, the percentage of females engaged in the Tower program has increased (from 1 percent to 9 percent).
- While the average age of the Tower student has decreased since receiving the TAACCCT funding, it is still higher than the average age of Welding students (29.48 and 19.53, respectively).
- The Tower program engages more veterans than the comparable Welding program (16 percent and 0 percent, respectively).

2. What are the participant outcomes versus student in the comparison group?

- 162 students enrolled in the TAACCCT funded Tower training program, with 112 having graduated and receiving their TT1 certificate of completion from ATC and another four students currently enrolled in the program.
- This completion rate of the Tower program is comparable to the Welding program (71 percent and 73 percent, respectively).
- Being a Tower student was associated with a GPA .32 points higher than those in the Welding program.
- Age was the only significant predictor of GPA when controlling for the other demographic variables—with every year of age increasing a student's GPA by .01 point.
- Employment data not available for this evaluation, but future analyses could be conducted.

POTENTIAL FUTURE STRATEGIES FOR PROGRAM SUSTAINMENT

With the recruitment and placement challenges mentioned, ATC needs to identify a new strategy for recruiting students and finding employment placements for their graduates to ensure continued program success. As an example, continuing to engage as a board member of the National Wireless Safety Alliance may help to raise awareness of the training program at ATC as the industry moves towards requiring tower climbing training and certification. The college could also seek a new partner serving veterans to help increase and sustain enrollment. Funding for additional student supports should also be identified.

ATTACHMENT A: STAFF INTERVIEW PROTOCOLS

iSTACC Staff Protocol-Tower Program Director

Background

1. Could you describe your current position at Aiken?
2. What is your background in Tower work (or related fields)?
3. How long have you been involved on the grant?
    a. What are your main objectives or priorities for this coming year?
    b. To what extent have these objectives or priorities changed/evolved since you began working on the grant?

Working with Students

4. *If not already answered in detail:* Can you elaborate on the ways in which you work with students?
5. How would you describe the iSTACC student population in terms of demographics and goals/objectives?
    a. What are some of the primary needs of students (either needs they express or needs you have noticed)?
    b. To what extent do you feel iSTACC is able to meet their needs?

Curriculum

6. To what extent were you involved in the development of the new iSTACC curriculum?
    a. How is this new approach an improvement over what was in place previously?
7. We understand that improving Tower safety was a major impetus for some of the curriculum changes. Can you talk about how the curriculum is addressing tower safety in ways that it wasn't before?
    a. Have you discussed what success will look like in terms of program impact on safety and how you will collect/track this measure?

Working with Related Tower Staff

8. How are you working with other staff (e.g., academic advisors, Student Success Coaches, Recruitment and Placement Specialists, Enrollment management and services, and Student Experience)?
    a. What has been successful about your efforts to collaborate with other Tower staff?
    b. What has been challenging?

Working with Employers (if relevant)

9. *If not already answered:* To what extent are you working with employers as part of your role?
    a. If working with employers: How often do you interact with employers and for what purpose(s)?
    b. What types of data do you collected about your interactions with employers, if any?
        i. If data are collected: How do you collect or store those data?
    c. What are some of the primary needs employers express?
        i. To what extent do you feel iSTACC is able to meet their needs?

College Implementation

10. How prepared do you think Aiken is to support students in the iSTACC program?
    a. What supports or structures were necessary in order to provide the best support?

b. *If applicable*, how effective do you feel program supports such as Smartthinking, MyMathlabs, and Workkeys assessments are in helping students succeed?
c. *If they say they are not prepared:* To your knowledge, what is currently being done to address this at Aiken?
d. What supports or structures are necessary but not yet in place?

