Project Abstract

1. Applicant Name: Edmonds Community College – **INDIVIDUAL APPLICANT**

2. Applicant City/State: Lynnwood, Washington

3. Consortium Member(s) and Consortium Member State(s): N/A

4. Areas Served by Grant (by city, county, and state):

State: Washington **Counties**: Snohomish County and King County,

Cities: Seattle, Lynnwood, Everett, Edmonds, Mill Creek, Arlington, Brier, Bothell, Bellevue, Redmond, Kirkland, Woodinville, Auburn, Kent, Issaquah, Renton, Shoreline, Darrington, Seatac, Lake Forest Park, Gold Bar, Index

5. Total Funding Level Requested: $3,000,000

6. Sub-Total Requested Funding Amount by Consortium Member: N/A

7. Project Name: PACE-IT (Progressive, Accelerated Certifications for Employment in Information Technology)

8. Project Description and List of Credentials to be Developed and Awarded:

The priorities of PACE-IT (*Progressive, Accelerated Certifications for Employment in Information Technology)* are to 1) accelerate online, competency-based learning through stackable certificate programs that enable learners to acquire the skills and knowledge needed to obtain industry-recognized credentials and achieve labor market gains; 2) improve online student achievement through intensive virtual and on-ground supports; 3) build student knowledge through stronger engagement with employers; 4) strengthen pathways to high-wage, high-demand IT jobs across high-growth industries while providing seamless articulation to associate and baccalaureate degree programs. PACE-IT will offer individualized instruction and services for adult learners to support the diverse needs and backgrounds of the TAA-population in the King-Snohomish area. The innovative, self-paced training model will use instructors as mentors who will guide students online or face-to-face. Employers will serve as subject-matter-experts - intricately involved in

curriculum design and instructional support. Navigators will ensure students are accessing the supports needed to overcome barriers and find jobs. An on-campus technology "sandbox" lab, catering to online students, will provide a place for problem-solving activities, learning assistance, access to technology and networking. Students will have the option to be placed in IT internships, job shadow IT practitioners, or work on project-based learning assignments (on-campus and in the community); a capstone project will tie together learning with experience. The following table provides a list of credentials to be developed and awarded:

Certificates	Industry-Recognized Credentials
Computer Support Certificate	CompTIA A+ CompTIA Net+ CompTIA Server+ Certified Wireless Network Administrator (CWNA)
Network Security Certificate Ethical Hacker Certificate	CompTIA Security+ Certified Ethical Hacker Access Data Certified Examiner Certified Data Recovery Expert Cyber security Forensics Analyst
Web Development & Design Certificate	CIW Site Development Associate CIW JavaScript Specialist CIW Web Foundations Associate Microsoft Technology Associate – Software Development Fundamentals
Data Management Certificate	Certified Data Mgmt. Professional, Oracle Certified Professional Certifications, MSFT Certified Professionals- Data Governance, Cert Business Intelligence Professional, Cert Data Governance Professional, CIW Database Design Specialist

9. Populations to be Served: TAA-eligible workers, and Other Adults, including unemployed, veterans and incumbent workers

10. Targeted Industry(s): Information Technology (IT) employment spans multiple high-demand industries in Snohomish and King Counties: Manufacturing; Professional, Scientific, and Technical Services; Education and Health Services; State & Local Government.

11. Employer Partner(s): Non-Generic Technologies, The Seattle Times, City of Seattle, AT&T, Seattle City Light, The Boeing Company, Ed-Web Design, Inc., Institute for the Certification of Computing Professionals, Coalfire Systems, Hire America's Heroes, Snohomish County Department of Information Services, WatchGuard Technologies, Stoz Friedberg, Franciscan Health System, Philips Healthcare, The City of Redmond, Varolli Inc., Data Management Association - Puget Sound.

12. Public Workforce System Partner(s): Workforce Development Council of Snohomish County, Workforce Development Council of Seattle-King County, WorkSource Snohomish County, WorkSource Seattle-King County

13. Other Key Partner(s):

Western Governor's University, Central Washington University; Round 1 TAACCCT recipients: 1) Bellevue College, WA is a partner on Collin College's National Information, Security, and Geospatial Technology Consortium (NISGTC); 2) Spokane Community College's Air Washington (overlap in industry focus should provide opportunities to collaborate on participant outreach to the target population, providing workers with additional training options); and Washington State Board for Community and Technical College's Open Course Library (funded by the Gates Foundation) accessible to all 34 Washington State 2-year colleges.

14. Public Contact Information: Susan Loreen, Vice President of Workforce Development and Training, Edmonds Community College, (425) 640-1489, sloreen@edcc.edu

15. Percentage of OER Program Materials Developed vs. Percentage of Licensed or Purchased Program Materials: 100% of program materials will be developed as open educational resources.

16. Data Tags: accelerated learning, certificate attainment, job placement, on-the-job training, open educational resources, stackable credentials, industry certifications, online, self-paced, internships, competency based learning, industry training, certifications, information technology, navigators, subject matter experts, project-based learning.

SECTION 1. STATEMENT OF NEED

i. SERVING THE EDUCATION AND TRAINING NEEDS OF TAA ELIGIBLE WORKERS

A 2012 study conducted by Forbes/Praxis Strategy Group reported that the Seattle area is the best in the US for growth in tech jobs in high-tech sectors, as well as growth in science, technology, engineering and mathematics-related (STEM) jobs across all sectors.[1] The report states, "*The most consistent performer...is the Seattle-Tacoma-Bellevue, Washington metro area, which takes first place. Its 12% tech job growth over the past two years and 7.6% STEM growth beat the [Silicon] Valley's numbers. The Puget Sound region[2] boasts a remarkable 43% increase in tech employment over the decade and an 18% expansion in STEM jobs*". Edmonds Community College (EdCC), located 10 miles north of Seattle in Snohomish County, serves this high-tech corridor. More than 44% of the County's labor force commutes to neighboring King County for work. Progressive, Accelerated Certifications for Employment in Information Technology (PACE-IT) will help address this high-tech demand by training TAA impacted workers and other adults.

Impact of Foreign Trade: Over 10,000 residents in King and Snohomish counties have been included in TAA-certified petitions between 2007 and 2011, representing 57% of TAA-impacted worker population in Washington State.[3] Included in this population are thousands of high-technology workers that are experienced professionals, employed in industries that are cyclical and vulnerable to the impact of trade. Seventy-four percent (74%) of TAA-impacted workers in King and Snohomish counties were employed by manufacturing, wholesale and transportation companies that reduced front-line workforces or closed operations to shift production to other countries.

