Third-Party Evaluation of the Implementation of the National Information, Security & Geospatial Technologies Consortium (NISGTC)

September 2015
The Office of Community College Research and Leadership (OCCRL) was established in 1989 at the University of Illinois at Urbana Champaign. Our primary mission is to provide research, leadership, and service and assist in improving the quality of education in the Illinois Community College System. Projects of this office are supported by the Illinois Community College Board (ICCB) and the Illinois State Board of Education (ISBE), along with other state, federal, and private and not for profit organizations. The contents of our publications do not necessarily represent the positions or policies of our sponsors or the University of Illinois. Comments or inquiries about our publications are welcome and should be directed to occrl@illinois.edu. This document can be found on the web at: http://occrl.illinois.edu/files/Projects/TAAP/taaccctImplementation.pdf.

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Office of Community College Research and Leadership
University of Illinois at Urbana-Champaign

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INTRODUCTION

The Office of Community College Research and Leadership (OCCRL) is the third-party evaluator of the National Information, Security, Geospatial Technologies Consortium (NISGTC), a round one Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant. NISGTC is comprised of National Science Foundation Advanced Technological Education (ATE) Centers and other leading colleges and national strategic partners whose purpose is to expand and enhance a variety of innovative education and training strategies in the Information Technology (IT) industry. Seven colleges make up NISGTC, and they are:

- Bellevue College, Bellevue, WA
- Bunker Hill Community College, Boston, MA
- Collin College, Frisco, TX (NISGTC lead)
- Del Mar College, Corpus Christi, TX
- Moraine Valley Community College, Palos Hills, IL
- Rio Salado College, Tempe, AZ
- Salt Lake Community College, Salt Lake City, UT

According to the proposal, the major goals of NISGTC were to “expand and improve each consortium member’s ability to deliver quality education and training programs that will result in skills, degrees, and credentials that prepare program participants for high-wage, high-demand occupations.” As specified in the NISGTC’s scope of work, programs of study in four IT disciplines were selected to receive grant funding:

- Programming
- Network and data communications systems
- Geospatial technologies
- Cybersecurity

These programs and the services provided by this consortium were targeted to reach the following student subgroups: a) TAA eligible students, b) under-represented populations in the IT industry, c) low-skilled students, d) displaced and unemployed workers, e) veterans, and f) other student populations.

In order to achieve the overarching goals of NISGTC, the consortium focused its efforts on eight key strategies, with each partner focusing on the strategies that matched their college’s needs and goals. These strategies are:

- Strategy 1.1 – Enhance/Expand Outreach
- Strategy 1.2 – Web-enabled Bridge Curriculum
- Strategy 2.1 – Create and Enhance Retention Services and Tools Using Social Media
- Strategy 2.2 – Align Competencies for Articulation
- Strategy 3.1 – Engage Industry Leadership to Align Skills and Competencies
- Strategy 3.2 – Develop and Deliver New and Enhanced IT Curriculum and Instruction
- Strategy 3.3 – Strengthen Career Pathways and Create Industry-Recognized IT Credentials
- Strategy 4.1 – Strengthen Online and Tech enabled Training
Additionally, NISGTC identified specific activities that relate to each strategy. For example, three activities were listed in the NISGTC scope of work under Strategy 4.1:

- (4.1.1) Leverage and deploy > 100 new online open-source IT courses using the Department of Energy’s NTER open-source platform, and evaluate their effectiveness;
- (4.1.2) Create and deliver Virtual Lab Curricula and install Virtual Lab platform for consortium partners and their affiliated colleges, and;
- (4.1.3) Create and deliver Virtual Mentoring, Virtual Internships and Virtual Externships as part of an employer-led capstone project course.

In sum, 14 activities were included in the NISGTC scope of work, and each activity also related to one or more deliverables that the consortium intended to be produced from that activity.

OCCRL’s evaluation of NISGTC involves two major components: a) implementation evaluation, and b) outcomes evaluation, based primarily on performance reporting that OCCRL conducted in collaboration with Collin College to meet Department of Labor (DOL) requirements. This evaluation report focuses on the first of these two components, an evaluation of the strategies consortium members used to implement NISGTC reforms, promising practices that emerged during implementation, and challenges institutions encountered.

This report starts with an overview of the implementation evaluation, which includes the methods utilized by OCCRL in this study and our evaluation of the primary strategies institutions employed in their implementation of NISGTC. The second section is a list of the stakeholders that were engaged during this evaluation process. The third section highlights promising practices at each co-grantee colleges in NISGTC. The fourth section highlights challenges that colleges faced in their implementation of grant-funded programs of study and strategies. The sixth and final section highlights three major recommendations in light of the need for grantees to build capacity and sustain changes brought about through the TAACCCT grant.
IMPLEMENTATION EVALUATION

Implementation evaluation is an important element of the third party evaluation of any TAACCCT grant, and OCCRL was contracted to conduct the evaluation of the NISGTC colleges’ implementation of the grant-funded strategies and programs of study. OCCRL approached this task by reviewing the NISGTC scope of work, which included the eight primary strategies and 14 key activities listed above, and specifically the Memoranda of Understanding (MOUs) enacted between each NISGTC college and Collin College, the NISGTC lead. Our evaluation was designed to collect both qualitative and quantitative evidence on the extent to which each NISGTC college had implemented activities related to the eight primary strategies. However, throughout the implementation evaluation, NISGTC colleges would often underscore the importance of additional activities that were not explicitly mentioned in the proposed scope of work. For example, many colleges pointed to the benefits derived from partnerships with affiliate community colleges in order to support the NISGTC strategies. OCCRL therefore documented these supplemental activities as well during its implementation evaluation. Two rounds of campus site visits were conducted as part of the data collection process. The first round was conducted between January 2013 and April 2013, representing implementation after the first full year of funding and corresponding to the original midpoint of the grant. This round of site visits served to: 1) document implementation of programs of study and strategies at the original mid-point of the grant, and 2) provide formative information to the colleges, including recommendations for improvement.

A final round of site visits was conducted during the period of July through September 2014, which parallels the last quarter of the third year of the TAACCCT grant. While this was the final year of the grant in the initial proposal, NISGTC received a no-cost extension (NCE) from DOL for an additional year of the grant. The focus of this additional year was to expand enrollment, support existing students through graduation and employment, and finish capacity-building efforts. Findings presented in this report are primarily reflective of what was learned about implementation by OCCRL over the course of the grant, drawing on qualitative data from the first and second round of site visits. These data were triangulated with information reported by the consortium to the DOL in quarterly and annual performance reports. Significant activities implemented in the fourth year of the grant and shared with OCCRL by the consortium grant leadership are included when they help to provide a comprehensive picture of implementation in association with the grant.

The NISGTC co-grantee colleges involved in the consortium and the dates of their evaluation site visits is shown in Table 1.

Table 1. On campus site visit dates by college

<table>
<thead>
<tr>
<th>College</th>
<th>Interim Site Visit</th>
<th>Final Site Visit</th>
<th>OCCRL’s Onsite Evaluation Team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bellevue College</td>
<td>02/11/2013 – 02/12/2013</td>
<td>08/19/2014 – 08/20/2014</td>
<td>Debra Bragg (lead) Catherine Kirby</td>
</tr>
<tr>
<td>Bunker Hill Community College</td>
<td>03/25/2013 – 03/26/2013</td>
<td>09/09/2014 – 09/10/2014</td>
<td>Catherine Kirby (lead)</td>
</tr>
<tr>
<td>Collin College</td>
<td>01/17/2013 – 01/18/2013</td>
<td>07/14/2014 – 07/15/2014</td>
<td>Jeffrey Flesher Donna Tonini</td>
</tr>
<tr>
<td>Del Mar College</td>
<td>03/20/2013 – 03/21/2013</td>
<td>09/02/2014 – 09/03/2014</td>
<td>Debra Bragg (lead) Heather Fox Donna Tonini</td>
</tr>
<tr>
<td>Moraine Valley Community College</td>
<td>03/27/2013</td>
<td>09/11/2014 – 09/12/2014</td>
<td>Jeffrey Flesher (lead)</td>
</tr>
</tbody>
</table>

OCCRL, University of Illinois at Urbana-Champaign
In addition to the evaluation of progress toward key implementation activities, OCCRL identified promising practices that emerged during the first three years of the grant. These promising practices were initially self-identified by the co-grantee colleges and then assessed by the OCCRL team using site visits and other confirmatory methods designed to triangulate results. The implementation evaluation also focused on documenting challenges that complicated implementation of the grant. In all cases, the OCCRL team examined these challenges and confirmed their existence with college personnel prior to including them in either the college and consortium implementation evaluation report. Finally, each college’s site report provided a short list of recommendations intended to improve program of study and strategy implementation and enhance the sustainability these programs and strategies. These recommendations were vetted with each college, and the college personnel indicated they understood the recommendations before they were included in the college and consortium implementation evaluation report.

Data on each college’s implementation of programs and strategies was collected and analyzed from multiple sources. To prepare for each site visit, members of the OCCRL evaluation team:

- Reviewed and analyzed the consortium’s quarterly and annual reports.
- Reviewed and analyzed the consortium and colleges’ scope of work documentation as documented in a Memorandum of Understanding contract between each co-grantee college and Collin College, the NISGTC lead college.
- Conducted a tailored telephone interview with each co-grantee college project team approximately one month prior to conducting a site visit.
- Customized on-site evaluation tools and templates to ensure that data gathered during the site visit aligned fully with key implementation activities at the college and promising practices identified by the college.
- Reviewed artifacts that were posted to the NISGTC website, Basecamp site, co-grantee websites and in related social media outlets (e.g. Twitter, Facebook, LinkedIn). Gathered data through two site visits through a series of one-on-one and group interviews, observations (including technical facilities and equipment), and where feasible, on-site visits to workforce and employee partners.

Each approximately two-day on-site visit generally involved interviewing 30-40 persons in total, including college administrators, faculty and staff, including career coaches and tutors; partners and stakeholders; students and graduates; and others who are affiliated in the grant. Additionally, the on-site visits often included interviews with college personnel who were not funded by the grant but who may have been in a position to sustain grant-funded strategies and programs of study once the grant had ended. A full description of the stakeholders engaged in this evaluation is provided in the next section of this report. Members of the OCCRL evaluation team also reviewed and analyzed artifacts that were obtained during the on-site visits and served as evidence of program and strategy implementation including such items as student service logs, curriculum materials, recruitment (e.g. posters), program materials (e.g. curriculum plans), procedural manuals, and meeting minutes.

Following the on-site visits, the OCCRL evaluation team prepared an implementation report for each co-grantee college. These site reports were shared with college leaders and their grant team members to obtain feedback on the report contents via email and a telephone conference call. Efforts were made to revise reports to ensure that OCCRL described the implementation of the SOW activities accurately, keeping in mind the importance of maintaining a balance between the internal perspectives of grantees.
and the external perspectives of the third party evaluator. The site reports were then shared with the lead college for additional input and this comprehensive report was prepared for submission to the Department of Labor at the end of the grant period.

A summary of OCCRL’s evaluation of the colleges’ implementation activities is included in Appendix A. This table describes the evidence supplied by the college or otherwise gathered through OCCRL’s evaluation for each college’s implementation of the key strategies. As substantive evidence of strategy implementation was not identified for every strategy at every college, the table only lists the strategies for which evidence was found at that institution. This table also describes evidence of activities that colleges described as central to the implementation of NISGTC at their institution, even if those activities were outside the formal scope of work.

**STAKEHOLDERS INVOLVED IN THE EVALUATION PROCESS**

**OCCRL evaluators.** The entire OCCRL evaluation team played a central role in planning, coordinating, and implementing the on-site visits. Teams of two to four evaluators visited each co-grantee college, with one of these individuals identified as the team leader.

**Co-grantee college’s NISGTC team.** Many members of each co-grantee’s NISGTC team were included in interviews during the site visits. They participated in individual and/or group interviews, based on an agenda developed collaboratively in advance between the OCCRL team leader and the site’s Program Director. Program Directors played a critical role in developing the agenda and arranging the interviews that took place during the visit. Co-grantee TAACCCT team members who were interviewed included:

- The Program Director who served as the point person representing the co-grantee’s college,
- College Administration including President, Vice President(s), Dean(s), etc. who provided administrative direction for the project,
- Faculty who taught courses within TAACCCT-impacted programs of study,
- Career Coaches1, also sometimes referred to as Student Success Coaches or Career Navigators, who provided advisory and other support services to students enrolled in TAACCCT-impacted programs of study,
- Tutors who provide academic tutoring support to students enrolled in TAACCCT-impacted programs of study,
- Data Managers and Institutional Researcher who were responsible for collecting and reporting student and program data to the Department of Labor in collaboration with OCCRL.

**Students.** OCCRL evaluators included students who enrolled in the TAACCCT-impacted programs of study primarily by interviewing them in small groups during the site visit. These interviews focused on students’ prior and current experiences in the program.

**Employer and community-based organizations.** Employer and community partners who participated in the planning and implementation of the grant and/or who anticipated hiring graduates of the TAACCCT-impacted programs of study were interviewed.

**Workforce partners.** Workforce partners from local or area Workforce Investment Boards and related government agencies were interviewed about their involvement and support of the grant.

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1 The title Career Coach is used throughout the report for this role; however, it should be noted that the title used for these individuals varied among the NISGTC colleges.
OVERVIEW OF NISGTC COLLEGES

The purpose of this section is to provide a brief overview of the colleges that make up NISGTC. Table 2 provides an overview of the total number of enrollments and calculated full-time equivalent enrollment as reported in the college’s Integrated Postsecondary Education Data System (IPEDS) reports. This is followed by a brief description of each NISGTC college.