Reminder of Proposed Curriculum interventions: New curricula for stackable credentials—Tower Technician I, Tower Technician II, Tower Technician III, and Specialty Skills; online and hybrid delivery of curricula; Participant recruitment strategies; Participant academic support strategies (e.g., development education prep, prior learning assessments, career guidance, other Workforce Readiness Center services; and, participant job placement strategies)

Successes/Challenges

11. What are some of the biggest achievements iSTACC has made since the grant started?
    a. How do you measure achievement and outcomes?
12. Have you had any major setbacks or challenges in what you are trying to accomplish as part of iSTACC?
    a. How have you addressed those challenges?
    b. What support might you need (and from whom) in order to move forward?
13. What aspects of iSTACC have been easiest to implement thus far?
    a. In contrast, what aspects of iSTACC have been most difficult to implement?
14. Is there additional support you need in your role that you are not currently receiving? Who is the best person/entity to provide this support?

iSTACC Staff Protocol-Tower Instructor

Background

1. Could you describe your current position at Aiken and your background in Tower work (or related fields) prior to becoming an iSTACC instructor?
2. How would you describe your role as an iSTACC instructor? How long have you been involved on the grant? *(Confirm whether instructor is online, in-person, or hybrid)*
    a. What are your main objectives or priorities for this coming year?
    b. To what extent have these objectives or priorities changed/evolved since you began working on the grant?

Working with Students

3. *If not already answered in detail:* Can you elaborate on the ways in which you work with students as an instructor?
    a. How often do you interact with students (both in and outside of class?)
        i. What types of data do you collect about your interactions with students, if any?
        ii. If data are collected: How do you collect or store those data?
        iii. To what extent do you or the program use the collected data for evaluation and continuous improvement?
4. How would you describe the iSTACC student population in terms of demographics and goals/objectives?
    a. What are some of the primary needs of students (either needs they express or needs you have noticed)?
        i. To what extent do you feel iSTACC is able to meet their needs?

Curriculum

5. To what extent were you involved in the development of the new iSTACC curriculum?
    a. How is this new approach an improvement over what was in place previously?
6. We understand that improving Tower safety was a major impetus for some of the curriculum changes. Can you talk about how the curriculum is addressing tower safety in ways that it wasn't before?
    a. Have you discussed what success will look like in terms of program impact on safety and how you will collect/track this measure?
7. How prepared is Aiken to support the new curriculum changes that are a part of iSTACC?
    a. What supports or structures are in place to support this implementation change?
    b. If they say they are not prepared: To your knowledge, what is currently being done to address this at Aiken?
    c. What support or structures are necessary but not yet in place?

Working with Related Tower Staff

8. How are you working with other staff (e.g., academic advisors, Student Success Coaches, Recruitment and Placement Specialists, Enrollment management and services, and Student Experience)?
    a. What has been successful about your efforts to collaborate with other program staff?
    b. What has been challenging?

Working with Employers (if relevant)

9. *If not already answered:* To what extent are you working with employers as part of your role?

a. If working with employers: How often do you interact with employers and for what purpose(s)?
b. What types of data do you collected about your interactions with employers, if any?
    i. If data are collected: How do you collect or store those data?
c. What are some of the primary needs employers express?
    i. To what extent do you feel iSTACC is able to meet their needs?

10. Have you had any major setbacks or challenges in what you are trying to accomplish as part of iSTACC?
    a. How have you addressed those challenges?
    b. What support might you need (and from whom) in order to move forward?

Successes/Challenges

11. What are some of the biggest achievements iSTACC has made since the grant started?
    a. How do you measure achievement and outcomes?
12. What aspects of iSTACC curriculum have been easiest to implement thus far?
    a. In contrast, what aspects of iSTACC curriculum have been most difficult to implement?
13. Is there additional support you need in your role that you are not currently receiving? Who is the best person/entity to provide this support?

iSTACC Staff Protocol-Student Success Coach

Background

1. How would you describe your role as it relates to iSTACC? How long have you been involved on the grant?
    a. What are your main objectives or priorities for this coming year?
    b. To what extent have these objectives or priorities changed/evolved since you began working on the grant?