Information Technology. Since the dotcom crash, the media has fueled wide-spread fear that information technology (IT) jobs would be substantially reduced or eliminated from domestic payrolls due to global IT outsourcing. Since 2007, nine high-technology TAA petitions were certified in King and Snohomish

[1] Kotkin, J., "The Best Cities for Technology Jobs," Forbes. 17 May 2012. Retrieved Online: http://www.forbes.com/sites/joelkotkin/2012/05/17/the-best-cities-for-tech-jobs/
[2] Puget Sound region encompasses the major metropolitan cities of Seattle, Bellevue and Tacoma (King and Pierce Counties).
[3] Washington State Employment Security Department, "SKIES – TAA Petition Activity Report: 01/01/07-03/13/12."

counties, impacting over 350 workers. Sumtotal Systems Inc, outsourced software development and engineering services to India, displacing 100 IT workers; Serena Consulting displaced 40 IT workers when they moved software development to Ukraine; and, NYK Business Systems Americas displaced 50 IT workers by moving IT services to India **(TABLE 1).** The impact of global IT outsourcing and access to global talent cannot be understated as it structurally changed the skills and knowledge required by domestic IT workers. IT functions or occupations that require a physical on-site presence, perform (internal or external) customer-facing roles, require business-process or industry-specific knowledge, and project planning and management remain valuable for firms of all sizes. Despite the availability of global talent, companies are also cognizant of the need to continue to feed their domestic IT talent pipelines, hiring entry-level IT workers based on their technical skills and supporting career advancement through continuing education and the acquisition and development of business and soft-skills.

TAA-impacted workers formerly employed in high-technology industries or occupations require upgrades to their skills, as well as industry-recognized technical credentials in order to obtain re-employment in high-growth sectors. While companies across industries will continue to seek global talent to address their workforce needs, IT jobs across sectors will continue to provide TAA-impacted and other workers with a consistently growing number and variety of IT job opportunities in the two-county area.

Manufacturing. IT workers support the information and communication technology necessary to operate global supply chains. The reciprocal trade agreement between the US and China, in part, enabled the outsourcing of the production of Boeing's 787 Dreamliner, resulting in Boeing's petition for TAA certification in 2008 that impacted 5,000 workers.[4] Recently, Kimberly Clark closed its operations in Snohomish County,

[4]

Table 1. TAA Certifications: King & Snohomish Counties		
Employer	TAW	Determination Date
Boeing	70520	10/19/2009
Kimberly Clark	81097	12/16/2011
Continental Graphics Corporation	74745	2/17/2012
Sumtotal Systems Inc.	73202	5/26/2010
NYK Business Systems Americas Inc	74509	9/9/2010

impacting 760 manufacturing workers. Employment projections in the aerospace industry are optimistic but the manufacturing industry remains vulnerable to the impacts of trade and lower-cost global talent.

Partnerships with Applicable TAA Agencies: Edmonds Community College (EdCC) has long-standing, collaborative relationships with the Workforce Development Councils of Snohomish and King Counties (WDCs) and the one-stop system; they have partnered on numerous federally-funded projects. Provided that the public workforce development system, managed by the WDCs, is the entry-point for the majority of TAA-impacted workers, their active engagement in this project is essential in supporting recruitment of TAA-impacted workers, assessment for wrap-around services and other assistance that is not funded under this program. In addition, the WDCs as a member of the proposed project team will engage in ongoing project reviews, supporting continuous improvement processes to ensure that the target TAA-impacted population is well-served.

Education and Training Needs of TAA-Eligible Workers in Communities to be Served:

Potentially impacted TAA workers in the targeted service area represents 26% of the total statewide TAA-eligible worker population. The educational background and demographics of the TAA-impacted population in the project service area are highly diverse as shown in **TABLE 2**.

Table 2. TAA-impacted Workers – King & Snohomish Counties[5]

Education	% of TAA-impacted workers	Demographics	
None	.7%	Male	58%
Less than High School	4.7%	Disability	3.2%
High School/GED	34.7%	Veteran	11%
Some College	20.4%	Age 20-29	6%
Associates Degree	11.3%	Age 30-39	12%
Bachelors Degree	20.5%	Age 40-49	28%
Masters Degree	7.2%	Age 50-59	38%
Doctorate	.5%	Ages 60+	16%

Socio-economic characteristics of potentially impacted TAA populations in the two-county area highlight

[5] Smith-Rubeck, A. "TAA Participant Data Report for the Washington State Community and Technical Colleges." Customized Report. Policy, Technical Assistance & Grant Administration Workforce Standards & Integration Division, Washington State Employment Security Department. 15 Mar 2012.

opportunities and challenges to re-training and re-employment. Many trade-impacted workers have been out of school for a decade or more, worked in a particular occupation where jobs remain limited or have not obtained a college-credential. The majority of TAA-impacted workers were employed in wholesale trade, transportation, manufacturing, and information sectors. A small percentage (8%) of TAA-impacted workers has limited English language skills.[6] Workers with disabilities require accessible education options, supporting the use of universal design in online courses; which benefits a variety of learners.

Accessibility of Online Learning. Online learning provides flexible access to education and training programs. Coupled with services supporting persistence and completion and access to physical infrastructure of the college, TAA-impacted and other adults (unemployed; dislocated, incumbent, including under-employed) will be well served by PACE-IT. The experience of these workers in industry and the concentration of trade-impacted workers in technically-inclined occupations provide a foundation for re-training and placement into entry and mid-level IT occupations. Acknowledging the target population's work experience, paired with appropriate technical training and industry-recognized credentials, TAA-impacted workers will face fewer barriers to re-employment in a new occupation, while employers will benefit from their existing and newly acquired skills and expertise. While certificate programs do not require academic credits, TAA-impacted workers that intend to progress in their education to a 2 or 4-year degree may require this additional coursework.

ii. EVIDENCE OF JOB OPPORTUNITIES IN THE TARGETED INDUSTRIES AND OCCUPATIONS

Computer and mathematical occupations are employed by virtually all industries – from manufacturing to local government, employing over 100,000 information technology workers in the two-county area.[7] Requirements continue to increase for technology services, including mobile applications supporting accessibility to transactional websites housing products and services designed for both

[6] Ibid.
[7] Vance-Sherman. A. Ph.D., "Computer and mathematical occupational employment in King and Snohomish Counties." Employment Security Department Q2 2012, Customized Report. 18 Apr 2012.