Table 2. Overview of overall enrollments at NISGTC colleges

<table>
<thead>
<tr>
<th>NISGTC College</th>
<th>2011-2012 Enrollment</th>
<th>2011-2012 Calculated FTE</th>
<th>2012-2013 Enrollment</th>
<th>2012-2013 Calculated FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bellevue College</td>
<td>22,452</td>
<td>11,209</td>
<td>21,950</td>
<td>10,940</td>
</tr>
<tr>
<td>Bunker Hill Community College</td>
<td>18,746</td>
<td>8,470</td>
<td>19,365</td>
<td>8,814</td>
</tr>
<tr>
<td>Collin College</td>
<td>41,222</td>
<td>17,859</td>
<td>41,751</td>
<td>18,044</td>
</tr>
<tr>
<td>Del Mar College</td>
<td>16,453</td>
<td>5,692</td>
<td>15,260</td>
<td>5,213</td>
</tr>
<tr>
<td>Moraine Valley Community College</td>
<td>33,209</td>
<td>12,681</td>
<td>29,869</td>
<td>12,008</td>
</tr>
<tr>
<td>Rio Salado College</td>
<td>56,031</td>
<td>14,263</td>
<td>52,685</td>
<td>15,333</td>
</tr>
<tr>
<td>Salt Lake Community College</td>
<td>48,876</td>
<td>21,634</td>
<td>47,599</td>
<td>20,797</td>
</tr>
</tbody>
</table>

Source: 2011-2012 and 2012-2013 IPEDS reports retrieved from the IPEDS Data Center

Bellevue College

Bellevue College is located in Bellevue, Washington, within the Seattle metropolitan region where the Information Technology industry is booming with job opportunities. As stated by college and employer partners, there were approximately 25,000 unfilled positions in the Information Technologies (IT) industry within the greater Puget Sound region. As a designated Center of Excellence in IT for the Community and Technical Colleges in Washington State, Bellevue was a well-positioned leader of postsecondary education and training locally and regionally. Bellevue was the lead for the technology-enabled recruitment and retention aspects of the grant and co-lead in the programming specialties area.

Bunker Hill Community College

Bunker Hill Community College is a multi-campus institution in a dense urban setting with locations situated near Boston’s medical centers, biotech and high tech industries and financial hub, offering both students and faculty broad access to healthcare, business and technological opportunities. Bunker Hill had leveraged its close proximity to Boston’s business and industry community through its relationship with Broadening Advanced Technological Education Connections (BATEC), a National Science Foundation (NSF) Advanced Technological Education national center focused on computing and information technologies (BATEC, 2010). BATEC is headquartered at the University of Massachusetts in Boston, Massachusetts. Bunker Hill was the lead for the entrepreneurship aspects of the grant and co-lead in the programming specialties area.

Collin College (lead college)

Collin College was the lead college in NISGTC. Collin is the home of the National Science Foundation National Convergence Technology Center giving the college considerable national presence in IT. IT and related technologies were a predominant focus of employers in this fast growing region of the state, making Collin a logical provider of postsecondary education and training locally and regionally, as well
as a well-positioned leader of NISGTC. Collin’s district is large, representing the fastest growing county in Texas, Collin County, with an estimated population of 812,226. Major employers of IT that were affiliated with the Collin and NISGTC included AMX, Comerica Bank, Dell and CISCO. Collin was both the consortium’s lead college, the lead in the networking and data communications area, boot camps, new articulation agreements, and for virtual internships/externships.

**Del Mar College**

*Del Mar College* serves communities in the Texas Coastal Bend area. Established in 1935, Del Mar has two campuses located in Corpus Christi. NISGTC grant activities at Del Mar were primarily located on the East Campus. In addition to the two main campuses, two other centers serve business and community needs and offer selected courses to students in the Northwest Corpus Christi area. Del Mar was host to the National Geospatial Technology Center of Excellence (GeoTech Center). The Center was funded by the National Science Foundation Advanced Technological Education grant at Del Mar though August of 2013, since which time the Center has been hosted by Jefferson Community and Technical College. Del Mar was the co-lead with Salt Lake Community College for the geospatial technologies area.

**Moraine Valley Community College**

*Moraine Valley Community College* is the second largest community college in Illinois, serving a suburban Chicago district of 26 communities and 388,000 residents. Moraine Valley offers about 115 certificate and degree programs. Moraine Valley serves as a training center for the Center for Systems Security and Information Assurance, a Palos Hills, Illinois (Greater Chicago) National Resource Center serving colleges in seven states in the field of cybersecurity. The Center for Systems Security and Information Assurance is a National Science Foundation Advanced Technological Education Center and one of the National Security Resource Centers. Moraine Valley was the lead for the cybersecurity area and implementation of the virtual labs.

**Rio Salado College**

*Rio Salado College* is located in Tempe, Arizona, within the Phoenix metropolitan region and one of 10 community colleges in the Maricopa County Community College District. Established in 1978, Rio Salado is the largest of the ten colleges in the district. As a NISGTC co-grantee, Rio Salado leveraged its strength as an on-line college with national course delivery expertise. Its role within NISGTC was to “create a compressed curriculum and student support model to offer a bridge for career path training that will allow TAA program participants and other low-skilled unemployed workers to accelerate program training specific to information technology” (NISGTC proposal, Part III Consortium Agreement Letter, p.2). Rio Salado was the lead in development of online courses and the bridge to IT curriculum.

**Salt Lake Community College**

*Salt Lake Community College* is the only community college and the largest two-year institution in Utah. The college has 13 sites located in the Salt Lake City area, with the NISGTC Programs of Study being located on the Taylorville Redwood Campus. Salt Lake offers educational opportunities in over 120 program areas and is accredited by Northwest Commission on Colleges and Universities. Whereas the college maintains a large transfer function with approximately 50% of Salt Lake students matriculating to a four-year college, the focus on workforce training is growing. Salt Lake was a member of the Competency-Based Education Network consortium. Through this grant and a new Round 4 TAACCCT grant, Salt Lake is working to systemically introduce competency based education into all of its technology programs. In addition to the Round 4 grant, Salt Lake received a separate Round 1 grant and a Round 2 TAACCCT grant. Salt Lake was the co-lead with Del Mar College for the Geospatial technologies area.
PROMISING PRACTICES

OCCRL identified promising practices and strategies that emerged over the course of the grant. These promising practices/strategies were initially self-identified by the co-grantee colleges during a pre-site visit phone interview with each college. OCCRL used the information obtained in this pre-site visit phone interview to modify the interview protocol for that college to ensure that appropriate stakeholder groups were engaged around the promising practices. Additionally, colleges were asked what evidence they had about the implementation of these promising practices and when possible this evidence was reviewed by the OCCRL team. The data provided via interview and evidence provided were triangulated. The following provides a brief overview of these practices and strategies at each NISGTC college.

Promising Practices at Bellevue College

The OCCRL evaluation team identified the following four promising practices related to Bellevue’s implementation of the NISGTC initiative a) grant personnel teamwork, Co-location and partnership with Everett Community College (affiliate college), b) career navigation services, c) employer engagement, and d) virtual technology. These promising practices and strategies are discussed in more detail below.

Grant personnel teamwork, co-location, and partnership with Everett Community College (affiliate college). The offices of the Project Director and two Career Coaches are located in the Institute for Business and Information Technology (IBIT) building. This co-location with faculty and administrative staff was cited as contributing to a high level of teamwork and communication between grant staff and the personnel who teach and administer the many programs of study offered by IBIT. Staff report that this close relationship has been built due to the leadership of the project director and the communication that has been established among grant staff and the department staff. Because of the college’s large geographic footprint, co-location of grant staff in the IBIT department facilitates formal and informal sharing of information and collaborative generation of ideas. In addition, it helps students by providing one area where they can go to find most of their academic and supportive needs within the large campus.

Further, the project team was cited as having a close relationship by multiple college staff. The Project Director and two Career Coaches at Bellevue work closely with one another and the students and staff, as well as with the Career Coach located at Everett. The grant staff reported they feel a part of the IBIT department, a sentiment echoed by the department’s administrative staff and by another college employee who said, “This team is very close, working well together and with the faculty in the department.” Because of the close relationship, they have been able to leverage resources for students at Bellevue and Everett, as well as in the community. People described the team as bringing “enthusiasm and energy” to their work and to the department.

The partnership with Everett has developed in a very positive way for both Everett and Bellevue. Specifically, Everett’s IT department’s annual program evaluation cited the NISGTC grant as contributing to a “huge difference in the department and the college,” according to one Career Coach. As of the date of the site visit, Everett had surpassed the student enrollment/participant goal, and nine of the 18 TAA designated participants who enrolled at Bellevue came from Everett. However, grant personnel reported the partnership is about much more than participants served. The Career Coach, hired October 2013 as a result of the NISGTC grant, is the first position of its kind at the college. She described Everett as a college where “the theme is change and transition.” With her office located in the IT department, she has “immediate support” and an ability to go into classes and recruit students. Further, the partnership with Bellevue has allowed Everett to hire its first full time, tenured IT faculty position, independent of TAACCCT funding. Due to the investments in the IT program made possible by the grant, grant personnel report that the program was more appealing to potential faculty candidates; in prior searches, it had been difficult to fill the position. In addition, instructional enhancements have resulted in “more realistic courses” with embedded certificates. Further, Everett’s district serves Boeing and its district includes other large manufacturing plants (e.g., Kimberley Clark) that have recently closed, resulting in TAA eligible individuals in the Everett district.
**Career navigation.** Two Career Coaches are located at Bellevue; one more is at Everett, the partner college. The Career Coaches perform multi-dimensional outreach, recruitment and support services to the students enrolled in the NISGTC programs of study. Career Coaches described their target student groups (and age ranges) as falling into one of three categories: career starters (20s – 30s); second career changers (mid-20s to mid-50s); and career enhancers (30s to 60s). At Bellevue, they believed the NISGTC programs are mostly serving the ‘enhancers’ and ‘changers.’ The Career Coach at Everett said their population is different; they serve career starters and career changers. Students are recruited via in-class presentations, fall orientation, outreach to TAA eligible individuals and through the WorkSource staff on campus.

The Career Coaches are new positions in IT at Bellevue, however, not a new position at either college. The first Career Coach was hired September 2013 at Bellevue; the second was hired March 2014. Everett hired its Career Coach in October 2013. Prior to the current Career Coaches coming aboard, Bellevue had one position related to the current SOW though not as comprehensive. The title assigned to the scope of job duties had to be negotiated so that it was not duplicative to other positions on campus. Current Career Coaches have backgrounds as admissions counselors, in career advising or college placement, and one was an instructor at a community college. One Career Coach identified the underserved populations as a particular interest, and she has just begun outreach to established organizations who work with those populations. More deliberate outreach to underserved students is one of Bellevue’s new president’s goals as well. Students, administrators, staff and employers offered consistent, glowing praise for the Career Coaches and the services they provide. One experienced administrator described the “tireless, positive energy” these two people bring to the department and stated that she “will fight to keep them.” A new employer partner said she “could not do [her] job as a recruiter for [her company] without the Navigator [Career Coach] at Bellevue.” She added, “Because of my relationship with the Navigator [Career Coach], I know details of the certificate programs [at Bellevue] and was able to communicate that to Microsoft.”

Bellevue administrators have been participants in the Washington Executive Leadership Academy. As part of a project for that group, one administrator mentioned that the Career Coach at Bellevue had gained the attention of a Vice President who has become an advocate for sustaining this role at the college. The college president, employer partners and the students supported their continuation as well. The services available have developed over time, which means that unfortunately students engaged early in the TAACCCT grant period may not have had the benefit of the benefits of the services currently provided.

Finally, the addition of these positions and their location within the department is an innovation for which all parties interviewed were very supportive, reflecting a “change in philosophy and style.” One person added that not all departments are as cohesive as this one has become, and the addition of the Career Coaches has been a benefit to all, including the faculty. The Bellevue project manager summarized the Bellevue’s approach to implementing the grant, including locating it in IBIT, by stating, “We are all focused on our students; we don’t make a mistake when we focus on what they need.”

**Employer engagement.** The OCCRL evaluation team met with representatives from four employer partners; two interviews were in person and two were conducted by phone. Most employers described their partnership with Bellevue as recent — since 2013. Bellevue staff said that they are starting to see more interest in hiring 2-year [credentialed] students. Employers credit the work of a Career Coach whose role has grown to emphasize the successful transition of students to jobs. As such, she actively pursues employers to partner with the college in providing internships and other hands-on work experiences, serving on advisory boards, participating in job fairs, conducting mock interviews and reviewing resumes for styles preferred in the IT field, providing input into curriculum, serving on panel presentations (such as Women in IT), and forecasting trends in the IT field. Employers described the Bellevue graduates as “well-prepared” and “passionate about their field.” All employers interviewed indicated that their relationship with Bellevue will continue.
Virtual technology. Virtual laboratories were designed and installed at all seven partner locations. These labs allow students to perform their labs anytime and at any place with Internet access rather than having to be co-located with the devices needed for the labs. Further, because the implementation is virtual, the labs that can be offered can be much more complicated than might be possible if faculty had to individually set up the labs in the classroom.

The virtual lab technology has been a boon to the department and college as a whole as well as to Everett. The virtual labs were described by faculty, students and administrators in glowing terms. One point a faculty member made about the virtual labs was that they “save the students thousands of dollars a year.” This estimation is based on aggregate saving to students associated with lab access fees that they would have otherwise spent on purchasing access to commercially available online labs, and consortium leadership estimates that student save on average between $100-$150. The virtual labs have also impacted student access to course material at times convenient for their work schedules. For example, Bellevue faculty recounted that a scheduled maintenance shutdown of power needed to run the virtual lab was rescheduled so that it would not interfere with students’ access over weekend hours, a high use time for working adults. One instructor summarized the impact of virtual labs as earning “passionate loyalty” and “scalability to others who can benefit.”

The virtual lab technology has been scaled beyond the colleges to a local Year Up program. Year Up is a program designed to prepare urban, low-income young adults for professional careers in a year’s time, half of which is in the classroom and the other half in internships. Year Up advertisement material talks about the “opportunity divide” between young adults who desire a career pathway and the millions of jobs that require a post-secondary education. Bellevue faculty leveraged the virtual labs technology to aid the local program and plans to host a boot camp in September, 2014. To date, Bellevue has not yet seen a significant number of Year Up students enroll in Bellevue programs of study due to their existing full schedule of courses for Year-Up students.