Working with Students

2. *If not already answered in detail:* Can you elaborate on the ways in which you work with students as a Student Success Coach?
    a. How often do you interact with students and for what purpose(s)?
    b. Based on documents we have, one aspect of your role was to develop and design student success solutions in coordination with faculty and the Academic Success Center based on trend data, student success/persistence rates and retention data for online and transitional studies courses for iSTACC students. Can you walk us through what this looks like in practice?
        i. What types of data do you collect about your interactions with students, if any?
        ii. If data are collected: How do you collect or store those data?
        iii. To what extent do you or the program use the collected data for evaluation and continuous improvement?
3. How would you describe the iSTACC student population in terms of demographics and goals/objectives?
    a. What are some of the primary needs of students (either needs they express or needs you have noticed)?
    b. To what extent do you feel iSTACC is able to meet their needs?

Working with Related Tower Staff

4. How are you working with other staff (e.g., Recruitment/Placement specialist, Tower Instructor, Tower program director, academic advisors, Enrollment management and services, and Student Experience)?
    a. What has been successful about your efforts to collaborate with other Tower staff?
    b. What has been challenging?

Working with Employers (if relevant)

5. *If not already answered:* To what extent are you working with employers as part of your role?
    a. *If working with employers:* How often do you interact with employers and for what purpose(s)?
    b. What types of data do you collected about your interactions with employers, if any?
        i. *If data are collected*: How do you collect or store those data?
    c. What are some of the primary needs employers express?
        i. To what extent do you feel iSTACC is able to meet their needs?

College Implementation

6. How prepared do you think Aiken is to support students in the iSTACC program?

a. What supports or structures were necessary in order to provide the best support?
b. *If applicable*, how effective do you feel program supports such as Smartthinking, MyMathlabs, and Workkeys assessments are in helping students succeed?
c. *If they say they are not prepared:* To your knowledge, what is currently being done to address this at Aiken?
d. What supports or structures are necessary but not yet in place?

Reminder of Proposed Curriculum interventions: New curricula for stackable credentials—Tower Technician I, Tower Technician II, Tower Technician III, and Specialty Skills; online and hybrid delivery of curricula; Participant recruitment strategies; Participant academic support strategies (e.g., development education prep, prior learning assessments, career guidance, other Workforce Readiness Center services; and, participant job placement strategies)

Successes/Challenges

7. What are some of the biggest achievements iSTACC has made since the grant started?
    a. How do you measure achievement and outcomes?
8. Have you had any major setbacks or challenges in what you are trying to accomplish as part of iSTACC?
    a. How have you addressed those challenges?
    b. What support might you need (and from whom) in order to move forward?
9. What aspects of iSTACC have been easiest to implement thus far?
    a. In contrast, what aspects of iSTACC have been most difficult to implement?
10. Is there additional support you need in your role that you are not currently receiving? Who is the best person/entity to provide this support?

iSTACC Staff Protocol-Recruitment and Placement Specialist

Background

1. How would you describe your role as it relates to iSTACC? How long have you been involved on the grant?
    a. What are your main objectives or priorities for this coming year?
    b. To what extent have these objectives or priorities changed/evolved since you began working on the grant?

Working with Students

2. *If not already answered in detail:* Can you elaborate on the ways in which you work with students as a Recruitment and Placement Specialist?
    a. How often do you interact with students and for what purpose(s)?
    b. Based on documents we have, one aspect of your role was to recruit students by conducting information sessions at military installations, business and industry sites, and throughout the community. Can you walk us through what this looks like in practice?
        i. What have you learned about best practices in recruitment for this program in this role?
3. What types of data do you collect about your recruitment efforts with students, if any?
    a. If data are collected: How do you collect or store those data?
    b. To what extent do you or the program use the collected data for evaluation and continuous improvement of recruitment and support processes?
4. How would you describe the iSTACC student population in terms of demographics and goals/objectives?
    a. What are some of the primary needs of students (either needs they express or needs you have noticed)?
    b. To what extent do you feel iSTACC is able to meet their needs?