Business to Business and Business to Consumer markets. In addition, data management and storage requirements are increasing exponentially (approximately 50% annually), supporting global, enterprise-wide systems, massive data warehouses and explosive growth in e-mail traffic; as well as providing valuable information to support business decision making – from forecasting orders and necessary product inventory to marketing goods and services to consumers. In addition, IT infrastructure must be secured due to regulations (protection of patient records to defense contractors) and protecting business revenue streams (e.g. websites with transactional capabilities), requiring skilled IT staff that understand the industry they are working for, associated regulations and the required provisions for ICT infrastructure security.

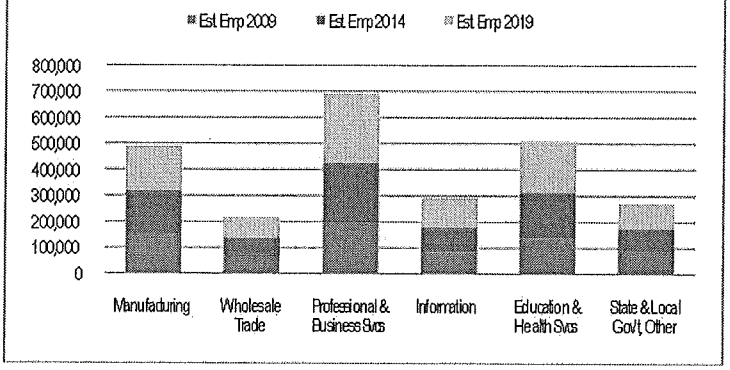
Identification of Targeted Industries and Occupations: PACE-IT will focus its efforts on six high-demand IT occupations, including: Computer Support Specialists; Computer Specialists; Computer Systems Analysts; Network Systems & Data Communications Analysts; Network and Computer Systems; and Computer Specialists, All Other. According to the Bureau of Labor Statistics, "employment in STEM occupations (which includes IT workers) is expected to expand faster than employment in non-STEM occupations from 2010 to 2020 (by 17% versus 14%)."[8] According to Washington's Employment Security Department, employment projections in computer and mathematical occupations overall in the two-county area; as well as state-wide are forecasted to grow at a rate of 2.7% between 2013 and 2018.[9] In addition, the continued growth in math and computer occupations, pending baby boom retirements, further exacerbates the demand for STEM workers, including information technology workers.

Employment in computer and mathematical occupations has consistently increased between 2009 and 2012, with continued growth forecasted. Employment of IT occupations spans multiple industries, including high-growth sectors in the two-county area: manufacturing, professional, scientific and technical services, education and health services and state and local government (**TABLE 3**). In the two-county area, these

[8] U.S. Congress Joint Economic Committee, "STEM Education: Preparing for the Jobs of the Future," (Washington DC. April 2012).
[9] Washington Employment Security Department, "Short-term occupational Projections," Retrieved Online at: www.workforceexplorer.com

high-growth sectors currently employ the greatest share of IT employees in the targeted occupations.[10] These industries have several common threads that compel continued hiring of IT professionals: 1) *Adoption and integration* to support business growth; 2) *Increased "product demand"* resulting in greater numbers of users and systems to support; 3) *Technology as a business-driver,* requiring IT professionals to be knowledgeable of the industry they work in and serve as go-betweens between business and IT stakeholders; 4) *Consumer demand,* requiring services and information accessible via mobile applications; 5) *Utilization of data*, requiring increased data storage and the ability to collect and organize data; and 6) *Regulations* that require firms to secure their networks and information assets.

Table 3. Industry Employment Growth Projections: King & Snohomish Counties



Employer Involvement. Engagement of employer partners will provide critical information on required skills, knowledge and abilities for targeted populations. Employers will actively engage in PACE-IT by reviewing curricula and providing information on future hiring and training needs. Industry will serve as subject-matter experts to assist in the development and instruction of new and re-designed online certificates. They will also support internships, mentorships, and assist with design of project-based learning activities; as well as interviewing qualified graduates for job openings.

Evidence of Employer Demand: ***"Computer and information technology*** occupations are projected to

[10] Vance-Sherman. A. Ph.D., "IT by Industry: Breakdown of SOC occupations by industry in Snohomish and King Counties," Labor Market & Economic Analysis Branch, Customized Report. 18 Apr. 2012

grow by 22%, adding 758,800 new jobs from 2010 to 2020. Demand for workers in these occupations will be driven by the continuing need for businesses, government agencies, and other organizations to adopt and utilize the latest technologies. Workers in these occupations will be needed to develop software, increase cybersecurity, and update existing network infrastructure."[11]

IT training and occupations provide excellent employment and advancement opportunities for TAA-impacted workers and other adult workers, including **veterans**. The demand for IT workers is good news for veterans as unemployment rates hover around 9.4% and 9.7% in King and Snohomish Counties respectively[12]. "*Probably the best thing to do coming out of the service – if they don't have IT certification in IT – would be to use the resources available to them to go back and get training for IT certifications,*" stated a representative of CompTIA."[13] The below table outlines short and long-term hiring trends in the occupations aligned with the certificate programs targeted under PACE-IT.

Table 4. Short & Long Term Occupational Projections (King & Snohomish Counties)[14]

Occupational Title	Est. Emp. 2012 Q2	Est. Emp. 2014	Est. Emp. 2019	Avg Annual Total Openings 2009-2014	Avg. Annual Total Openings 2014-2019
Total Computer & Mathematical Occupations	**96,906**	**103,989**	**118,750**	**3,986**	**4,850**
Computer Specialists	95,076	102,086	116,638	3,918	4,762
Computer Support Specialists	9,899	10,568	12,058	541	615
Computer Systems Analysts	10,737	11,246	12,445	458	513
Network & Computer Systems Administrators	5,631	5,964	6,640	210	250
Network Systems & Data Communications Analysts	9,536	10,739	13,041	571	695
Computer Specialists, All Other	6,681	7,035	7,650	266	293
Total Demand for Targeted Occupations :	**137,560**	**147,638**	**168,472**	**5,964**	**7,128**

Recently, there has been significant attention and resources directed to the aerospace industry in Washington State, driven by the sector's increase in hiring - including the Spokane Community College AIR