Promising Practices at Bunker Hill Community College
The OCCRL evaluation team identified the following two promising practices related to Bunker Hill’s implementation of the NISGTI initiative: a) collaboration in providing students support services among faculty, Career Coaches, and tutors, and b) on-site delivery of programs at two community based organizations. These promising practices and strategies are discussed in more detail below.

Collaboration in providing students support services among faculty, Career Coaches, and tutors.
The availability of faculty on-site for both community-based organizations and campus-based students, the addition of advanced student tutors, and a reported general strong engagement by faculty in serving student needs has created an enhanced supportive environment for student learning. Additionally, faculty reported that the test practice software Measure Up had increased student confidence, and on a least a few occasions, made the difference between passing or failing certification tests. In addition to a test preparation platform, this tool may also be used as an effective learning tool to reinforce important concepts. Bunker Hill Career Coaches provide diligent support for students in navigating the program and completing credentiaing. They also continually identify existing students who can benefit from participating in the program. They utilize multiple methods and opportunities to interact with students from classroom presentations to managing an active LinkedIn site that includes industry partners.

On-site delivery of programs at two community-based organizations. Programs are currently offered at the New England Center for Homeless Veterans and St. Mary’s Women and Children’s Center. The partnership with community-based organizations has been a long-standing aspect of Bunker Hill’s community engagement. On-site programs have multiplied the value of these partnerships through creating an effective bridge to employability skills and matriculation, through competence and confidence building. Community-based organization staff are integrated partners in program delivery and student support while faculty and Bunker Hill staff extend the campus systems and services to enable successful
navigation and use of services, focused learning support, and new confidence in the potential for further education and success.

**Promising Practices at Collin College**

The OCCRL evaluation team identified the following four promising practices related to Collin’s implementation of the NISGTC initiative: a) career coaching, b) tutoring, c) strategic employer engagement, and d) virtual technologies. These promising practices and strategies are discussed in more detail below.

**Career coaching.** In the initial implementation report for Collin, OCCRL evaluators commented that Career Coaches were dedicated to tailoring student services for TAACCCT participants and working with students to ensure academic and career success. In addition, the OCCRL evaluation team documented tutoring as a means of helping students to complete their programs of study and obtain sought-after IT credentials. Through close working relationships with Career Coaches, the benefits of tutoring may even extend to employment outcomes because of the strong communication link between students and their tutors and Career Coaches in that on-going communications occasionally leads to the sharing of information about job opportunities. At the time of the OCCRL evaluation team’s initial site visit in January of 2013, only one Career Coach was employed by the grant. The grant leadership expressed support for this role and indicated their goal to increase the Career Coaching staff. A year and a half later, in July 2014, that goal had been realized as three additional Career Coaches had been added to the roster. OCCRL also gathered evidence that the Career Coaching strategy was continuing to add value to Collin’s programs of study and to the student experience. Students interviewed by the OCCRL team reported receiving valuable services from the Career Coaches, from reviewing résumés, to facilitating mock interviews with business volunteers, to providing assistance in linking them to prospective employers through career fairs and referrals. “The Career Coaches have helped me so much”, one student stated emphatically. “She made the time to work with me. Without this grant, I would not have a job.”

Similarly, employers expressed their appreciation of the role of the Career Coaches, and the importance of their relationships with these individuals. “The Career Coach has been very accessible and collaborative,” commented one employer, who also expressed a strong interest in maintaining consistent communication and indicated a willingness to engage in more frequent (monthly) interactions. The Career Coaches were developing positive connections with industry partners, with one employer indicating that his/her firm had a good relationship with the Career Coaches and that he/she would welcome the opportunity for more involvement with them.

Further, over the course of the grant, the Career Coaches appeared to be gaining a more visible and prominent presence with a growing number of employers, some with longstanding relationships but others coming from new contacts associated with the grant. The Career Coaches themselves explained how they were expanding their reach with outreach to hundreds of employers by conducting cold-calls with potential employer partners, maintaining regular contacts with the local Chambers of Commerce, and meeting with One-Stops and community based organizations.

These concerted efforts appeared to have had an impact on employer commitment to Collin’s job fairs, as employer participation increased from the first job fair held in January 2014 to the second one held approximately five months later in May 2014. In addition to job fairs, other employer engagement strategies used by the Career Coaches included LinkedIn and engaging students in mock interviews and employer panels with industry representatives. The Career Coaches reported that these strategies were well received by grant participants.

The success of the Career Coaching model had also been noticed by Collin leadership, which recently adopted the term “Career Coaches” in the student services function of the college. Top leadership of the college was aware of the Career Coaching strategy and attributed some of the success of the grant to this approach.
**Tutoring.** The increasing importance of tutoring was noted by the OCCRL evaluation team. In November 2012 Collin had opened its IT Tutoring Den, which was staffed by three tutors. At the time of the most recent visit in July 2014, the number of tutors had more than doubled, and the reputation and sense of value provided by the tutors had grown among multiple stakeholders who were interviewed. For example, when relaying the top three value-adds of the TAACCCT grant, the faculty listed the tutors as one of Collin’s most valuable strategies associated with the grant. The faculty also spoke to the increasing level of skill and technical competence as tutors gained more experience working with students. Thus, the benefits of the strategy extended to students but also to the tutors themselves. Students who were participating in the grant also conveyed their praise of the tutors, commenting on their ready availability and ability to explain topics clearly to increase their comprehension. This praise was echoed by faculty who highlighted tutors knowledge and ability to support students. The tutors themselves explained their various modes of instruction, ranging from conducting one-on-one sessions with students to facilitating small group sessions, and conducting workshops and labs. They consistently reported enthusiasm for their roles and a passion for helping their fellow students.

To this end, the OCCRL evaluators also noted that in the year and a half that had transpired between the 2013 and 2014 site visits, the Collin faculty had benefited from the services provided by the tutors and integrated the strategy into their instructional format. The instructors had formed productive working relationships with the tutors, thereby enhancing the value of the student experience. The high value of this strategy suggests its importance to institutionalization by Collin after the TAACCCT grant ends.

**Strategic employer engagement.** After OCCRL’s initial site visit in January 2013, the evaluators reported on Collin’s important relationship with employers involved in NISGTC’s National Business and Industry Leadership Teams (BILTs). BILTs are national and local teams of business and industry leaders who meet quarterly and provide leadership in the development of curriculum in their specialty area. Building on the model provided by the National Science Foundation Convergence Technology Center, the consortium has developed BILT for each of the four specialty IT areas. These employer leadership teams provide NISGTC colleges with information on current industry trends and support curriculum development. Building on the standards set by the Department of Labor, the KSAs already identified in some fields, and the NICE and NIST Cybersecurity standards, NISGTC’s four BILTs rank and prioritize the knowledge, skills, and abilities (KSA) necessary for graduates to successfully gain and maintain employment in their respective disciplines. Additionally, the BILTs provide NISGTC colleges with a labor market forecast by discipline, allowing the colleges to develop programs that meet labor market needs and maximize employment outcomes for their students. The colleges then took the results of the national BILTs and localized that information to work with their local BILTs.

During the site visit in July 2014, the evaluators noted the BILTs’ contributions to Collin, with a healthy level of participation of employers engaged through BILT and other employer engagement strategies, including some employers who were being tapped as virtual mentors to students taking the capstone course. Though the number of students who had participated in virtual mentoring was small by the time of the OCCRL team’s visit in July 2014, according to both the faculty and grant leadership, not only did the three enrolled students in the original pilot receive valuable insight into industry and feedback on their projects, they had also secured new employment in IT-related jobs. Given the success of BILT and the low cost associated with virtual internship/externships, Collin’s intention to scale this strategy appears to be a promising endeavor.

The OCCRL evaluators also noted Collin’s strategic approach to cultivating relationships with employers through the BILT and with other employer-engagement strategies, including engaging industry members in providing student internships, mentors, workforce preparation (mock interviews, panel discussions and job fairs), and ultimately employing Collin graduates. Grant leadership remarked that with new partnerships, it is important not to overload employers with responsibilities if their long-term commitment is sought. Over the course of interviews with industry partners, OCCRL evaluators noted that employers were impressed with Collin’s programs and students, and they expressed an enthusiasm and willingness
to become more involved, including encouraging Career Coaches to become even more proactive in their communications with them.

**Virtual technologies.** During OCCRL’s visit to Collin in January 2013, the faculty proudly displayed the virtual lab that had been installed just prior to the team’s visit. At the time of OCCRL’s second visit in July 2014, the virtual lab had been implemented and its capacity to contribute to various programs of study had been increased substantially. According to the grant administrator, the financial investment of TAACCCT funds was about $500,000, representing one of the most sizeable commitments of TAACCCT funds of the grant. Further, by the time of the July 2014 visit by the OCCRL evaluation team, virtual labs had emerged as a major strategy that was highly appreciated by multiple stakeholders associated with the TAACCCT grant. Anticipated to be a hallmark feature of NISGTC, by the summer of 2014 – about 2.5 years into the grant – numerous administrative and instructional staff spoke highly of the importance of this strategy to IT instruction in the Collin environment. The potential for scaling virtual labs in a way that would make IT programs affordable for large numbers of students was mentioned by the NISGTC leadership.

To this end, both faculty and administrators advocated for the virtual lab, representing a significant change from the OCCRL team’s initial visit in January 2013. According to numerous sources interviewed in July 2014, there had been a notable increase in buy-in of the virtual labs by Collin IT faculty and therefore there had also been a substantial up-take in utilization of the technology. The students also voiced their appreciation for the virtual labs, commenting that the labs “were very helpful and increased their comfort zone.” One student noted the importance of the virtual labs to completion of his/her certification, observing “the labs were very good and helped me to get my certification.” Grant leadership surmised that the TAACCCT grant had become more visible to numerous stakeholders at Collin due to the virtual labs.

Moreover, since the OCCRL team’s initial visit to Collin, Cisco redesigned its associate-level certification programs and changed its CCNA certification to CCNA Routing and Switching certification, which precipitated new exams, courses, and training. As a Cisco Training Academy, it was imperative that Collin upgrade its hardware and software to maintain its Cisco Academy certification. Faculty stated that by using money from the TAACCCT grant, Collin was able to pay for Cisco devices and connectivity to upgrade and provide logistical support for the Cisco labs, with the end result being enough devices to support and update existing labs and to create a new physical lab. The faculty also reported that the ratio of students to equipment improved, allowing students increased access to equipment.

**Promising Practices at Del Mar College**

The OCCRL evaluation team identified the following two promising practices related to Del Mar’s implementation of the NISGTC initiative: a) utilizing continuing education as entry into GIS coursework, and b) GeoAcademy. These promising practices and strategies are discussed in more detail below.

**Utilizing continuing education as entry into GIS coursework.** Del Mar’s Fast Track GIS program is being offered as continuing education. The five courses in this program are:

- Introduction to Computers;
- Introduction to PC Operating Systems;
- Introduction to Databases;
- Introduction to Logic Design and Programming Fundamentals;
- Introduction to Geospatial Awareness and Technology.

The courses are modularized and accelerated, lasting between 4 and 5 weeks each. Students who successfully complete all 5 courses receive a continuing education certificate of completion. Students who successfully complete these courses with a grade of 85% or better and who enroll at Del Mar can apply to convert the courses from non-credit continuing education to credit at Del Mar (one-to-one conversion) for
a nominal fee. These courses provide students interested in GIS a low-risk opportunity to explore GIS, gain foundational information technology skills, and build the confidence and skills necessary to succeed in college level courses. Once converted to credit coursework, the courses that make up Fast Track count for a total of 32 credits towards the GIS-IT Essential Marketable Skills Award, which is the first in a set of sequentially stacked credentials in GIS that students can earn at Del Mar.

**GeoAcademy.** Del Mar is leading the GeoAcademy, a consortium of colleges and universities that is providing fully online and open source GIS courses to students anywhere in the world. The consortium includes University Texas A&M University at Corpus Christi, Green Mountain College, Central New Mexico College, and American River College. The Academy is currently offering five courses that are designed to provide students with an accelerated and affordable opportunity to gain foundational skills in GIS in alignment with the Geospatial Technology Competency Model that was validated by the NISGTC BILT. These five courses are:

- GST 101 Introduction to Geospatial Technology
- GST 102 Spatial Analysis
- GST 103 Data Acquisition
- GST 104 Cartography
- GST 105 Remote Sensing

All five of these courses were created or enhanced with NISGTC funding. The 4-week courses cost students $25 each. The courses are instructor-led and graded and do not operate as massive online open courses (MOOCs). Each course is modularized with an overview of the course, open source labs (QGIS) with instructions, videos, and course assignment posted on the website. Students also access their quizzes and exams online. Cohorts are scheduled monthly in September, October, and November, of 2014, with the first cohort starting on September 1, 2014. At the time of our visit the GeoAcademy website had been live for just over two weeks and had 10,075 page views from over 2700 people. At that time, 200 full-time students were enrolled in the first cohort and the second cohort was nearly full. Students who complete the sequence of courses receive a certificate of completion from the Academy. Students who successfully complete GeoAcademy courses and who enroll at Del Mar are also eligible to convert the courses to credit at Del Mar for a nominal fee. Del Mar is also planning to convert these courses to a MOOC format through the Canvas platform beginning in January of 2015.

**Promising Practices at Moraine Valley Community College**

The OCCRL evaluation team identified the following three promising practices related to Moraine Valley’s implementation of the NISGTC initiative: a) career coaching, b) strategic employer engagement, and c) virtual technologies. These promising practices and strategies are discussed in more detail below. In addition to these promising practices, it was noted by the OCCRL evaluators that there is a widely acknowledged expectation and practice of open collaboration and sharing at Moraine Valley. While this atmosphere existed prior to the grant, it has enhanced the accomplishment of grant goals, provided a fertile environment for scaling innovations, and led to a willingness to share ideas and support to consortium partner colleges (e.g., the introduction and subsequent adoption of Track Via participant tracking software).