Working with Related Tower Staff

5. How are you working with other staff (e.g., Student Success Coach, Tower Instructor, Tower program director, Marketing and Enrollment Management, Academic departments, and training departments)?
    a. What has been successful about your efforts to collaborate with other Tower program staff?
    b. What has been challenging?

Working with External Partners (Employers and Workforce Investment Boards)

6. *If not already answered:* To what extent are you working with employers and/or WIBs as part of your role?
    a. *If working with employers and/or WIBs:* How often do you interact with employers/WIBs and for what purpose(s)?
    b. What types of data do you collected about your interactions with employers/WIBs, if any?
        i. *If data are collected*: How do you collect or store those data?
    c. What are some of the primary needs employers express?
        i. To what extent do you feel iSTACC is able to meet their needs?

College Implementation

7. How prepared do you think Aiken is to support students in the iSTACC program?
    a. What supports or structures were necessary in order to provide the best support?
    b. *If applicable, h*ow effective do you feel program supports such as Smartthinking, MyMathlabs, and Workkeys assessments are in helping students succeed?
    c. *If they say they are not prepared:* To your knowledge, what is currently being done to address this at Aiken?
    d. What supports or structures are necessary but not yet in place?

Reminder of Proposed Curriculum interventions: New curricula for stackable credentials—Tower Technician I, Tower Technician II, Tower Technician III, and Specialty Skills; online and hybrid delivery of curricula; Participant recruitment strategies; Participant academic support strategies (e.g., development education prep, prior learning assessments, career guidance, other Workforce Readiness Center services; and, participant job placement strategies)

Successes/Challenges

8. What are some of the biggest achievements iSTACC has made since the grant started?
    a. How do you measure achievement and outcomes?
9. Have you had any major setbacks or challenges in what you are trying to accomplish as part of iSTACC?
    a. How have you addressed those challenges?
    b. What support might you need (and from whom) in order to move forward?
10. What aspects of iSTACC have been easiest to implement thus far?
    a. In contrast, what aspects of iSTACC have been most difficult to implement?
11. Is there additional support you need in your role that you are not currently receiving? Who is the best person/entity to provide this support?

ATTACHMENT B: STUDENT FOCUS GROUP PROTOCOL

iSTACC Staff Protocol-Student Focus Group Protocol

Background

Have each person in the focus group introduce themselves and ask each to respond to the following:

1. What were you doing prior to enrolling in this program?
    a. How did you hear about iSTACC and what motivated you to enroll in this program?
    b. Did you consider other programs before ultimately deciding on this one? If so, what were they?
        i. What ultimately made you select this program over the others you were considering?
2. What are your goals for this program? What certificates/degrees do you intend to complete?

Experience in the Classroom

3. Can you describe what a typical day in the TT1 Tower course is like?
        i. What do you like about the program coursework, specifically?
        ii. How could the program coursework better address your needs?
4. What is your coursework like? Is it easier, harder, or similar to what you expected before starting this program?
5. Do you feel that safety procedures have been sufficiently addressed during your coursework?
6. When you have a question about coursework, to whom do you look to for support (e.g., other students, teacher, other Tower support staff)?
7. How frequently do you meet with your cohort or other students?
    a. In what ways do you support one another?
    b. Is this cohort experience similar or different from previous college experiences you may have had?

Access and Use of Related Support Services

8. By a show of hands, can you confirm whether you have used or currently used the following support services at Aiken? For each support service, ask the following questions:
    a. Did you find [support service] helpful? If so, how? If not, why not?
    b. Do you have any suggestions about how to improve [support service]?