[11] Bureau of Labor Statistics, "Employment Projections 2010-2020," Retrieved Online: http://www.bls.gov/ooh/About/Projections-Overview.htm
[12] Vance-Sherman. A. Ph.D. "Estimated number of veterans in Snohomish and King Counties." U.S. Census Bureau, Customized Report. 18 Apr. 2012
[13] Downing-Peck, A. "When it Comes to Civilian Jobs...Veterans Get IT," G.I Jobs, Retrieved Online: 15 May 2012
[14] Vance-Sherman, A. Ph.D., "Occupational Projections for IT Occupations in Washington State, Snohomish County and King County," Washington State Employment Security Department, Customized Report: 18 Apr 212

Washington Consortium funded in the 1st round of TAACCCT projects (investments focused on occupations in aircraft assembly and repair). Although these projects address growing demands in manufacturing, they omit the correlating demands for IT workers in the industry that employs 7,417 IT workers in the targeted occupations; which represent 60% of aerospace's total IT staffing[15] in King and Snohomish counties. Boeing has added more than 7,000 employees to its Washington workforce since last December[16] and among these new hires are IT workers to support the information and communication technologies that the company relies on to operate a global business. According to David Brock, Senior Finance Manager at Boeing, "Since PACE-IT is competency based with an accelerated learning model, students should be well prepared for entry level jobs in our advanced manufacturing-intensive state".

Understanding of Skills Required in the Targeted Industries and Occupations: PACE-IT addresses employer workforce demands through the development of online certificate programs that enable participants to progress to a 2 and/or 4-year degree. TAA-impacted and other adults have prior work experience that brings a wealth of skills and knowledge that when coupled with technical skills certification proves valuable in the local labor market. Research conducted over the past decade repeatedly reinforces the need for IT workers to have business knowledge or industry competencies, [17] in addition to technical, academic and workplace competencies.[18] **TABLE 5** provides an overview of the skills and knowledge required to fill these high-demand jobs, across industry sectors.

Table 5. Skills & Abilities of Target Occupations

Occupation	Skills Required[19]
Computer Support Specialists	Provide technical assistance to computer users. Answer questions or resolve computer problems for clients in person, or via telephone or electronically. May provide assistance on use of computer hardware and software.
Computer	Analyze science, engineering, business, and other data processing problems to

[15] Vance-Sherman, A. Ph.D., "IT by Industry: Breakdown of SOC occupations by industry in Snohomish and King Counties," Labor Market & Economic Analysis Branch, Customized Report. 18 Apr. 2012
[16] Associated Press and KPLU News Staff, "Being employs 80,000; many more workers needed soon," 2011 Oct 24. Retrieved Online: http://www.kplu.org/post/boeing-employs-80000-many-more-workers-needed-soon
[17] Zweig, P. et.al. "Trends and Implications of IT Skills." MIS Quarterly Executive, Vol. 5. No. 2 / June 2006. Pp. 47-57. University of Minnesota.
[18] As described by the ETA-TechAmerica Information Technology Competency Model
[19] O*Net Online, "Occupations by Career Clusters: Information Technology," Retrieved online: http://www.onetonline.org/find/career?c=11&g=Go 15 May 2012

Systems Analysts	implement and improve computer systems. Analyze user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow, and scheduling limitations. May analyze or recommend commercially available software.
Network & Computer Systems Admini-strators	Install, configure, and support an organization's local area network (LAN), wide area network (WAN), and internet systems or a segment of a network system. Monitor network to ensure network availability to users and perform necessary maintenance to support network availability; monitor and test Web site performance, assist in network modeling, analysis, planning, and coordination between network and data communications hardware and software. May supervise computer user support specialists and computer network support specialists. May administer network security measures.
Computer Specialists, All Other	**Document Management Specialists:** Implement and administer enterprise-wide document management systems and related procedures that allow organizations to capture, store, retrieve, share, and destroy electronic records and documents. **Business Intelligence Analysts:** Produce financial and market intelligence by querying data repositories and generating periodic reports. Devise methods for identifying data patterns and trends in available information sources. **Web Developer & Designers:** Design, create, and modify Web sites. Analyze user needs to implement Web site content, graphics, performance, and capacity. May integrate Web sites with other computer applications. May convert written, graphic, audio, and video components to compatible Web formats by using software designed to facilitate the creation of Web and multimedia content. **Data Warehousing Specialist:** Design, model, or implement corporate data warehousing activities. Program and configure warehouses of database information and provide support to warehouse users

iii. GAP ANALYSIS

EdCC utilized existing organizational and (internal and external) relationships in its community outreach process, involving employers, the public workforce development system, The Washington State Board for Community and Technical Colleges and college faculty and staff to identify gaps and develop solutions resulting in the formation of PACE-IT. Between 2008-09 and 2012-13, EdCC lost roughly 28% of state funding, realizing a $7.8 million reduction to the College's state FTE allocation. Reductions over the same time period added to cuts to the College's operating budget, resulting in a total funding loss of $9.2 million or approximately a 30% decrease in state funding. These cuts impact the ability of the college to invest in changes needed to adapt to the needs of TAA-impacted and other adult workers. **A majority of the gaps identified by the stakeholders are a result of these budget issues (TABLE 6).**

Core Element	Table 6. Gaps & Required Areas of Improvement
Evidence-Based Design	-The community college system at-large remains **married to classroom-based, credit instruction**; while evidence supports educational models of improving student access to through online, competency-based programs. The current paradigm and model of offering programs is not flexible enough to meet the fluctuating demand and wide variety of TAA-eligible and other adults seeking education and training.
Stacked and Latticed Credentials	- Many separate degrees and certificate programs have evolved in an attempt to meet the various needs of students. As a result there is an absence of a coordinated approach to developing, re-designing and adding new degrees and certificates; **some 2-year programs lack short certificates that support re-training for job entry and others require added credentials to meet labor market-demands.** -The **manner in which current IT coursework is delivered (classroom-based, day programs) limits access** to TAA-eligible and other adults seeking education and career training in IT disciplines.
Online & Technology Enabled Learning	-College physical infrastructure (class-room and lab space) is limited, thereby **reducing access to education and training**. -Faculty-to-student ratio requirements for classroom instruction, often results in advanced class cancelations or rescheduling that **impedes student progression and completion**. -Due budget reductions, EdCC **cannot support expanding physical capacity or seed funds to invest in improved and expanded online program** offerings.
Transferability & Articulation	- According to a recent report "A Skilled and Educated Workforce, "at the aggregate level, Washington needs to add capacity at all education levels.[20] -While traditional transfer agreements exist; the **college lacks articulation agreements** supporting seamless transitions for students seeking to continue to a 4-year degree in online, competency-based learning format. -The impact of **increasing tuition at public 4-year universities pose barriers** to the pursuit of further education for TAA-impacted and other adult workers therefore new agreements must be forged to provide cost-effective and accessible forms of upper-division education for graduates of PACE-IT programs.
Strategic Alignment	**-Employers:** Employer engagements in IT certificate/degree programs are insufficient; resulting in outdated curriculum and insufficient student experiences **-Public Workforce System:** Serving the target population requires improved collaborative efforts to improve awareness of training and education options, supporting employer demands for entry and mid-level IT workers. **-Educational Institutions:** There is a deficit of open courseware and online programs in IT supporting student mobility and access to market-valued training. EdCC must make better use the Gates-funded open course library, housed at the WA State Board for Community & Technical College's central repository.