**Career coaching.** In the initial implementation report for Moraine Valley, OCCRL evaluators commented that there was a general strength in the Career Coaches that were dedicated to tailoring student services for TAACCCT participants and working with students to ensure academic and career success. In addition, the OCCRL evaluation team documented the strong foundation of advanced technology and potential for the expansion of programs of study and course enhancement through the promise of the virtual laboratory. The Career Coaching has expanded since the original visit with an additional staff member and the development of a comprehensive system grounded in a life cycle model for student support developed by the team. There is a very active agenda of outreach, workshops, integration with campus services, and the adoption of the Track Via software to improve data
management for the team. Moraine Valley Career Coaches have shared the Track Via software with the consortium coaching group resulting in further adoption at four other colleges.

The success of the career coaching model had also been noticed by college leadership. Top Moraine Valley leadership was aware of the career coaching strategy and attributed some of the success of the grant to this approach. At the time of the OCCRL evaluation team’s initial site visit in January of 2013, two Career Coaches were employed by the grant, and the grant leadership expressed support for this role and indicated their goal to increase the career coaching staff. A year and a half later, in September of 2014, that goal had been realized as an additional Success Coach had been added to the roster.

Over the course of the grant, the Career Coaches appeared to be gaining a more visible and prominent presence with a broad range of stakeholders from Moraine Valley leadership to employer partners and faculty. A senior leader commented that during a classroom visit students were engaged in an active and highly complementary discussion of the support they received from the Career Coaches. The coaches themselves explained how they were expanding their reach, including conducting workshops, visiting classroom, extending hours outside of normal working hours, supporting certification testing, the Boot Camps, and conducting Professional Development Cohort programs. The Success Team also collects information from students, which includes certifications, employment goals and location requirements. This data is used to assist students in reaching their goals. Additionally, administrative action has been taken to support the grant with additional non-grant funding for a large remodeling project that has enhanced facilities in the IT area. Administration also adopted a policy to waive graduation fees for grant participants that is serving as a pilot for college-wide adoption.

**Strategic employer engagement.** After OCCRL’s initial site visit in April of 2013, the evaluators reported on Moraine Valley’s relationship with employers involved in the National Business and Industry Leadership Team (BILT). The BILT is described above under Collin’s promising practices under the strategic employer engagement description. During the site visit in September 2014, the evaluators noted the continued efforts with this group and consortium partners and an enhanced and active regional program of employer engagement.

It was reported that Moraine Valley has a robust partnership in Cybersecurity/IT with between 40 and 50 regional employers and an active campus Career Services function that coordinates internships, provides workshops and mock interviews, and connects students to placement opportunities. This campus function is integrated with the grant team as a core internal partner. Another strong aspect of the Moraine Valley project is the strength of partnerships and the support of the Illinois Technology Foundation (ITF), an employer group that includes large and small scale IT firms that has become a core partner with Moraine Valley. During the site visit, evaluators observed a four-hour Professional Development Cohort event that included members of that group as speakers followed by an active professional networking lunch where students had the opportunity to interact one-on-one with the professionals. During the on-site visit in September of 2014, Moraine Valley and ITF were conducting a half-day Professional Development Cohort program, the second time this event had been offered for students. The program agenda included four professionals who represented industry, a recruiting company, and the head of the Illinois Technology Foundation. Students who attended were professionally dressed, and coached as a group on technical and interpersonal skills development. Following the formal meeting, the students had an opportunity to attend a luncheon where they interacted as small table groups with the professionals to gain personal insights and practice their communication skills.

**Virtual technologies.** In the September 2014 visit by the OCCRL evaluation team, the expansion of virtual labs had emerged as a major strategy that was highly appreciated by multiple stakeholders associated with the TAACCCT grant. The use of the technology had far exceeded planned goals as reported by IT faculty; 19,000 uses across the consortium and 11,678 uses at Moraine Valley had occurred in the timeframe where 2,000 had been expected. During OCCRL’s visit to Moraine Valley, the faculty proudly described the increased utilization of virtual labs and the national extension of course materials created by Moraine Valley. The experience with IT innovation at Moraine Valley predates this
grant and creates a degree of confidence with innovation and curriculum development that is an important contributor to success of the current grant. Faculty are experienced with fast paced technology and developing programs for the IT market. They are motivated and expressed a general desire to be “the best community college IT program in the country.” Moraine Valley has leveraged curriculum from sister consortium schools, contributed development in assigned areas, and expanded related programs. Curriculum enhancement has also included stackable credentials, blended courses, and open laboratories. The TAAACCT grant has also funded Measure Up test-practice software to support certification testing and general preparation in regards to course content.

Promising Practices at Rio Salado College

The OCCRL evaluation team identified the following five promising practices related to Rio Salado’s implementation of the NISGTC initiative: a) collaborative partnerships, b) student support services, c) auto award process, d) Fast Track grant curricular approval, and e) credentialing process. These promising practices and strategies are discussed in more detail below.

Collaborative partnerships. The demand of creating online curriculum for NISGTC colleges in a short timeframe provided the opportunity for Rio Salado to turn to its partner colleges in the Maricopa system to tap others’ expertise. In doing so, Rio Salado has aligned some strategies and practices that are part of the grant with the One Maricopa effort. One Maricopa was described as the chancellor’s effort to better align 10 independent colleges that were historically competitive into a unified system to streamline processes and outcomes for students’ and others’ benefit. Colleges responded favorably and as a result, their relationship has strengthened. Rio Salado’s role has been in course development, the FastTrack curriculum process and its auto award process. Two colleges within the district (Estrella Mountain and South Mountain) and the Maricopa Skills Center have been active affiliates/partners in both the One Maricopa initiative and in the TAAACCT grant; both are referring students to be participants as well as using the technology. The net result of this increased collaboration among Maricopa colleges because of the One Maricopa strategy and aided by the NISGTC collaborative work was described as “lightning in a bottle” for the district. The outcome of increased collaboration is that “we’re not competing anymore,” according to one faculty member. Rio Salado NISGTC faculty have been asked to do a presentation to the Maricopa Governing Board in Spring 2015 to describe this change. Finally, Rio Salado reported it will continue this and additional cooperation and continue serving as a resource to other Maricopa colleges awarded successive TAAACCT grants.

Cited as an outgrowth of collaboration from the NISGTC grant, faculty at participating Maricopa colleges have formed a stronger unit in designing curriculum and discussing their approach to helping students succeed. Part of the model involves welcoming tutors into the classroom, but faculty take on roles additional to instruction. Students report that their faculty go the “extra mile and even [some] provide their phone numbers” for access any time. Of special note, students said that the compressed timeframe of the courses (8 weeks) is intense, increasing their need of assistance from tutors or faculty. Finally, Rio Salado is pleased that it has formed good working relationships with several of the NISGTC colleges across the country.

Student support services. Academic support via tutoring has been accomplished in several ways. First, tutors are embedded in labs for students’ real-time, on-site needs. There are also tutors available at each participating campus conveniently located next to the lab at hours convenient to student access. Finally, there are tutors online to support those students and classes. Additionally, the grant has provided campus-based (four locations) Career Coaches, with offices adjacent to or actually in open laboratories, and two part-time partnership development staff. The Career Coach Coordinator has developed a policy and procedures manual that outlines the Career Coaches’ support and processes. For example, within a week of enrollment, Career Coaches send students a welcome letter followed by monthly “wellness checks” that are conducted via email, texting, phone and/or in-person. Also, contact is made as needed using the vehicles previously noted. Career Coaches have been cross-trained so they can work at any participating Maricopa campus. Student interviews confirmed the help they have received from Career Coach, citing
their personal touch, targeted guidance and general “life-coaching” has proved to be the “win-win” of being a NISGTC participant. Further, students are supported through faculty, community-based partnerships, college resources, and grant initiatives. Rio Salado has a partnership with Goodwill that includes on-site career centers with staff and resources to support employability and placement. Rio Salado anticipates six full-time Career Coach will be added to support students; a decision should be made by early spring, 2015.

**Auto award process.** This new process, established as a direct result of the grant award, has been implemented at Rio Salado and its partner colleges as a pilot for the entire Maricopa system. It provides Rio Salado and its partner colleges the ability to award grant-supported program and degree completers with the corresponding academic credential without the need for the student to apply. Previously, students would need to formally request completion credentialing (i.e., certificate or degree awards). In some cases, students would meet all requirements for the award of a credential but not receive it because they did not apply. It was noted by faculty and administrators that in the IT field this is a pronounced issue since many students only attend programs long enough to build skills needed for employment or to close continuing development needs. It appeared that in fact, the minor barrier of an application for a credential award would result in an inaccurate picture of the student’s completion status when the college based that on credentials alone.

The auto-award process enables colleges to accurately report student completion outcomes and directly contributes to the national community college completion agenda. Advisors and program staff provide the college Admission and Records Department the names of those students who may have stopped-out without completion evidence so credentials can be awarded to them, and encourage those who are close to completion to continue based on the opportunity to rapidly obtain a valued award. This is also very important as the state is implementing performance based funding; the lack of credential completion has presented a critical moment for the colleges to intervene. The outcome of this pilot will be reviewed by the Maricopa Community Colleges’ Executive Vice Chancellor and Provost at the end of the grant period for consideration of full implementation at all ten Maricopa Colleges.

**Fast Track grant curricular approval.** As with almost all of the NISGTC colleges, the receipt and implementation of the virtual labs has enhanced the curriculum at Rio Salado’s partner colleges. Faculty specifically cite its ability to provide increased access to students as a positive addition, as well as the creativity and capacity to improve IT curriculum that the virtual lab has allowed.

The FastTrack curriculum process has been implemented for grant-supported programs to pilot-test curriculum in advance of formal adoption. FastTrack is a direct result of the TAACCCT grant, reducing the curriculum approval process from one year to no more than 10 business days with most approvals occurring within five business days. This has enabled the grant team to quickly implement programs while also validating methods and content to enhance final approved courses/programs. Program administrators and the college president stated this will be sustained.

**Credentialing processes.** Rio Salado has a rich history of providing students with valuable credentials that include one and two year certifications. Staff reported that in the prior year Rio Salado was number three in the United States in the number of one year certifications awarded and in the top 100 nationally for two year certifications. The grant was viewed as another opportunity to extend value to the over 30,000 students through added models and options for certifications and credentialing. This has included industry certifications along with stackable credentials for programs that are components of Associate degree tracks. The stackable credential concept has been enhanced via NISGTC and expanded outside the IT department to other programs. Expanding the grant participation within the Maricopa system from Rio Salado alone to three additional sister campuses has also accelerated the adoption of the stackable credential model system-wide.
Promising Practices at Salt Lake Community College

The OCCRL evaluation team identified the following three promising practices related to Salt Lake’s implementation of the NISGTC initiative: a) advancing GIS curriculum, and b) student support services, and c) Open Geography Education. These promising practices and strategies are discussed in more detail below.

Advancing GIS curriculum. Salt Lake’s emerging advanced geosciences curriculum was developed to meet the changing landscape of geosciences capacities needed by business and industry. Salt Lake adopted the foundational GIS coursework developed through their work in collaboration with the NSF GeoTech Center and Del Mar. Salt Lake has a longstanding partnership with Del Mar and participated in the curriculum development work of the NSF GeoTech Center. Building on these foundational courses, Salt Lake developed six new advanced GIS curriculum courses that address new and emerging skill sets identified by business and industry in the college’s Program Advisory Committee (PAC). These courses were developed by subject matter experts who were identified as experts in the relevant GIS area by GIS PAC members and by full-time faculty members. Some of the experts are teaching courses that they developed as adjuncts. These subject matter experts are active members of the industry, and they help to ensure that the curriculum is current and well aligned with industry needs, and is grounded in practice. Salt Lake is offering the first fully online program in GIS in the state of Utah. Enrollment in the online courses has been higher than anticipated, although it is too early to know the impact of this program in terms of the outreach, engagement, and outcomes for students.

Under the grant, Salt Lake has purchased equipment that students are using in their geosciences coursework (in both GIS and geomatics), and field experiences are reflective of those being used currently by the industry to promote continuity for graduates of the program. Equipment purchased with support from the grant includes a Lidar scanner, Padzilla, hand-held positioning devices, and updated computer labs, including the most up-to-date versions of geoscience software.

Student support services. Salt Lake has worked to develop a system of student supports that engage students throughout their educational experience. An online orientation course that has been developed to provide beginning students with an overview of the array of supports and services that are available to them, both from the college and from the department. Salt Lake grant staff members have developed a relationship with college career and advising services through which they collaborate to serve geoscience students. Full-time faculty and staff were praised by students, peers, and college administrators for their commitment to student success, including their dedication to working with individual students to provide additional academic supports and to ensure students gain access to additional supports provided by the college and the community, as needed for their success.

Enrolled students are provided with online newsletters featuring student services, program news, as well as current internship, employment and mentorship opportunities. This information, as well as program descriptions and additional services, is provided through the departments’ Weebly website and newsletters. This information is complimented by readily available open labs and tutoring in geosciences. These tutors are expected to be sustained through the Salt Lake’s recently announced plan to expand the existing Science Resource Center into a new Science, Mathematics and Technology Resource Center. This move not only expands available services, but it institutionalizes the budgeting for these services. The Science, Mathematics and Technology Resource Center will include geoscience specific tutoring, space for adjuncts to meet with students, and potentially career coaching.