        Support Services:

        i. Prior Learning Assessments
        ii. Counseling/Advising through the College's Workforce Readiness Center
        iii. Job placement services
        iv. Online bootcamps (e.g., SmartThinking, MyMathLabs, English support, Workkeys assessments)

Working with Tower Staff

9. To what extent have you worked with the iSTACC Student Success Coach [Confirm name of SSC prior to interview]?
    a. If you have worked with the Student Success Coach, can you explain how you work (or worked) with this person?
    b. What has been most beneficial about working with the Student Success Coach?
    c. Have there been any challenges in working with the Student Success Coach?

    d. Do you have recommendations about how to make this position more useful to you as a student?
10. To what extent have you worked with the iSTACC Recruitment and Placement Specialist [confirm name of RPS prior to interview]?
    a. If you did meet/work with the Recruitment and Placement Specialist, can you describe what your interaction(s) was/were like?
    b. What was most beneficial about working with the Recruitment and Placement Specialist?
    c. Were there any challenges in working with the Recruitment and Placement Specialist?
    d. Do you have recommendations about how to make this position more useful to you as a student?

Successes/Challenges

11. What are some of the biggest achievements you have made since starting the iSTACC program?
    a. To what do you attribute these achievements (e.g., instructor or other staff support, support from cohort, etc.)?
12. What are some of the biggest challenges you have encountered since starting the iSTACC program?
    a. Have you successfully overcome them? How?
    b. If not, is there additional support you need in your role that you are not currently receiving? Who is the best person/entity to provide this support?

ATTACHMENT C: STUDENT SURVEY

Tower and Wireless Installation (TWI) Former Student Feedback Survey

Aiken Technical College has contracted with RTI International, a nonprofit research firm based in North Carolina, to conduct an evaluation of the program you participated in or completed, Aiken's Tower and Wireless Installation (TWI) program. Your survey answers will help TWI staff learn what is going well and where they need to improve. Your voice is important for this project and we appreciate the time you are taking to share your feedback with us.

The survey is expected to last about 10 minutes. Your participation is entirely voluntary, and you may decline to answer a question or discontinue your participation at any time. Your responses are confidential, and you will not be identified in any reports or findings. If you have concerns or questions about this survey, please contact Jessica Robles at jrobles@rti.org or 503-428-5675.

By beginning the survey, you acknowledge that you have read this information and agree to participate, with the knowledge that you are free to withdraw your participation at any time.

Introduction

1. How did you learn about Aiken's Tower and Wireless Installation (TWI) program?
   - ☐ Through an advisor at Aiken's Workforce Readiness Center
   - ☐ A recruiter
   - ☐ Another student
   - ☐ Other (please describe.):
2. What made you want to sign up for the TWI program? (Check all that apply.)
   - ☐ I wanted to get a higher-paying job
   - ☐ I wanted to get a new job
   - ☐ I wanted to get safety training in the tower installation field
   - ☐ I enjoy climbing.
   - ☐ I enjoy traveling for a job.
   - ☐ I am interested in cellular/wireless technology
   - ☐ Other (Please describe.):

Access and Use of Related Support Services

3. Which of the following support services did you use while you were a student in the TWI program? (Check all that apply.)
   - ☐ Prior Learning Assessments
   - ☐ Counseling/Advising through the College's Workforce Readiness Center
   - ☐ Job placement services
   - ☐ Online bootcamps (e.g., SmarterMeasures, MyMathLabs, English support, Workkeys assessments)
   - ☐ I did not use any support services.
   - a. [For each checked box] How would you rate your level of satisfaction with [insert name here]?
     Scale: Extremely satisfied; Very satisfied; Somewhat satisfied; Not at all satisfied.
     - i. [For "Somewhat" or "Not at all" satisfied answers]: What could have been improved?

Program Safety

4. Please rate the quality of each of the following elements of the safety training in which you participated while a TWI student.

	Very poor	Poor	Good	Very Good	I did not take this training.
a. In-person Classroom Training	1	2	3	4	0
b. Online training	1	2	3	4	0
c. Tower Field training	1	2	3	4	0

5. How well do you think the safety training offered as part of the TWI program prepared you for employment in the tower industry?
   Scale: Extremely well; Very well; Somewhat well; Not well at all; I did not take safety training.