[20] Anonymous, "A Skilled and Educated Workforce: 2011 Update," State Board for Community and Technical Colleges, Higher Education Coordinating Board, Workforce Training and Education Coordinating Board Joint Report. Feb 2011.

SECTION 2. PROJECT DESCRIPTION: STRATEGIC APPROACH AND CORE ELEMENTS

i. Evidence-Based Design

Review of Evidence for Program Design: PACE-IT's foundation lies in moderate and preliminary **evidence-based design**- replicating existing design, development and delivery strategies.

Online & Technology-Enabled Learning. Preliminary results of the effectiveness of asynchronous online training are found in a 2011 evaluation report of technology-based learning grants.[21] The report indicates that "online and asynchronous approaches are critical in allowing participants to overcome training barriers related to time, transit, and distance, but they generate various challenges." The report states that these "challenges" can be mitigated by effective approaches that are integrated into PACE-IT, including:[22]

1) In-person components to online courses (addressed via the project's in-person student orientations and available lab space for online students to seek in-person assistance);
2) "Providing guidance and check-ins to manage the pace of course progression" (addressed though mentor roles, with scheduled weekly "check-ins" with participants via phone);
3) Incorporating asynchronous online activities that require interaction (addressed via scheduled module tutoring and participant discussions with scheduled subject-matter expert lessons).
4) Availability of lab space with knowledgeable staffing also provides students with access to computers and equipment, when and if they need it;
5) Professional development and support for instructors on effective use of technology-based learning/methods (supported by professional development funding, online learning and assessment support staff).

Western Governor's University (WGU) is a national leader in the movement to make high-quality education more accessible through innovative use of distance learning technologies. WGU's innovative competency-

[21] Dunham, K, et.al, "Evaluation of Technology-Based Learning Grants," Social Policy Research Associates. Prepared for the U.S. Department of Labor, Employment and Training Administration (Oakland, CA. December 2011)
[22] Dunham, K, et.al, "Evaluation of Technology-Based Learning Grants," Social Policy Research Associates. Prepared for the U.S. Department of Labor, Employment and Training Administration (Oakland, CA. December 2011)

based training approach allows students to earn a degree by demonstrating their competency and skills through a series of assessments, rather than attending traditional classes and earning credit hours.[23] Several community colleges nationally, such as Rio Salado Community College (RSC), have also implemented fully online, competency-based programs with student support catering to the online learner. At RSC the cost to educate students is 48% less than peer institutions nationwide; online course completion rate is 68%, and the graduation rate within 3 years is 48% (the highest in Arizona). RSC eliminated traditional semesters, offering accelerated online classes coupled with an array of "well-planned" support services for online students (specialized military advising; an accelerated strategy for processing financial aid; financial literacy, personal and career counseling online and in-person; an online career and job preparation center; free on-campus and online learning labs; 24/7 instructional and technology helpdesk; and in-house produced video series aimed at promoting and assessing information technology.[24] Preliminary evidence on the success of the RSC model of instructional delivery and student and faculty support provides a reasonable hypothesis to leverage these components in PACE IT.

Intensive Support for Students: A Navigator provides a central point of contact for students throughout their education; assists with enrollment, registration and orientation; helps students identify financial aid; connects the students with community resources; and helps students continue their education and/or find employment. An Aspen Institute funded pilot project with the Workforce Development Council (WDC) of Seattle-King County and Shoreline Community College provides moderate evidence that the navigator role had a positive impact on student outcomes compared to students that were not served by a Navigator. Students assigned to a Navigator experienced higher program completion rates with nearly 100% of completers obtaining employment post-graduation.[25] The WDC of Snohomish County and EdCC have

[23] Education Letter, "Western Governors University's Online Master's in Information Technology Degree Earns Top 10 Ranking," (High Beam Research extracted on 4/30/12). July 13, 2011
[24] March 2012 publication, *A Systems Approach; Expanding Access and Achieving Student Success through Support Services at Rio Salado College,*
[25] The Workforce Development Council of Seattle-King County, "The Navigator Model: Connecting to Employment," (Seattle, December 2010). Retrieved online at: www.seakingwdc.org

found similar outcomes in their collaborative project involving Navigators, funded by a U.S. Department of Education. Based on the moderate evidence presented, the successful Navigator model has been integrated into the PACE-IT project, utilizing the same principles of student support focused on retention and outcomes, albeit modified to meet the needs of online learners.

Employer Engagement. The "Earn to Learn" model – or paid internships, supported by close business and community college partnerships, provides students enrolled in a program with credit-bearing paid internships in the field in which they are studying. [26] In addition these public-private partnerships provide educators with the information needed to develop and align curriculum with employer needs for skills, knowledge and abilities required by their current or future employees – all integral components of PACE-IT.