Open Geography Education. Faculty at Salt Lake are facilitating the open geography movement by creating a repository of geography resources including authoring a series of interactive open source eTextbooks that are licensed for use through a Creative Commons license. These eTextbooks and the repository of resources for faculty and students alike are available on the Open Geography Education website. At the time of the December visit, faculty had worked with partners to develop four eTextbooks on the following subjects a) introduction to geographic science, b) human geography, c) physical
geography, and d) Natural Disasters. Each eTextbook has a series of chapters that feature a combination of text reading and other multimedia sources including photos, graphics, videos, and interactive geospatial activities. The geospatial activities allow students to engage with geospatial software, demonstrations, case studies, news items that demonstrate the application of the concepts introduced in the chapter. Since replacing traditional textbooks previous used in their geospatial courses with these eTextbooks, faculty reported that students are more engaged with the materials and appreciate the diversity of media utilized. A strong motivation for faculty involved in the development of the eTextbooks was the potential to reduce the fiscal burden of purchasing textbooks for their classes. The Salt Lake grant team tracked the savings to students and estimated that over the first two semesters that the eTextbooks were implemented in their classrooms, they saved Salt Lake students over $45,000. Plans are in place to develop an additional four eTextbooks in 2015 on the following topics a) introduction to geospatial technology, b) remote sensing of earth, c) cartographic principles, and d) spatial analysis.
IMPLEMENTATION CHALLENGES

OCCRL identified implementation challenges at each college that if addressed would have had the potential to strengthen the colleges TAACCCT-impacted programs of study as well as the grant-funded strategies. Many of the identified challenges are, or have been, the focus of improvement efforts although complete resolution has not yet been achieved for these issues. The following provides an overview of these implementation challenges at each NISGTC college at the time of the fall 2014 site visit. It is anticipated that many of these challenges will be addressed by the colleges during their final year of implementation.

Implementation Challenges at Bellevue College
The OCCRL evaluation team identified data collection and utilization practices as a challenge to implementation of the TAACCCT grant at Bellevue that affects the efficacy and sustainability of programs of study and activities associated with the grant.

Data collection and utilization practices. There is a lot of data being tracked at Bellevue, but the evaluators did not see a plan to use the data for program improvement. In interviews conducted on site, there was limited description of the use of data beyond performance reporting. Part of the problem is an outdated data system about which one person stated, “We have problems accessing data from the ‘non-friendly’ system.” The data that are collected have mostly not been tapped for analysis of programs of study or a strategy, although the data have been used creatively to recruit additional enrollees, which is to be commended. Though Bellevue has expressed intention to sustain some major NISGTC inspired efforts, without data that demonstrate their effectiveness, sincere intentions without supporting data could be vulnerable to competing interests for financial resources.

Related to data use, at the time of the site visit, Bellevue was using Excel spreadsheets to track student services visits, a fact that grant personnel described was “outdated” but an improvement from the “sticky notes” being used at first. In October 2014, they will pilot an early version of software that Bellevue is adopting that will enhance their ability to keep track of more precise data points that will allow better analyses of the impact of that innovation and others.

Implementation Challenges at Bunker Hill Community College
The OCCRL evaluation team identified four challenges to implementation of the TAACCCT grant at Bunker Hill that affect the efficacy and sustainability of programs of study and activities associated with the grant. These challenges are: a) unemployment insurance wage data, b) partnerships with community based organizations, c) professional development, and d) curriculum development.

Unemployment Insurance wage data. One of the most impactful challenges to the successful completion of the grant reporting requirement is the resolution of the lack of unemployment wage data, which have not been available for the entire term of the grant, yet are necessary to demonstrate student outcomes. Previously collected survey results that were locally developed were inadequate to satisfy reporting requirements. Although efforts are underway to obtain this data with state agencies, a firm target date for resolution was not known at the time of the site visit. A related weakness in determining student outcomes exists with community based organizations partner students. These students may complete a program or period of residential services with no follow-up by the supporting community based organizations or college. The lack of follow-up appears to be a limitation of service requirements and formal responsibilities within the community based organizations which may also be exacerbated by the transient nature of many of the client populations served.

Partnerships with community based organizations. Three additional challenges were observed related to partnerships with community based organizations. The first was a reduction in community based organizations partners from six during the previous evaluation site visit to two (the New England Center for Homeless Veterans and St. Mary’s Women and Children’s Center). The second challenge was the
reported limitations community based organizations sponsored students have in completing independent homework assignments due to the lack of computer ownership and lab availability. The third challenge is the sustainability of these programs without grant funding.

Grant program staff reported that the number of participating community based organizations had been impacted by staff changes within those groups and the college. There is no current plan to add or re-engage the lost partners prior to the conclusion of the grant. For the two current partners, these programs have been anecdotally reported to achieve positive employment outcomes, increase client confidence and encourage continuing education. Interviewees stated that computer accessibility was a problem for students. Faculty reported that homework assignments were being completed during class as students did not have computers (in both cases clients served had been homeless) and that despite access to computers in public institutions, that libraries would not allow students to download the software necessary to use the virtual lab for assignments.

Aside from community based organizations partners, OCCRL noted during discussions with industry leaders that they were unaware of how they might become more involved with the college, and seemed eager for more interaction. Therefore, there are additional opportunities of which Bunker Hill could take advantage. For example, the business partners to whom we spoke demonstrated interest in becoming more active in advisory roles, such as assisting in validating curriculum. Thus, maintaining frequent and ongoing dialogue with current partners while increasing outreach to potential new partners is an area of improvement for Bunker Hill to consider.

Professional development. The nature of this grant has created an enhanced environment for the development of faculty, staff and support personnel. The introduction of new technology, programs of study, stackable credentials, the virtual lab, open-source course design, and enhanced relationships with the consortium and local partners have all been beneficial learning experiences. At the same time, staff and faculty report that IT is a dynamic field and that purposive grant-supported professional development has been limited. There remain opportunities for focused knowledge transfer within grant activities, and efforts to ensure ongoing technical currency.

Curriculum development. The instructional design process supporting new course development has evolved over the period of the grant causing frustration and slowing progress on shared deliverables. According to faculty, the Android Mobile Apps course development was also slowed by modifications within the mobile platforms due to rapidly changing technology. While it appears that general requirements for review at the consortium level have solidified, and the bulk of course edits have been completed, the Android Mobile Apps course, the IT Orientation Course, the IT Help Desk course, and the Interactive Web Design course are behind schedule and not yet complete, and concerns remain about maintaining these courses on-pace with the dynamic mobile environment. The IOS Mobile Apps course was developed by Collin.

Implementation Challenges at Collin College
The OCCRL evaluation team identified two challenges to implementation of the TAACCCT grant at Collin that effect the efficacy and sustainability of programs of study and activities associated with the grant. These challenges are: a) data utilization practices, and b) sustainability planning.

Data utilization practices. A challenge that was identified in the first visit by OCCRL evaluators continued to be evident in the team’s second visit. This challenge has to do with tapping the extensive dataset created at Collin for the TAACCCT grant and with engaging a wide group of stakeholders in the use of data for program improvement and decision-making. Collin is to be commended for its skillful efforts to gather data to meet the performance reporting requirements of the grant, through the hard work of dedicated grant-funded positions, but the potential for use of these data go well beyond performance reporting. Evaluators recognize the Collin team is gathering extensive data and using it in various ways.
We encourage continued and expanded use of data at the local level to provide additional insights into program improvement and data-driven decision making in areas.

**Sustainability planning.** A second challenge is the need to build the sustainability of the TAACCCT-impacted programs of study and related strategies through institutionalization. While a strong interest was expressed by senior leadership in various accomplishments of the grant, the ongoing demands of the grant appear to require constant attention from project staff. A sustainability plan had been started and was scheduled for completion in year 4. However, there was interest expressed by various grant-funded staff to ensure that programs of study and strategies funded by the TAACCCT grant such as virtual labs would be continued.

### Implementation Challenges at Del Mar College

The OCCRL evaluation team identified four challenges to implementation of the TAACCCT grant at Del Mar that affect the efficacy and sustainability of programs of study and activities associated with the grant. These challenges are a) staff transitions, b) data collection and utilization, c) facilities, and d) virtual labs.

**Staff transitions.** The first challenge has to do with changes in staff. The recent retirement of both Deans is a noted loss of experience and influence near the end of the grant. The former Deans’ sphere of influence may have helped the sustainability efforts of the grant strategies. The recently hired career advisor and program staff, although well-qualified, have had to overcome a learning curve that is inherent in grant funded programs. This presents a challenge to the achievement of grant outcomes. The dedication of the current grant leadership and support staff is evident in their self-report and in reports from students, faculty, administrators and employers.

**Data collection and utilization.** The second challenge is a lack of active engagement with the data. Project staff have yet to utilize student service support data or track it with a participant tracking system such as Track Via, AccuTrack or a similar system. This data could help capture the return on investment of the NISGTC reforms, be used in sustainability planning, and form the basis of continuous improvement.

**Facilities.** The third challenge is the lack of dedicated space, consistent schedule, and faculty for Fastrack. Space, scheduling and faculty will be important to sustaining the promising outcomes that are being realized by Fastrack. The building of the new campus on the south side may allow for the opening of space on campus that could help meet this challenge.

**Virtual labs.** The late full use of virtual labs in the CISCO programs of study made it challenging to realize the full benefit of the technology within the original grant period. Since the acquisition of the second tower dedicated to CISCO programs of study, the new virtual labs are offering more capacity and allow for 40 to 50 pods to be used simultaneously. Also, the students will have access to their pods 24 hours a day. Continued support for the implementation from the grant leadership and interim dean will help the use of virtual labs move toward sustainability.

### Implementation Challenges at Moraine Valley Community College

The OCCRL evaluation team identified three challenges to implementation of the TAACCCT grant at Moraine Valley that affect the efficacy and sustainability of programs of study and activities associated with the grant. These challenges are a) data utilization, b) sustainability planning, and c) underutilized grant resources.

**Data utilization.** The first challenge identified by OCCRL evaluators has to do with tapping the extensive dataset created at Moraine Valley for the TAACCCT grant and the opportunity to engage a wide group of stakeholders in the use of data for program improvement and decision-making. In addition to the original data collection/reporting required for grant compliance, Moraine Valley has implemented
the Track Via system to support the data needs for the Career Coaches. The potential for use of these data go well beyond performance reporting. Evaluators recognize the Moraine Valley team is gathering extensive data and using it in various ways. We encourage continued and expanded use of data at the local level to provide additional insights into program improvement and data-driven decision making in areas.

**Sustainability planning.** A second challenge is the need to build the sustainability of the TAACCCT-impacted programs of study and related strategies through institutionalization. While a strong interest was expressed by senior leadership in various accomplishments of the grant, and additional potential for another TAACCCT grant was identified as a source of continuing promising practices, a sustainability plan had not yet been produced for Moraine Valley despite the interest of various grant-funded staff to ensure that programs of study and strategies funded by the TAACCCT grant will continue. The importance of such a plan is mentioned in the following recommendation section.

**Underutilized grant resources.** A third challenge is the need to fully leverage the value of three grant components that were identified as having limited applicability at Moraine Valley; the Hipcricket system, virtual internships, and consortium partner developed bridge content. Moraine Valley intends to implement each of these innovations but in all three cases has an alternative institutional approach to achieving the intended outcomes such that there is limited interest in sustaining the grant required activities. Moraine Valley has a robust internship placement program, a developed student outreach process, and relies on existing developmental education courses for required remediation/enhanced preparation for students. While the grant innovations may not be an exact fit, there are aspects of each innovation that could be leveraged and/or applied to Moraine Valley approaches in order to enhance the value of the grant effort.

**Implementation Challenges at Rio Salado College**

The OCCRL evaluation team identified three challenges to implementation of the TAACCCT grant at Rio Salado that affect the efficacy and sustainability of programs of study and activities associated with the grant. These challenges are: a) data utilization, b) open educational resource development, and c) system advisory groups.

**Data utilization.** The first challenge identified by OCCRL evaluators has to do with tapping the extensive dataset created at Rio Salado for the TAACCCT grant and the opportunity to engage a wide group of stakeholders in the use of data for program improvement and decision-making. This includes external data available from the state workforce partners and advisory groups to gain an accurate picture of employment opportunities and outlook. In addition to the original data collection/reporting required for grant compliance, Rio Salado has implemented a Sharepoint site to support the data needs for the Career Coaches. The potential for use of these data go well beyond performance reporting. Evaluators recognize the Rio Salado team is gathering extensive data and using it in various ways. We encourage continued and expanded use of data at the local level to provide additional insights into program improvement and data-driven decision making in areas.

**Open educational resource development.** A second challenge is the need to complete the instructional design process for courses being developed by consortium partners for placement on NTER to meet grant commitments. Important progress has been made in consortium curriculum development and the instructional design process led by Rio Salado for the consortium. It is noted that Rio Salado has stepped in and created six courses that were assigned to other colleges in the consortium in order to offer it to Rio Salado and affiliate colleges’ students. While a robust instructional design and posting process on NTER now exists, and ongoing oversight and editorial effort has been made at the consortium level, some consortium partners continue to struggle with agreed contributions and may not be able to produce standard open educational resources/products throughout the consortium as initially envisioned. Across the consortium, but more notably affecting Rio, are limitations in the NTER system itself that create challenges in uploading course materials and limit utilization of these materials. Among other things, the
totally open nature of NTER that allows anyone to create a login and use the courses limits the abilities of all colleges to produce believable analytics.

**System advisory groups.** A third challenge is the need to fully leverage the value of multiple system advisory groups as the programs continue to scale within the Maricopa system. Even within the grant partner schools there are unique advisory groups and while important to have local connections, there is opportunity for added leverage and coordination for the college and greater value from the expanded networking and insight for the partners.

**Implementation Challenges at Salt Lake Community College**

The OCCRL evaluation team identified five challenges to implementation of the TAACCCT grant at Salt Lake that affect the efficacy and sustainability of programs of study and activities associated with the grant. These challenges are a) curriculum development, b) instructional quality, c) articulation to Western Governors University, d) data utilizations, and e) sustainability planning.

**Curriculum development.** First, Salt Lake mentioned challenges with the timing of curriculum development locally and relative to the rest of the consortium. Difficulties identified by instructors to understand the requirements of “open source” curriculum was a concern, as was the delayed start and protracted period of curriculum review. Uncertainty about the timeline for the consortium’s third party curriculum review was also mentioned as a concern. These curriculum development, implementation and review matters were associated with concerns for fulfilling grant requirements, although the team expressed a feeling of satisfaction with its accomplishments and a strong sense of appreciation and respect for other co-grantee colleges that had helped them to navigate the grant process.