Program Feedback

5. Please rate your level of agreement with each the following elements regarding the TWI program:

	Strongly Disagree	Disagree	Agree	Strongly Agree	Not Applicable
a. The TWI program was clearly explained to me when I started.	1	2	3	4	0
b. I learned a lot from the TWI program instructors.	1	2	3	4	0
c. I had the support I needed **from other students in my cohort** to succeed in the TWI program.	1	2	3	4	0
d. I had the support I needed **from the TWI support staff** to succeed in the TWI program.	4	3	2	1	0
e. As a result of the TWI program, I feel prepared to safely conduct tower work.	1	2	3	4	0
f. As a result of the TWI program, I am now eligible for a job that pays more than my current or last job.	1	2	3	4	0
g. As a result of the TWI program, I feel ready for a job with more responsibility than my current or last job.	1	2	3	4	0

a. [If 5g is answered with “strongly agree” or “agree”]: Which TWI support staff did you work with the most?

- ☐ The Student Success Coach
- ☐ The Recruitment and Placement Specialist
- ☐ One or more TWI instructors
- ☐ A guidance counselor at Aiken
- ☐ Other (please describe.)_____

6. How would you rate the pacing of the TWI program overall? Please check the statement that best reflects your experience.

- ☐ The program was too challenging and I had a hard time keeping up.
- ☐ The program was very challenging, but it was not problematic.
- ☐ The program was appropriately challenging.
- ☐ The program was very easy, but it was not problematic.
- ☐ The program was too easy and I did not feel very challenged.

7. How would you rate the time it took to complete the TWI program? Please check the statement that best reflects your experience.

- ☐ The program took more time than I had expected, but it was not problematic.
- ☐ The program took an appropriate amount of my time.
- ☐ The program took less time than I had expected, but it was not problematic.

8. What did you find least useful about the TWI program?

9. What did you value most about the TWI program?

Employment

10. Did you have a job when you started the TWI program?

☐ Yes

☐ No

a. [If Question 10 = YES] How much were you paid at this job? Please enter the dollar amount, then indicate whether that is per hour, per month, or per year.
$_____._____ Per hour/Per month/Per year

11. What is your current employment situation? (check one)

☐ Employed and looking for another job ***(go to question 13-18, then to 19)***

☐ Employed, NOT looking for another job ***(go to question 13-16, then skip to 19)***

☐ Unemployed and looking for a job ***(go to question 17)***

☐ Unemployed, NOT looking for a job **(*go to question 19*)**

12. Are you currently employed as a tower installation technician?

    ☐ Yes

    ☐ No

13. Who is your current employer? _____

14. What is your job title? _____

15. When did you start this job? _____

16. How much are you currently being paid? Please enter the dollar amount, then indicate whether that is per hour, per month, or per year.

    $_____._____ Per hour/Per month/Per year

Please complete questions 17 and 18 if *only* if you are looking for another job:

17. Are you looking for a job in the cellular/wireless tower installation industry? (Please check one.)

    ☐ Yes

    ☐ No

18. If you are not looking for a job in the cellular/wireless tower industry, what type of job are you looking for?

Demographics

19. What is your gender?

    ☐ Male

    ☐ Female

    ☐ I prefer not to answer.

20. What is the highest degree or level of school you have completed?

    ☐ Some high school, no diploma
    ☐ High school graduate, diploma, or the equivalent (for example: GED)
    ☐ Some college credit, no degree
    ☐ Associate degree
    ☐ Bachelor's degree
    ☐ Master's degree
    ☐ Professional degree
    ☐ Doctorate degree