Across the country, unpaid internships are on the rise for older adults looking to change careers or rebound from layoffs (NPR, May 1, 2012). In New Hampshire, a state-run program encourages the unemployed to take six-week internships at companies with the hope of getting a permanent job. To date, close to 600 people have already interned at 275 companies in what's called the Return to Work program. The state indicates that more than 60% of the interns received jobs offers at the companies where they interned. Each of these examples provide preliminary evidence of the importance of employer engagement with community colleges, producing mutually-beneficial outcomes for colleges, the system and employers alike – a skilled and educated workforce. **As such, PACE-IT has incorporated internships and other work-based experiences into the project design.**

Sub-baccalaureate Certificates. Labor market returns to even one additional year of schooling are significant, with certificates of one year or more consistently linked to increased earnings." [27] College completion research indicates that in order to make progress on the college completion agenda and increase the supply of STEM-educated workers, we must: increase the number of individuals graduating

[26] Anonymous, "Business and Community College Partnerships: A Blueprint," Corporate Voices. Retrieved Online: http://www.cvworkingfamilies.org/system/files/Learn-Earn-Blueprint-Updated.pdf 17 Apr 2012
[27] Bosworth, B. "*Certificates Count: An Analysis of Sub-baccalaureate Certificates,*" FutureWorks, for Complete College America, (Washington DC, December 2010). Retrieved Online: http://www.completecollege.org/docs/Certificates%20Count%20FINAL%2012-05.pdf 08 Apr 2012

with a credential and more effectively utilize cost-effective, accessible and high-quality education models, such as online programs, competency-based models that accelerate learning and provide for prior learning credit; and supportive services, such as mentorship.[28] PACE-IT will develop and implement five online certificate programs under the proposed project. These certificate programs are intended to meet employer needs for skilled and educated workers and provide participants with accessible and supportive training options to obtain stackable, competency-based credentials that will lead to a high-wage, high-demand occupations in IT and/or a seamless pathway to continue their education to a baccalaureate degree. The intent of converting or developing these certificate programs to online, competency-based formats is to 1) improve prior learning assessment and credit; 2) accelerate completion rates, for students demonstrate competency in the subject matter; 3) expand institutional capacity and improve dependability of course offerings in IT programs – reducing or eliminating the number of IT courses that need to be cancelled due to low enrollments; 4) change the role of community college faculty from that of instructor-worker to that of **learning process manager (Instructional Mentor)** – providing individualized instruction and improving the college's capacity to accommodate and serve a diverse learner population; and 5) improve utilization of campus computer lab space, by re-designing a space into a virtual lab or "sand-box" environment.

Industry Engagement to Identify Stacked and Latticed Credentials: EdCC will work with its industry partners to identify courses and related credentials that address their entry and mid-level hiring needs in IT. These employer collaborations will be clustered, based on the targeted occupations and correlating certificate and degree programs. Core components of employer engagement to identify credentials includes, providing input on curriculum development for online certificates leading to certification; developing job shadow or internships supporting participant learning; identifying/providing subject matter expertise to help build and or teach curriculum; developing real-world, problems for students to work on as

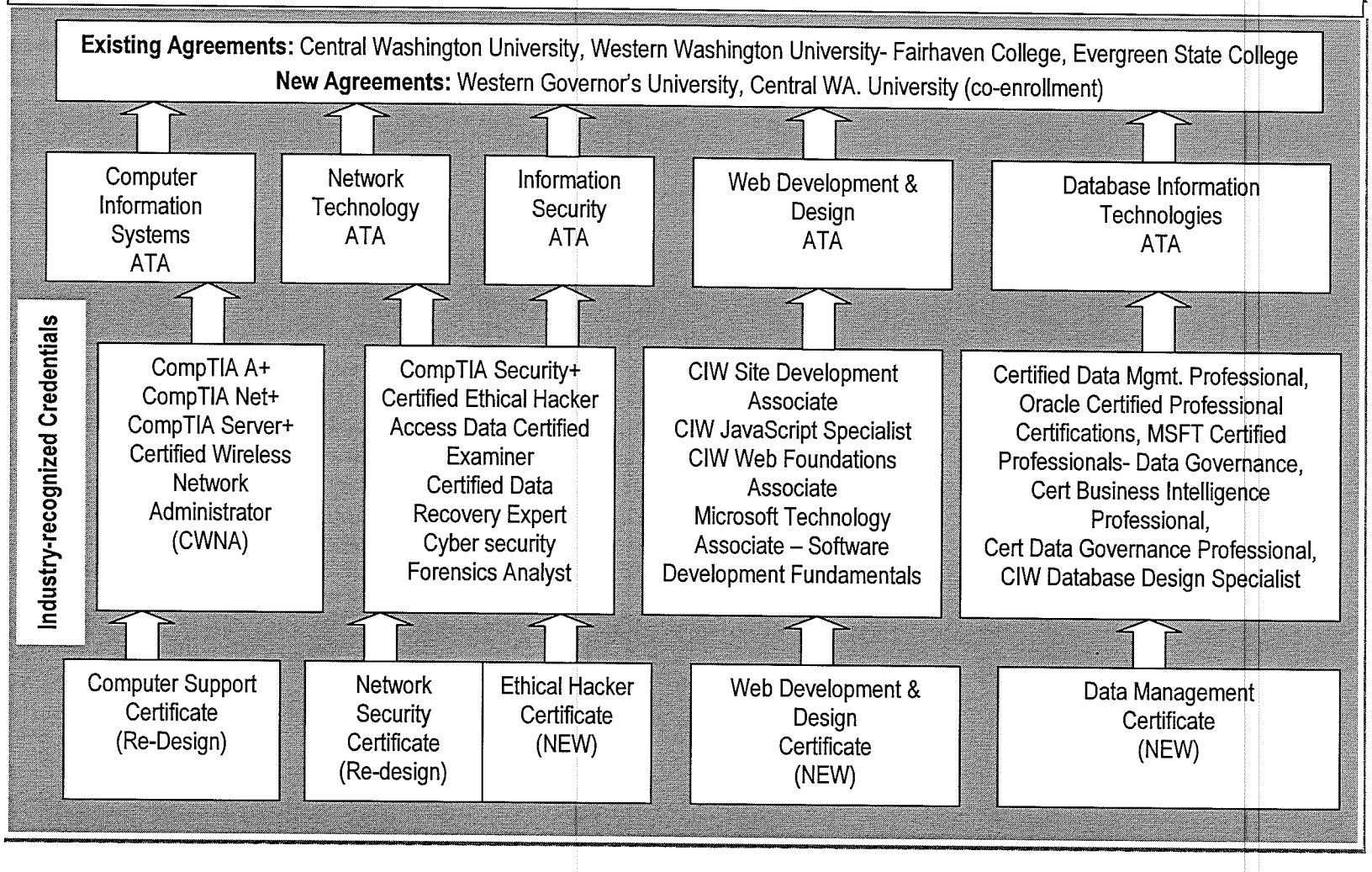
[28] Bosworth, B. "*Certificates Count: An Analysis of Sub-baccalaureate Certificates,*" FutureWorks, for Complete College America, (Washington DC, December 2010). Retrieved Online: http://www.completecollege.org/docs/Certificates%20Count%20FINAL%2012-05.pdf 08 Apr 2012

part of a capstone experience to demonstrate their knowledge. In addition, Hire America's Heroes, an employer-driven non-profit organization will also play a vital role in ensuring that the programs developed meet the needs of local employers, as well as veterans.