An added concern about curriculum was expressed by the Salt Lake team because of the college’s national history, expertise and widespread recognition for its expertise in GIS. Due to Salt Lake strategic planning, the local grant team felt the need to move forward with curriculum development processes to fulfill local needs and offer instruction demanded by students locally and also beyond the boundaries of Utah (via online instruction). On a related note, the Virtual Lab that has been viewed favorably by other co-grantee colleges had introduced technical difficulties to the Salt Lake curriculum. In fact, technical difficulties had disrupted instruction, and led the college to seek other software solutions to fit Salt Lake’s curricula.

**Instructional quality.** Second, the evaluators noted some unevenness to instructional quality, according to some graduates, students, and faculty. With the geosciences department having few full-time faculty, it is logical that adjunct faculty would be relied upon to teach technical courses. Whereas some instructors had been employed for many years, bringing a wealth of expertise, coupled with extensive teaching experience, newer adjunct faculty lacked experience, with some reporting feeling ill-prepared for classroom instruction. Similarly, whereas some current students and graduates praised Salt Lake for offering programs that they expected to produce a family-living wage, some reported that technology-oriented classes left them feeling inadequately prepared for employment. They believed more focus on problem-based learning and hands-on experience would give them the basis for greater success on the job.

Moreover, new internships added to the geoscience curriculum were praised by the students as a means of enhancing their competence, but several students reported that too few internships and hands-on experiences (including laboratory limitations) existed to ensure that they could master the technical content when working on the job. The students requested additional hands-on labs, field experiences, internships, and mentorships to ensure that their training is aligned with what employers are expecting of new employees.

**Articulation to Western Governors University.** Third, challenges associated with articulation and transfer continued to be apparent with Western Governors University (WGU). The issue was not with cooperation but with finding a logical career pathway to extend from Salt Lake to WGU. Whereas the
partnership with WGU was slow to come to fruition, a long-standing articulation agreement between Salt Lake and Utah Valley State was mentioned by numerous interviewees as offering a healthy partnership associated with transfer opportunities for many students in the last few years. Figuring out how to move forward with articulation continues to be a high priority of the team, including plans for attendance at state-level articulation meetings scheduled soon after OCCRL’s visit.

**Data utilization.** Salt Lake faculty, staff, and other stakeholders spoke candidly about the desire to use data more effectively for program improvement. Noting a growing interest in using data by employees of the college, along with a process that enables administrators and faculty to acquire datasets, there was consensus among the Salt Lake employees that the college lacks adequate capacity to use data for continuous improvement. The Salt Lake Institutional Research office personnel who were interviewed by the OCCRL team were confident in their skills to conduct any type of research that would be needed by personnel at Salt Lake, but their expertise was not matched by the capacity to provide such support. The institutional researchers reported being stretched too thin to engage in as many continuous improvement projects as they would like. Data gathered by the Salt Lake team through the TAACCCT Round One grant may provide additional insights into program improvement and data-driven decision-making.

**Sustainability planning.** The need to sustain a number of grant-funded strategies, including career coaching, employer engagement, placement in internships and employment, and so forth, was a concern for the team. For example, the ramp-up of employer contacts by members of the grant team was phenomenal, but the ability to maintain these contacts after the partnership ends is uncertain. Team members’ interest in using return on investment studies to document the cost effectiveness of student supports and online textbooks may give campus leaders the chance to see why sustainability would be beneficial to the college.
RECOMMENDATIONS

Throughout OCCRL’s evaluation of the colleges’ implementation of NISGTC, it became evident that the pace, scope, and outcomes of strategy implementation varied considerably across the consortium. Both the implementation evaluation summary table found in Appendix A and the preceding sections in this report highlight the unique opportunities and challenges at each institution that became apparent during the course of the grant period. Nevertheless, certain cross-college themes also began to emerge during OCCRL’s evaluation. The purpose of this section is to provide the consortium with overarching recommendations which, while not necessarily applicable to each college to the same extent, we hope will be beneficial to the colleges in their efforts to sustain and scale the reforms that emerged from the NISGTC strategies and activities.

Develop Strong Partnerships

Through the efforts of the consortium the NISGTC colleges had expanded their employer partnerships. However, there was a clear need to continue to develop and utilize partnerships to sustain and spread the programs and strategies initiated through NISGTC. Included was a need to develop both internal partnerships within the college or college district, and external partnerships with employers, industry representatives, and community based organizations. Employers interviewed at several sites expressed a willingness for a broader and deeper engagement with the college. A more tailored approach to employer engagement is recommended, as although some employers will benefit from a more tempered rate of involvement, some employers appear to be more eager to contribute right away. Individually gauging the interest level of each employer may help to increase connections and opportunities with employers who wish for higher levels of engagement. Community based partnerships can be key for referring and suppling support services to targeted student populations. Additionally, community based partnerships may be able to provide access to resources needed by students such as computers and textbooks. Lastly internal partnerships are critical for building the endurance of efforts. Strong internal partnerships build buy-in and investment among other areas of the college and increase the likelihood that a program or strategy will be sustainable.

Data Utilization

NISGTC co-grantee colleges were strongly encouraged to increase the attention and efforts made to engaged in data analysis and utilization. Large amounts of data were gathered by co-grantee colleges’ in relation to their TAACCCT grant activities. However, at the time of the second round of site visits, the focus of data collection and utilization continued to be centered on the reporting of performance results to the Department of Labor. In interviews conducted on-site, limited description was provided of use of data beyond required performance reporting. In instances where individual faculty and staff mentioned using data to enhance grant-funded programs of study, data use was limited to a single individual or small group of students who sought to improve advising or job placement. Data were often not tapped for analysis of program improvements or program impact on student outcomes. Importantly, leadership at multiple colleges reported not being aware of the data that is being gathered through the grant, limiting potential advocacy for sustainability of programs of study and strategies at these colleges.

Sustainability Planning

NISGTC co-grantee colleges were encouraged to develop or enhance their sustainability plans utilizing the large amounts of data collected for performance reporting. It was suggested that a sustainability plan should be developed that utilizes data to create thoughtful and strategic opportunities to institutionalize programs of study and strategies initially produced by the grant. The consortium was encouraged to consider developing a common format that could be shared among the co-grantee colleges. Colleges were encouraged to seek opportunities to institutionalize some of the new practices and programs that have been developed through TAACCCT. The importance of sustainability planning for strategies that involve ongoing staffing such as career coaching and tutoring was emphasized. It was emphasized that colleges will need to develop a case to support these expanses, either through a demonstration of the impact and or a cost-benefit analysis. Colleges were also encouraged to continue to foster working relationships with units within the college and with other co-grantee colleges that had been developed through NISGTC.
APPENDIX A
Implementation Evaluation Tables
<table>
<thead>
<tr>
<th>Bellevue College (BC) Implementation Activities</th>
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<tbody>
<tr>
<td><strong>Implementation Activities</strong></td>
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</tbody>
</table>
| Outreach and recruitment plan | • Basecamp  
• Notebook provided to OCCRL team  
• Website: [http://www.bellevuecollege.edu/fasttracktoit/](http://www.bellevuecollege.edu/fasttracktoit/)  
• Workforce Education on campus has helped with recruitment | • Efforts continue to deepen and spread outreach and recruitment to underserved populations  
• Person in charge of workforce education provided overview of the coordination of 9 advisors serving four large grants serving similar student population  
• The State has a strict “fair broker of services” agreement and as such, cannot refer TAA eligible individuals to BC or any other specific educational provider  
• Grant team works closely with the Worker Retraining unit at BC that refers to the department when interest in IT is expressed | • Career Coaches and workforce unit personnel reported close interaction and cross-referrals as needed by students.  
• Outreach for IT programs and NISGTC specifically to more diverse populations.  
• Expansion of programs at Everett Community College (EVCC) including the addition of several TAA participants.  
• This function at EVCC was only recently staffed to the point at which they could expand their outreach and recruitment in the large area it serves. |
| Career coaches | • Interviews with three Career Coaches and multiple other stakeholders concerning this function  
• Evidence of events and services in multiple well designed documents  
• Fast Track to IT Career Guide | • Interviews with multiple stakeholders reporting highly engaged Career Coaches performing diverse functions including overt outreach to employers and transition to work skills for students | • Career Coaches had taken on a more comprehensive role  
• Career Coaches was recognized as a critical function that has been added to the department and BC’s plan for sustainability |
| Social media – retention services and more | • Bi-weekly emails to participants to check on course progress, test results, grades, reminders of events, encouragement  
• Emails shared by a student and reviewed by evaluator  
• [Fast Track to IT website](http://www.bellevuecollege.edu/fasttracktoit) and Facebook account and LinkedIn accounts  
• IT tutoring | • Students and Career Coaches discussion of what is working  
• Flyers about social media training  
• Students’ high praise for Career Coaches’ attention and support; and high praise for tutoring  
• Social media is being used to contact recruiters and employers | • Students and employers mentioned using LinkedIn and finding it helpful career transition skills and as a job search aid  
• Career Coaches use it to make contact with social media-savvy employers and report job postings to students |
| Competency alignment | • Documentation on Basecamp  
• Interview with Program chair referenced the competency alignment, gap analysis and curriculum development | • Knowledge, skills, and ability analysis and gap analysis resulted in new courses and modules | • Knowledge, skills, and ability analysis and gap analysis resulted in new courses and modules |

OCCRL, University of Illinois at Urbana-Champaign
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<thead>
<tr>
<th>Bellevue College (BC) Implementation Activities</th>
<th>Sources of Evidence Maintained by the College</th>
<th>What We Found</th>
<th>How is it Different from the Previous Visit</th>
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</thead>
<tbody>
<tr>
<td><strong>Articulation agreements</strong></td>
<td>- Website refers to BAS degree programs</td>
<td>• Northeastern University Global Campus Coop model</td>
<td>• New BAS degrees in IT at East Washington for BC and Central Washington for EVCC</td>
</tr>
<tr>
<td><strong>Stackable credentials</strong></td>
<td>- Visual career pathway maps on websites</td>
<td>• Documentation provided by BC includes stackable credential material about professional and technical certificates</td>
<td>• Career Pathways website has clear pathways with credentials and degrees</td>
</tr>
<tr>
<td><strong>Virtual lab</strong></td>
<td>- Interviews with multiple stakeholders, including: instructors, student, and leadership.</td>
<td>• Top administrators stating the Virtual Lab will be sustained, given its scalability and ability to share with other institutions, increasing access for students and faculty.</td>
<td>• Increased use of Virtual Labs by faculty (50%) and expansion to EVCC</td>
</tr>
<tr>
<td><strong>Employer engagement</strong></td>
<td>- Interviews with NISGTC team, Career Coaches, and employers (4 interviews); emphasis on employers in close proximity to BC</td>
<td>- Targeting IT units of non-tech companies</td>
<td>• Expansion of use of Virtual Lab to Year Up – an effort to retain young adults and complete a post-secondary credential</td>
</tr>
<tr>
<td><strong>Employer engagement</strong></td>
<td>- Employers and recruiters are prominently included on the Fast Track to IT website</td>
<td>- Some companies that had not traditionally sought potential employees at BC have initiated contact with BC</td>
<td>• Verbal commitment from multiple stakeholders that the Virtual Lab will be sustained</td>
</tr>
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<td><strong>Employer engagement</strong></td>
<td>- Interview with Career Center staff showing coordination</td>
<td>- Employer partners cite the outreach by Career Coaches as a positive addition and a proactive approach</td>
<td>• Much more developed and comprehensive approach for outreach to employers</td>
</tr>
<tr>
<td><strong>Employer engagement</strong></td>
<td>- Targeting IT units of non-tech companies</td>
<td>- Employers see BC as a place to recruit a more diverse workforce</td>
<td>• Employer partners are “recent relationships” developed by current Career Coaches (some via a LinkedIn message)</td>
</tr>
<tr>
<td><strong>Employer engagement</strong></td>
<td>- Employers see BC as a place to recruit a more diverse workforce</td>
<td>- Faculty report more interest in 2-year graduates among local employers that used to favor 4-year grads</td>
<td>• BC reports that it is able to be “strategic” about its targeting the right companies to partner with and the ways it presents its graduates to employers; for example, inviting women in the IT industry to serve on panels to recruit more women into the field</td>
</tr>
<tr>
<td>Implementation Activities</td>
<td>Sources of Evidence Maintained by the College</td>
<td>What We Found</td>
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</table>
| Curriculum development    | • Submission of courses and modules for consortium review  
• Number of courses and when submitted for review (NTER) | • Curriculum development underway and submitted for editing | • There has been more curriculum developed, and this work is anticipated to continue through the next year |
| Partnership with affiliate community colleges | • Interview of Career Coach for EVCC  
• Inclusion of EVCC Career Coach on Fast Track to IT website  
• Interview with IT instructor who mentioned communications with two community colleges in WA  
• Replication of materials are specific to EVCC  
• Inclusion of EVCC in outreach and retention programs held at BC | • Partnership is functioning with Career Coach in place since 10/13  
• Career Coaches at each college report being a part of the same team | • Partner is fully engaged |
### Bunker Hill Community College (BHCC) Implementation Activities

<table>
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</table>
| Stackable credentials     | • Flyers explaining stackable credentials, advertisements to email and text links to get more information  
                             • Interviews with faculty on stackable credentials as modus operandi | • Visual career pathway maps that include stackable credentials in catalogs and on flyers, in plain view on the walls of the Career Coach’s office | • The combination of condensed-schedule Fast-Track courses and multiple credentials has created an attractive and motivating pathway for students which has been observed by the BHCC in general as having potential for broader scaling, once the lessons learned from the grant in course approval, scheduling and outreach have been incorporated in the IT programs. |
| Fast-Track model          | • Interviews with program leadership, dean, students  
                             • Course catalog sheets identify fast track programs and list courses  
                             • A frequently asked questions sheet/flyer that explains Fast-tracking  
                             • Interview with the condensed courses committee members | • The completion rate was high. There was full enrollment and high demand for an additional course. It was reported that other deans in other departments are considering replicating the model. | |
| Virtual labs 2/4/2013     | • Interviews with faculty, technical support staff, students and administrators  
                             • Physical location | • BHCC has an isolated environment in which to create courses and curriculum, and the independent virtual space offers an opportunity for students to experiment, hack and compute safely without fear of losing or damaging data the computer systems  
                             • Through the virtual labs The IT Leadership mentioned that there is also the opportunity to scale the virtual labs, with the possibilities ranging from extending lab usage to other departments, such as engineering, or even leasing out the virtual labs to other partners. | • IT Leadership and faculty reported that the program has tripled and that the Virtual Labs are being used in three courses. |
### Bunker Hill Community College (BHCC) Implementation Activities