21. What other certifications or similar programs have you completed?

22. Which of the following described your ethnicity?
    - ☐ Hispanic or Latino
    - ☐ Not Hispanic or Latino
    - ☐ I choose not to answer.
23. Please indicate one or more races that apply to you.
    - ☐ American Indian or Alaska Native
    - ☐ Asian
    - ☐ Black or African American
    - ☐ Native Hawaiian or Other Pacific Islander
    - ☐ White
    - ☐ I choose not to answer.
24. What is your age? Check one.
    - ☐ 17 or under
    - ☐ 18-24 years old
    - ☐ 25-34 years old
    - ☐ 35-44 years old
    - ☐ 45-54 years old
    - ☐ 55+ years old
25. Did you graduate from the TWI program?
    - ☐ Yes
    - ☐ No

23. Are you currently enrolled in Tower II prerequisite classes?
    - ☐ Yes, I am currently taking the classes needed to enroll in the Tower II certificate program.
    - ☐ No, but I have plans to take the classes needed to enroll in the Tower II certificate program.
    - ☐ No, and I do not have plans to enroll in the Tower II certificate.

Thank You!

ATTACHMENT D: EMPLOYER INTERVIEW PROTOCOL

Employer Interview Protocol

RTI International

Interview purpose: We are contacting employers who have hired recent graduates of Aiken Technical College's (ATC) ***Tower and Wireless Installation program (TWI)*** to gather information on the level of input employers may have into these college programs, and their experiences with the applicants and workers hired from these programs. The interview is voluntary, and your answers will provide important feedback that will help ATC and the tower program learn what is going well and where things may need to improve.

Confidentiality: The interview is being conducted and data analyzed by an independent evaluator, RTI International. RTI keeps your responses anonymous and stores any identifying information separately from your answers. RTI presents data to the colleges in summary report format only.

Questions: We'll start with a few questions about your organization and then will move more specifically to the TWI program at ATC.

1. What type of business is your company?
   ☐
2. Overall, how many people does your company currently employ?
   - ☐ 1-9
   - ☐ 10-19
   - ☐ 20-49
   - ☐ 50-99
   - ☐ 100-249
   - ☐ 250+
3. Where is your business located? [and how far is that from ATC?]
   ☐
4. How/when did you (or your organization) first hear about the TWI program at ATC?
   ☐
5. Who are/were your primary contacts at ATC?
   ☐
6. How often do you communicate with any of your contacts at ATC?
   - ☐ Once a week
   - ☐ Once a month
   - ☐ A few times a year
   - ☐ Twice a year
   - ☐ Once a year
   - ☐ Other (Specify)_____
7. Are you a member of the TWI program's advisory committee?

8. Did you provide any input or feedback on the TWI program curriculum during its development? What are some of the key features of the curriculum that are important to your organization?

9. Has your company hired anyone from the TWI program at ATC?
    - ☐ If so:
        i. How many graduates have you hired?
        ii. How many still work for you today? (If you are not sure, please give us your best guess.)
        iii. What is the typical job title of a new hire from the TWI program at ATC?
        iv. What is the typical starting salary of a new hire from the TWI program at ATC?
        v. What type of credentials would you prefer your tower climbers to have? (e.g. certification, associates degree, etc?)

OK, I'm going to read a series of statements related to the qualities of the climbers that graduate from the TWI program. Please reply with 'strongly disagree, disagree, agree, or strongly agree'. Your responses should be based on your knowledge of your company's employees who were trained in the TWI program at ATC.

10. This program provides climbers…	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable
a. …who are productive and ready to work on day one.	☐	☐	☐	☐	☐
b. …who technically competent to perform necessary activities.	☐	☐	☐	☐	☐
c. …who demonstrate a stronger awareness for safety (in comparison to other applicants).	☐	☐	☐	☐	☐
d. …who can communicate clearly orally (in comparison to other applicants).	☐	☐	☐	☐	☐
e. …who can communicate clearly in writing (in comparison to other applicants).	☐	☐	☐	☐	☐
f. …who show career advancement potential (in comparison to other applicants).	☐	☐	☐	☐	☐

11. Has your company ever sent any of its current employees to ATC for training?

12. Do you have any further comments or have any suggestions for ways to improve the TWI program at ATC?