Plans to Stack and Lattice Credentials: IT occupations, supported by the acquisition of additional knowledge and skills are inherently laddered and latticed; therefore educational offerings supporting career entry and advanced should align with these occupation ladders and lattices. As such, each of the targeted certificates provide students with an entry or re-entry point (based on Prior Learning Assessment and transferable college credit) to enter or advance in an IT occupation and/or seamlessly continue their education to an associate's degree or a 4-year baccalaureate program. The utilization of industry-recognized credentials paired with each certificate program provides graduates with portable credentials that are easily accessed by other institutions and employers. **TABLE 7** outlines specific credentials that participants can receive and how these credentials stack with multiple entry and exit points.

Prior Learning Assessment: PACE-IT allows participants to utilize competency-based assessments to demonstrate their knowledge of the course content contained in each module. As such, newly developed content will require development of competency-based assessments across the curricula prior to implementation online, thereby enabling participants to assess prior learning and accelerate their own progress, based on their existing knowledge of program content. An important component of the PACE IT project is the opportunity for military personnel to assess their current level of skills gained from education, training, and experiential learning, to determine gaps in their ability to achieve industry-recognized credentials. In partnership with Hire America's Heroes, the EdCC Assessment Coordinator will utilize existing resources (crosswalks and assessment tools) to ensure that veterans are properly assessed for prior learning credit (based on positions held during active service, experiential learning and formal military and non-military training) and placed into the appropriate program that supports their career goals and assessed program entry point, thereby enabling greater acceleration of time to credential.

Table 7. PACE-IT Stacked Credentials in Information Technology



Online and Technology-Enabled Learning: Based on research, access to physical infrastructure (lab space, tutoring assistance, etc) is important to online student success and the college must improve its lab infrastructure to provide flexible resources and support for online students. These improvements will provide participants with access to an interactive online learning environment; as well as dedicated space for in-person learning and technical support. The "sandbox" will serve as a learning laboratory for students to serve as volunteers and interns, and a place to network and conduct project-based activities.

Incorporation of Technology into Program Design and Delivery: Instructional mentors support ***personalized instruction*** to all participants. Instructional Mentors familiar with certificate content will manage up to 30 participants at a time, connecting weekly via phone with every student, reviewing student progression reports, assessments and grades, proactively intervening when needed, develop and deliver online tutoring sessions, organize in-person study groups and opportunities for students to attend face-to-face sessions; and coordinate closely with other resources for students (other Instructional Mentors, Subject Matter Experts, Navigator).

Provided that each certificate program offered online will be competency-based, and delivered in asynchronous format, allowing participants to progress through course material in an accelerated pace, ***research indicates that it is important that online programs also provide opportunities to foster student engagement*** – with each other and with faculty and staff. Instructional mentors will organize real-time group discussions and tutoring sessions. An in-person orientation session will also be developed and delivered by the Navigator on an ongoing basis (quarterly) to ensure that participants have an opportunity to meet face-to-face with the project team. To accommodate the diverse target population, online certificate programs will utilize Universal Design principles that can assist persons with disabilities, adults with various learning styles and participants that have not taken online courses in the past.

The added benefit of competency-based assessments provides students prompt feedback via their Instructional Mentor on what course content they may need to revisit or strengthen in order to obtain

industry-recognized certifications at the end of their program. In addition, patterns of participant performance may indicate other issues, such as family or financial challenges – which will prompt the project Navigator to increase communications and determine if assistance or referrals are needed.

Hire America's Heroes has created a LinkedIn site, supporting employment opportunities and industry connections for transitioning active duty military personnel and veterans. ***Participation in this active social networking site will provide veteran participants with support and assistance in finding internships, employment in IT occupations that align with their new and previously acquired skills, and mentors that provide support in the transition to civilian employment.*** Employer members of this social networking site include IT hiring powerhouses like Boeing, Microsoft, State Farm, Comcast, Volt Workforce Solutions; Costco, IBM, Starbucks, Amazon, Weyerhaeuser, Alaska Airlines, the Port of Seattle and Puget Sound Energy. Many of these companies have demonstrated their commitment to hiring veterans through their engagement with Hire America's Heroes; as well as corporate programs such as Elevate America (Microsoft) and specialized corporate websites that provided veterans with resources to map their military experience and education to corporate jobs.

Expected Impact of Technology on Program Outcomes: The utilization of online certificate programs will expand EdCC's capacity to consistently serve more students (due to flexibility of online programs and the elimination of the faculty to student ratio burden that often results in class cancellations). Participants may at any time opt to take assessment tests to demonstrate competency in the content and progress. In addition, the expansion of online certificates in IT is expected to improve access to workers that would not be able to attend courses during the day or on a regular schedule. The model proposed for delivering these certificates enables the college to offer these programs consistently – including advanced courses online, regardless of enrollments. The consistency and accessibility of these certificate programs is expected to increase enrollments in the targeted program areas – a model that can be scaled to encompass other technical training certifications and associate's degree programs in the future. Offering full programs online

will support increased scalability to reach broader audiences.

Transferability & Articulation of Credits and Credentials: Graduates from the revised or newly developed certificate programs will earn stackable certificates of recognition through proficiency that may be applied toward an associate's degree or baccalaureate degree. This competency-based approach coupled with industry-recognized credentials further enhances each graduates educational advancement opportunities and employment competitiveness. The ability of these graduates to seamlessly articulate to upper-division coursework and degree programs (including local university center and online options, supporting employed graduates), results in the development of a resilient pipeline to fill workforce demands along the IT career ladder.

EdCC will work closely with Western Governor's University (WGU) and Central Washington University (CWU) to forge articulation agreements for program participants that obtain a certificate and/or 2-year Associate's degree to continue their education. **Letters of commitment from both institutions are on file.** For example, CWU has an "up-side down degree" program (B.S. in Information Technology and Management) that enables Information Technology students to take the majority of the academic requirements after they enter into their baccalaureate program. Through PACE-IT, EdCC will work with CWU to develop and implement a co-enrollment strategy that will ensure seamless articulation for participants enrolled in IT certifications to progress to a 4-year degree.

v. Strategic Alignment

Coordination with Employers and Industry: Employer partners will actively participate in curriculum design (including identifying/providing **Subject Matter Experts** to develop curriculum and review programs) and provide feedback on the curriculum's effectiveness (based on participant feedback and data); share current information about workplace demands and emerging technologies; provide work-based learning experiences, including internships, mentoring and real-world business projects and problems to support participant capstone team projects; allow current employees to attend training programs, be recruited as

instructional mentors and recruit and interview graduates for employment opportunities. The Project Director will serve as the employer liaison, working closely with the Navigator, to develop employer partnerships, establish project- based learning activities and place students in internships. Hire America's Heroes will link Veterans to resources, including mentorships, internships and job opportunities and Workforce Development Council and one-stop system for wrap-around services.