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</table>
| Career advising/coaching  | • Interviews with Career Coach, and multiple other stakeholders regarding this function  
• Multiple documents containing information regarding events and services  
• Annual Unit Plan  
• President’s message indicates that positions will be sustained | • Position written into the Annual Unit Plan  
• Student Career Plan worksheet  
• Flyers on career focused events (LinkedIn, resume clinics, identifying employers, part-time employment, career fairs, and walk-in individual coaching sessions) | • Position written into the Annual Unit Plan |
| Curriculum development    | • Interviews with faculty, staff and leadership  
• Flyer advertisement  
• PowerPoint presentations provided by BHCC outlining their progress in implementation their NISGTC SOW | • There is a curriculum spreadsheet that shows their status then and now | • Four courses in mobile applications were created; CC college developed iOS based mobile apps course because BHCC did not have a subject matter expert  
• One entrepreneurship course/modules were developed |
## Collin College (CC) Implementation Activities

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<tbody>
<tr>
<td>Virtual labs</td>
<td>• Grant leadership interview&lt;br&gt;• Labs (physical facilities)&lt;br&gt;• Technical developer interview&lt;br&gt;• Technology/ Curriculum demonstration&lt;br&gt;• List of courses that use the virtual lab&lt;br&gt;• List of labs&lt;br&gt;• Data from labs (reported in the QPR)&lt;br&gt;• $480K for equipment for vlab plus other devices purchased under supplies because the items did not have to be used together, not including ongoing maintenance and other costs&lt;br&gt;• Student course file with date of first implementation (cross-list to courses in student records)&lt;br&gt;• Usage data report&lt;br&gt;• Videos on You Tube</td>
<td>• Three phases of implementation&lt;br&gt;• Fall 2012 – up to minimum to implement&lt;br&gt;• Spring 2013 – implementing CISCO VLs&lt;br&gt;• Spring 2014 – increase capacity of all systems (both types of courses)</td>
<td>• Reported increase of faculty adoption of virtual labs&lt;br&gt;• Faculty report that Netlabs, which increase access, and the additional equipment, which increase capacity, are two of the most impactful TAACCCT inputs&lt;br&gt;• Capacity greatly increased; Grant will fund equipment and maintenance thru 9/30/2015. Collin IT will take over support then.&lt;br&gt;• Sustainability planning for virtual lab began fall 2013 with finalization beginning spring 2014</td>
</tr>
<tr>
<td>Capstone – virtual internships</td>
<td>• Grant leadership interview&lt;br&gt;• Faculty interview (both visits – pilot and implementation)&lt;br&gt;• Student interview&lt;br&gt;• Video of the capstone presentations (website)&lt;br&gt;• Course syllabus&lt;br&gt;• Pilot documentation posted on Basecamp (March 5, 2014)&lt;br&gt;• Policies posted on Basecamp</td>
<td>• Pilot capstone: All 3 students completing the virtual internship were hired in new jobs&lt;br&gt;• Next capstone: 16 students, 2 instructors&lt;br&gt;• Faculty state they are on board with virtual internships</td>
<td>• Capstone courses not in place during initial visit in January 2013, but were implemented during spring semester 2013.&lt;br&gt;• Information on the virtual internship pilot conducted at CC was shared via Basecamp with co-grantee colleges in January 2014.&lt;br&gt;• Virtual internships were conducted, with ideas for improvement being shared among program leaders and faculty (a total of 3 cohorts so far)</td>
</tr>
</tbody>
</table>
### Collin College (CC) Implementation Activities

<table>
<thead>
<tr>
<th>Implementation Activities</th>
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</tr>
</thead>
<tbody>
<tr>
<td>IT boot camps</td>
<td>• Flyers</td>
<td>• 2-hour workshops; Faculty and business deliver; Focus on women in IT</td>
<td>• IT Boot camps not yet launched during initial visit; two boot camps consisting of 1- to 2-hour sessions had been conducted during year three of the grant</td>
</tr>
<tr>
<td></td>
<td>• Student participant sign-in sheets</td>
<td>• Very brief overview of technology hands-on experience is required in a boot camp; instructors cannot do these without preparation</td>
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<td></td>
<td>• Videos (available on NISGTC - You Tube channel; students, 22 minute video)</td>
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<tr>
<td></td>
<td>• Faculty instructor interview</td>
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<td></td>
<td>• Employer instructor interview</td>
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<td>• 2-hour workshops; Faculty and business deliver; Focus on women in IT</td>
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<td>• IT Boot camps not yet launched during initial visit; two boot camps consisting of 1- to 2-hour sessions had been conducted during year three of the grant</td>
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<td></td>
<td>• Boot camp documentation was shared with co-grantees and placed on basecamp August 2013</td>
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<tr>
<td>Career advising/coaching</td>
<td>• Grant leadership interview</td>
<td>• Career Coaching is on target; they are 25 students shy of opt-in recruitment total shown in no-cost extension</td>
<td>• Increasing volume of tutors (increase from 0 tutors to 7 tutors) and reported increase of importance to and reliance of students on tutors (faculty report tutors one of 3 most impactful inputs of the grant)</td>
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<tr>
<td></td>
<td>• Career Coaches interview</td>
<td>• More employers committing to job fairs – Career Coaches reported a previous job fair where 16 employers committed and 8 showed, and a recent job fair where 30 committed and 28 showed</td>
<td>• Increasing number of Career Coaches (6)</td>
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<tr>
<td></td>
<td>• Student interview</td>
<td>• Students noted that Career Coaches are the best use of grant money they also valued grant paying for Transcender test prep software</td>
<td>• Employer reports of personal relationships developed with Career Coaches; Students noted value of grant and declared that without the grant they would not have a job</td>
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<tr>
<td></td>
<td>• Employer interview</td>
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<td>• There has been a college-wide change to Career Coaches</td>
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<td></td>
<td>• TrackVia demonstration</td>
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<td></td>
<td>• Materials for Career Coach success meeting in Bellevue, WA (workshop document)</td>
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<td>• Job fair pictures, with Career Coaches in picture</td>
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<td></td>
<td>• Flyers and posters list Career Coaches</td>
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<td>• NISGTC Newsletter lists names</td>
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<td></td>
<td>• Links from NISGTC website for Career Coaching (names and direct contact information listed)</td>
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<td></td>
<td>• Tutors listed as well</td>
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</table>
### Collin College (CC) Implementation Activities

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</thead>
<tbody>
<tr>
<td>BILT – curriculum alignment with industry</td>
<td>• NISGTC Newsletter</td>
<td>• Meets quarterly, KSA analysis conducted once a year</td>
<td>• BILT for networking is a combined BILT for the NSF CTC grant and NISGTC. As such, it is likely that it will continue through 2020. No funding is technically needed for BILT as national work can be done virtually.</td>
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<tr>
<td></td>
<td>• BILT - notebook with all the meeting minutes</td>
<td>• Cybersecurity and Networking BILTs will continue past the grant, the programming and GIS BILTs may not; CC leads Networking; Moraine leads cyber; DelMar leads GIS; Bunker and Bellevue lead Programming</td>
<td>• Replication and customization at each co-grantee college</td>
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<tr>
<td></td>
<td>• NISGTC page dedicated to the BILT</td>
<td>• Mentors for capstone course found thru BILT</td>
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<td></td>
<td>• DOL postcard</td>
<td>• BILT members have hired graduates</td>
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<td></td>
<td>• Grant leadership interview</td>
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<td>• Career Coaches interview</td>
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<td>• CC Deans interview</td>
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<td>• You Tube videos posted- part of the NISGTC channel</td>
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<td>• KSAs</td>
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<td>Stackable credentials</td>
<td>• Programs of study inventory</td>
<td>• Credential sequences identified and communicated by Career Coaches and advisors</td>
<td>• Existing and new credentials have been implemented and institutionalized in existing and new Programs of Study</td>
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<tr>
<td></td>
<td>• Lists provided to OCCRL by student ID and date</td>
<td>• Certificates awarded to students</td>
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<td>• Verification in course catalogs</td>
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<td>• Visuals that show how credentials stack</td>
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<td></td>
<td>• Interviews with college and program leadership</td>
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<tr>
<td>Curriculum development – Networking and communication, and Programming</td>
<td>• Hired contract editors to do reviews and confirm materials are ready for being completed and posted on NTER</td>
<td>• There are curriculum review backlogs that are causing delays in course completion for NTER in order to ensure Open Source and quality for all courses going up on NTER; however, Rio’s queues were never empty</td>
<td>• Substantial work on curriculum underway at CC both from standpoint of the college and the leadership of the consortium</td>
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<tr>
<td></td>
<td>• List of courses from Christina</td>
<td></td>
<td>• Efforts are being made to smooth and expedite the curriculum development process, which got off to a slow start among some co-grantee colleges, primarily due to difficulties understanding open source requirements despite training.</td>
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<tr>
<td></td>
<td>• Course materials</td>
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<td>• Course syllabus for the 5 courses developed by CC</td>
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</table>
## Del Mar College (DMC) Implementation Activities

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<tr>
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</tr>
</thead>
</table>
| Outreach and recruitment  | • Executive leadership, grant leadership, support staff, students, employer, and workforce development interviews  
|                           | • Event posters, flyers, log, and attendance lists including those used for IT boot camps, community events (GIS day, job fair, music events, etc.), and campus events  
|                           | • DMC’s [Geographical Information Systems](#) website  
|                           | • NISGTC geospatial posters and flyer  
|                           | • Geospatial Facebook pages, LinkedIn group, ads, and analytics  
|                           | • QGIS Academy website and analytics  
|                           | • Email blasts & Hipcricket messages  
|                           | • Networking and one-on-one meetings with potential students  
|                           | • Bootcamp pre-and post-assessments  
|                           | • Campus announcements and press releases via the DMC website | • Public service and program announcements via radio, TV, direct emails, community presentations, community events, major community concert events, targeted Facebook ads, and engagement via the Costal Compass mall front location are tactics being used to reach potential non-traditional students  
|                           | • On campus recruiting through posters and flyers distributed throughout campus  
|                           | • IT Bootcamps targeting students with low-skill levels in IT  
|                           | • Direct outreach to community-based organizations and business regarding training opportunities | • Recruitment efforts have expanded even as efforts to support career advising and placement have been developed. IT Bootcamps were being planned, but not yet implemented at the first visit and have since been implemented |
| Virtual labs              | • Executive leadership interview  
|                           | • Labs (physical facilities)  
|                           | • List of labs  
|                           | • Student use data reported in QPR  
|                           | • Student course file with date of first implementation (cross-list to courses in student records)  
|                           | • Usage data report | • The grant leadership, interim dean and new interim chair of the Computer Science department support the implementation of virtual labs  
|                           | | • They reported that the increased capacity offered by the virtual labs is helping faculty embrace this new technology in their courses, which includes CISCO |
|                           | | • During the first visit evaluators identified the virtual labs in the early stages of implementation  
|                           | | • The college was in the bidding process to install a second round of equipment  
|                           | | • The equipment was installed and was being used in more courses this fall |
# Del Mar College (DMC) Implementation Activities

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</thead>
</table>
| Career advising and coaching | • Notes from Career Coach Meeting  
• Geospatial LinkedIn group  
• Career and employment information provided by certificate and degree on the DMC website | • One-on-one advising and job preparation supports, as well as personalized support with planning for transfer  
• Job readiness workshops  
• Visits to classes to share information about services with students  
• Collaboration between staff and faculty to provide students supports and to encourage students to engage with career pathways and not just short-term goals and certificates  
• Integration of career knowledge, soft-skills, and job readiness skills into curriculum | • Career advising services were primarily in planning stages at the time of the first visit.  
• DMC is in the early stages of implementation with their career advising services and is continuing to rapidly develop and deploy services |

| Engage industry leadership | • IT leadership interview  
• Geospatial LinkedIn group  
• Records from BILT  
• Geospatial LinkedIn group | • Business and Industry Leadership Team (BILT) meets quarterly, KSA analysis conducted once a year  
• Curriculum built on GTCM and Meta-DACUM curriculum guideline through GeoTECH that was validated by the NISGTC GIS BILT.  
• Local industry partnership in community events, internships/mentorships, capstone courses, adjunct teaching, and curriculum development (local advisory board) | • The teams historic connection to the NSF GeoTECH center and grant supported development of the national Geospatial BILT has allowed DMC to build industry and business relationships on the local, regional and national levels |
<table>
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<tr>
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</table>
| New and enhanced IT curriculum and instruction | • Grant team, faculty, student and support staff interviews  
• QGIS website  
• Course syllabus  
• Student level course data  
• Program flyers  
• POS Inventory  
• Online course catalogs and program information  
• Course description handouts | • Fast Track GIS program (5 bridge course foundation courses for IT)  
• Integrated academic and peer mentor support through Lab Technicians / Teaching Assistants  
• Lab Technicians and Teaching Assistants schedules are partly fixed and partly flexible, allowing the assistants to adjust their schedule based on student availability and need  
• GIS integration into Geology Department and Business Department  
• Accelerated courses (16 weeks reduced to 8 weeks) being adopted department wide over the next 2 years  
• Introductory courses are offered in intensive 4-5 week courses.  
• Building towards competency-based curriculum  
• Course scheduling, online course provision, and expanded open lab hours to accommodate students work and family obligations  
• One-on-one text interactions between students, faculty, and staff to answer questions, offer support, or provide information  
• QGIS program | • DMC’s Fast Track program was in the early stages of implementation during our first visit. DMC’s educational partnerships for their GIS coursework is new  
• The integration of non-credit and credit coursework was being developed during the first meeting, but has since been more fully implemented  
• The Lab Technicians and Teaching Assistant role was developed since the first visit  
• The use of the QGIS platform and associated coursework fully open source coursework has been developed since the previous site visit |
| Virtual internships | • Executive leadership and team interviews  
• Employer interviews | • DMC college is planning to, but has not yet, implemented virtual internships | • DMC was planning to provide virtual internships for students |
<table>
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<tbody>
<tr>
<td>Virtual labs</td>
<td>• Grant leadership interview</td>
<td>MVCC is the lead college for Technology in the consortium</td>
<td>• Reported increase of faculty adoption of labs. As of 3/31 the consortium had 19,000 uses, and MVCC had 11,678.</td>
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<tr>
<td></td>
<td>• Labs (physical facilities)</td>
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<td></td>
<td>• Technical developer interview</td>
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<td></td>
<td>• Student and graduate interviews</td>
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<td>• NISGTC overview flyer</td>
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<tr>
<td>Capstone – virtual internships</td>
<td>• Grant leadership interview</td>
<td>Virtual internships are a component of programs by design but the robust traditional college internship program supported by the career development function is the preferred option</td>
<td>• Virtual internships have been developed but with limited potential for sustainability given the success of traditional internship placement in IT at MVCC</td>
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<tr>
<td></td>
<td>• Faculty interview</td>
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<td></td>
<td>• Student interviews</td>
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<tr>
<td>IT boot camps</td>
<td>• Faculty instructor interview</td>
<td>A second IT boot camp is scheduled.</td>
<td>• IT Boot camps launched during April of 2014 with second scheduled for September 26, 2014</td>
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<tr>
<td></td>
<td>• Career Coaches interview</td>
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<tr>
<td>Career advising/coaching</td>
<td>• Grant leadership interview</td>
<td>Career Coaches have a developed methodology, materials, and implemented TrackVia for (and supported its extension to other consortium partners)</td>
<td>• The career coaching function provided a comprehensive set of activities and support for students</td>
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<td></td>
<td>• Career Coaches (Success Team) interviews</td>
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<td></td>
<td>• Student interview</td>
<td>Career Coaches are integrated within the college</td>
<td>• Career coaching was consistently reported as one of the most effective and impactful aspects of grant activity</td>
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<td></td>
<td>• Employer interviews</td>
<td>Partners (i.e., internships)</td>
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<td></td>
<td>• TrackVia demonstration</td>
<td>There is a robust partnership with campus internship placement</td>
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<td></td>
<td>• Workshop (i.e., Job Readiness, mock interviews) attendance punch Cards for prizes highlighted in NISGTC newsletter</td>
<td>MVCC is behind on HipCricket, found it to be too intrusive</td>
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<td></td>
<td>• Student Success Team’s Career Preparation Guide</td>
<td>NISGTC website has been linked although reported MVCC website was more often used</td>
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<td></td>
<td>• Flyers and posters list Career Coaches</td>
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<td>• Flyers for programs of study and related stackable credentials include contact information for Career Coaches</td>
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<td></td>
<td>• NISGTC newsletter lists names and describe available services</td>
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## Moraine Valley Community College (MVCC) Implementation Activities

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<thead>
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</tr>
</thead>
</table>
| BILT – curriculum alignment with industry | • Observation of Professional Development Cohort program with industry leader presentations and networking lunch  
• Grant leadership interview  
• Career Coaches interview  
• CC Deans interview  
• NISGTC flyer | • The involvement of industry is enhanced through the partnership with the Illinois Technology Foundation | • MVCC has benefited from the national partnerships created by BILT, have more than 40 regional partners and have established a strong partnership with the Illinois Technology Foundation |
| Stackable credentials | • Flyers available in hallways for POS and related stackable credentials with contact information for Career Coaches  
• Industry certification testing descriptions, lab space, and flyers  
• Verification in course catalogs and schedule  
• Visuals that show how credentials stack  
• Interviews with college and program leadership | • Credential sequences identified and communicated by Career Coaches and advisors; Certificates awarded to students.  
• On-site industry certification testing center established. | • Existing and new credentials have been implemented and institutionalized in existing and new programs of study |
| Curriculum development | • List of courses from POS inventory  
• Course materials  
• Course and program descriptions  
• Curriculum and credential flyers  
• Faculty interviews  
• Interviews with college and program leadership | • Reported that all courses have been completed with final course, under review by consortium  
• Completion for NTER | • Completion of MVCC’s curriculum efforts |
<table>
<thead>
<tr>
<th>Rio Salado College (RSC) Implementation Activities</th>
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</thead>
<tbody>
<tr>
<td>Recruitment efforts</td>
<td>Interviews with CBO partners, workforce partners, grant project staff, faculty, and community outreach staff</td>
<td>No referrals from One-Stops</td>
<td>Affiliate Maricopa colleges considering the continuation of offering Boot Camps</td>
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<td></td>
<td>Copies of recruitment flyers</td>
<td>Multiple materials, readily available and multiple efforts to connect but limited results</td>
<td>Career Coaches targeting students with IT course work that might have the ability to complete programs/degrees by end of grant</td>
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<td></td>
<td>Online intake form</td>
<td>IT boot camps were offered but will not be continued at RSC; determined to be not the most efficient way of recruitment</td>
<td>Staff determined that methods that include some form of personal contact is the best way to recruit students into programs</td>
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<td>Success coaches are active</td>
<td>Career Coaches contacting students not enrolled in last classes but who could complete a credential within grant time period</td>
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<tr>
<td>Web-enabled contextualized bridge courses in math, reading, English</td>
<td>Course catalogue includes courses</td>
<td>Contextualized bridge courses are part of the Skill center curriculum and are available on RioCommons and NTER for students who self-identify and/or are referred by faculty and Career Coaches</td>
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<td>Courses are also available for co-grantees who wish to use them</td>
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<td>Bridge courses critical part of curriculum at area skill centers, providing access to IT programs for lower skilled populations</td>
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<td>Have impacted more than 780 students (not all NISGTC participants) who have accessed them on RioCommons</td>
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<td>Retention services/tools using social media</td>
<td>Interviews with grant staff, Career Coaches, and students</td>
<td>Analytics for FB and a survey</td>
<td>The grant program Facebook page was redesigned as a members-only site due to difficulties with public postings</td>
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<td>LinkedIn page will be not be maintained based on little to no use of LinkedIn</td>
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<td>RSC has a Facebook page for the grant used to distribute messages to current students (not open to the public)</td>
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<td>Only 7 people on HipCricket, reported not to work well</td>
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<td>Tutors and Career Coaches in labs or nearby for students’ easy access</td>
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<td>Job postings are part of the site as well as communication with Career Coaches</td>
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<td>Hip Cricket limited use, not planned for sustained use</td>
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<td>Align competencies for articulation to advanced educational opportunities</td>
<td>Interviews with grant project staff, curriculum developers, and faculty</td>
<td>Auto award process in place.</td>
<td>New and enhanced articulation agreements.</td>
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<td>Copies of articulation agreements</td>
<td>New articulation with Touro International University, enhanced articulation with Western Governors University and in progress with Northern Arizona University.</td>
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<td>Competency models completed for networking, mobile apps, cybersecurity and entrepreneurship</td>
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<tr>
<td>Rio Salado College (RSC) Implementation Activities</td>
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</table>
| Engage industry leadership to align skills and competencies | • Minutes for advisory council meeting  
• Interview with employer and partnership outreach staff | • Employers reported participation in developing knowledge, skills, and abilities (KSA) analysis  
• RSC has long history of seeking and receiving employer input  
• There are over 40 employer partners  
• New partners are being added (ex. Copper Point) | • Courses reflect KSAs.  
• New partner excited about working with college |
| New and enhanced IT curriculum and instruction | • Interviews with faculty, instructional designer, and curriculum developers  
• Process documentation for curriculum development  
• Flyers for programs of study | • Redesigned curriculum  
• FastTrack process in place  
• VLabs popular with faculty and students | • RSC has loaded 41 courses onto NTER at time of visit; waiting on 25 courses from consortium partners to design for NTER upload  
• Affiliate college faculty (Maricopa Community College District) very supportive of RSC and curriculum they have developed  
• RSC will continue to use RioCommons after grant period for contextualized courses in English, Math and Reading and the Student Success Seminar |
| Career pathways and create industry-recognized IT credentials | • Interviews with grant program staff, faculty, and students | • Certifications offered on campus.  
• Local programs have been implemented. | • RSC now a CompTIA Authorized Academy; able to offer cert exams to students at half the normal cost  
• Qualifying students can receive a voucher to pay for cert exams; this was accomplished by leveraging another grant |
| Hands-on & technology-enabled training delivery mechanisms to improve learning | • Laboratory tour  
• Interviews with students, faculty, tutors, and grant program staff | • Students reported positive employment outcomes based on credentials and program | • V Labs very popular with students and faculty at RSC partner colleges  
• Employer partners attended a demo of new technology; are impressed with it |
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| Outreach and recruitment  | • Grant team, staff, and student interviews.  
• Event posters, flyers, brochures and attendance lists/logs including those used for IT boot camps, community events and campus events  
• SLCC Geoscience Programs website  
• SLCC Geoscience Weebly website and analytics  
• Student success manual  
• Course enrollment from student data  
• Facebook analytics | • SLCC is using a combination of in class presentations, presentations to advisors, boot camps, student success orientations, flyers, direct targeted mailings, and an informative website to attract students to their TAACCT impacted programs of study  
• SLCC is also now offering the first online GIS program of study in Utah  
• Enrollment in online equivalents of courses is outperforming the face-to-face evening courses traditionally offered by the department  
• SLCC implemented an online intake process for the grant, making the grant intake process easier for students and staff  
• SLCC has developed an online GIS program of study; the initial course offerings in this program have been popular with students, without decreasing participating in face-to-face courses. | • SLCC had recently developed its first set of marketing materials and started initial recruitment efforts at the first site visit; these activities have become more refined and have grown notably in all areas from the previous visit  
• SLCC has been able to expand the students that are serving through online delivery of GIS program of study |
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| **Career advising and coaching** | • Grant team, staff, employer, and student interviews  
• Tutoring and geosciences open lab usage statistics  
• Observations from Career Coach Meeting  
• Tutoring chat function and description on SLCC geosciences programs site  
• Program outline and videos on SLCC geosciences programs site  
• TrackVia student contact data  
• Monthly/bi-monthly Weebly newsletter with job openings and associated analytics  
• Collaboration between grant staff and college career services to engage students in career advising workshops, electronic newsletters with occupational descriptions and opportunities, expanded internship opportunities and educating advisors on the occupational pathways for students in geoscience programs were described as means of helping students be better prepared and aware of the occupational and labor market value of credentials in geosciences  
• While all students can take advantage of tutoring services, tutors use students ongoing GPA to proactively target services to students with a GPA of 2.3 or lower | • The grant staff have developed a collaborative relationship with college career service staff, improving the college’s overall ability to serve these students (improved advising, expanding industry relationships, expanded listings of job opportunities, and improved relevance/use of career workshops presented by college staff)  
• College support services are supplemented by a growing offering of tutoring for geospatial students  
• Grant supported tutoring program that was initiated in Spring of 2013 | |
| **Engage industry leadership** | • Grant team, staff, employers, college leadership, and student interviews  
• Trackvia partner contacts and list  
• SLCC Geoscience Weebly website and analytics  
• GIS and Geomatics Program Advisory Committee records  
• Geosciences Business and Industry Leadership Teams | • SLCC worked to develop new employer relationships; primarily through in person meetings between grant staff and employers throughout the community at the employer’s place of business | • SLCC reported developing 223 new business, industry, and community relationships over the last year and a half  
• Employers’ engagement with the TAACCCT impacted programs of study has expanded to include development of new curriculum, new internship opportunities, participating in career advising activities (fairs, mock interviews), mentoring, and adjunct teaching |
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| New and enhanced IT curriculum and instruction                                            | Grant team, staff, employer, SLCC leadership, and student interviews               | • SLCC has developed six new advanced GIS courses  
• Two of the GIS courses were offered fully online for the first time in the fall of 2014. SLCC is planning to offer three additional courses in the spring of 2015  
• SLCC has integrated web enabled bridge modules into GIS courses and have made them available as supplemental material to provide just-in-time supports to students as needed  
• SLCC is offering the first fully online program of study in GIS in the state of Utah                                                                                     | • There are curriculum review backlogs that are causing delays in course completion for NTER |
| Virtual internships                                                                      | Grant team interviews, staff, and student interviews. SLCC [Geoscience Weebly](https://www.geoscience.utah.edu) website and analytics | • Because of the hands-on nature of the geoscience fields, the program elected to provide an online internship course in collaboration with the college’s internship coordinator where students can engage in local internships but participate in coursework virtually  
• SLCC utilizes [virtual job shadowing](https://www.geoscience.utah.edu)                                                                                                         | • SLCC had no virtual internships or job shadowing at our previous visit           |
### Salt Lake Community College (SLCC) Implementation Activities

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| Virtual labs              | • Grant team, staff, employer, college leadership, and student interviews  
                         | • Data from labs (reported in the QPR)         | • The VMware software necessary to support the virtual labs is no longer supported by the college; resulting in a disruption in the function of the virtual labs  
                         |                                                                             | • The department acquired a VMware software license  
                         |                                                                             | • Problems with the college’s firewall security have impacted students’ ability to access the virtual labs off campus  
                         |                                                                             | • At this time the virtual labs are used in the SLCC computer labs only to expand the number of students able to engage in lab work at the same time.  
                         |                                                                             | • SLCC was in the early stages of integrating virtual labs into their courses at the time of the previous visit  
                         |                                                                             | • It is now anticipated that virtual labs will not be sustained post the grant concluding at SLCC |

Note: The term geosciences is used to reflect the TAACCCT impacted programs of studies in SLCC Geosciences that include surveying/geomatics, geospatial technologies (GIS), and geography.
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