Coordination with the Public Workforce System: The WDCs and local one-stops, working primarily with the project Navigator will support the project through recruitment of eligible participants. The WDCs will support targeted outreach to potential project participants, by mining the statewide database to identify workers in the target population and contacting them to provide further information on the program. Based on the skills and assessments of these workers, they will be referred to the most appropriate PACE-IT training program. The WDCs will also regularly engage in PACE-IT's continuous improvement and project evaluation processes, ensuring that the target population is well-served.

Outreach and Coordination with Educational Institutions and Other Organizations:

PACE-IT is connected to TAACCCT Round 1 grants. 1) Bellevue College (WA) is a partner with the Collin College (TX) TAACCCT Round 1 Consortium. Provided that several of the targeted occupations overlap with PACE-IT, EdCC will coordinate with Bellevue College to share information, including lessons learned, best practices and curriculum modifications– further enhancing the capabilities in the region. 2) Spokane Community College (AIR Washington Consortium) focuses on aerospace manufacturing occupations statewide. The partial overlap in industry focus should provide opportunities to collaborate on participant outreach to the target population, providing workers with additional training options, depending on their skills and interests. 3) PACE-IT will leverage the state's Open Course Library, funded by the Gates Foundation through the State Board of Community and Technical Colleges. Curriculum developed under this project will be housed in this central repository and accessible to all Washington State 2-year colleges.

SECTION 3. WORK PLAN AND PROJECT MANAGEMENT

i. Project Work Plan: Project Cost per participant: $9,900

Priority 1: Accelerate online, competency based learning for credentials leading to employment and continued education						
	Activities	**Who**	**Costs**		**Time and Milestones**	**Deliverables**
Strategy 1.1	Develop open online self-paced, stackable certificate modules based on industry skill requirements.	-Industry SMEs; -Instructional Designer (ID) -Project Director (PD) -CIS Instructors; -HR -VPs of Instruction and Workforce (VPs) - Washington Online -Student Interns	Total Equip. Year 1 Year 2 Year 3 Year 4* *All year 4 costs for each strategy fund only follow-up and evaluation activities.	$511,986 0 $386,240 $98,530 $17,464 $9,752	Date: 10/1/12 - 9/30/14 <u>Fall 2012 and Winter 2013</u> -Online Curriculum Designer hired; -Participating CIS faculty identified; -Industry SMEs recruited; -3rd party evaluator identified -Online open-course curriculum reviewed and adapted as appropriate <u>Winter 2013 – Summer 2014</u> -Skill competencies identified -Online modules developed -New curriculum posted in open-course format	-Online Open Certificate Modules developed for Computer Support, Data Management, Ethical Hacker, Network Security, Web Development & Design -All modules available at Washington Online open-course library -Curriculum framework established for developing online courses using Quality Matters
Strategy 1.2	Pilot, implement and evaluate online modules	-Industry SMEs -Instructional Mentors (IMs) -Hire America's Heroes, Military Bases/Naval Station, WDCs, employers and community organizations -Marketing Dept. --VPs -Institutional Researcher (IE) -External Evaluator	Total Equip. Year 1 Year 2 Year 3 Year 4	$1,067,168 0 $56,156 $488,432 $512,828 $9,752	Date: 1/1/13- 9/30/16 <u>Fall 2012 -Spring 2013</u> -Instructional Mentors hired; - Instructional Mentors Trained -Instructional supplies ordered <u>Spring 2013- Winter 14</u> Computer Support and Network Security modules cohorts begin <u>Fall 2013- Summer 2015</u> - Students move through modules at own pace with support from SMEs and Instructional Mentors <u>On-going</u> -Marketing and Recruitment	-Online Certificate Modules piloted and offered in Computer Support, Data Management, Ethical Hacker, Network Security, Web Development & Design; Procedures for Instructional mentors developed, documented and shared; -303 students enter program and 270 complete -Research report on efficacy of PACE-IT strategies

					-Industry SMEs continue to be identified -Collection of data/project evaluation	
Strategy 1.3	Develop and Implement student summative and formative assessments, including intake, learning, and certification assessments	-Assessment Coordinator -WGU, CWU -Industry SMEs CIS Instructors, Instructional Mentors, PD, WDCs PLA Manager -IR -Data Tracker -Evaluator	Total Equip. Year 1 Year 2 Year 3 Year 4	$271,551 0 $78,793 $90,900 $92,106 $9,752	Date: 1/1/13- 9/30/16 <u>Winter 2013-Spring 2013</u> Procedures identified for assessments and documentation; training -Data Tracker hired -Assessment Coordinator hired <u>Spring 2013- Winter 14</u> -Formative assessments developed throughout curriculum -Summative assessments for certification exams <u>Ongoing</u> -Prior knowledge assessments conducted on incoming students -Collection of data and evaluation -Certification materials ordered -Assess experiential learning through capstone	-PLA criteria documented and disseminated -Agreements with certification vendors in place -Curriculum is aligned industry certification requirements -Capstone objectives established for each certificate program - at least 200 students take certification exams -Research report on efficacy of PACE-IT strategies

Priority 2: Improve student achievement through intensive supports						
	Activities	**Who**	**Costs**		**Time and Milestones**	**Deliverables**
Strategy 2.1	Create and manage drop-in IT lab (Sandbox) that provides student technical support and work experiences	-IT Specialist -Director, IT -Purchasing -Academic Computing Services -Student interns IR, Data Tracker, Evaluator	Total Equip. Year 1 Year 2 Year 3 Year 4	$314,602 $65,981 $99,229 $68,982 $70,657 $9,752	Date: 1/1/13- 9/30/16 <u>Winter 2013</u> -- IT Specialist is hired -Space is identified and renovated for wiring; -Equipment and Supplies are ordered and installed -Procedures established and documented. -collect data and evaluate Sandbox impact <u>Spring 2013- ongoing</u>	-Students receive hands-on experiences working in and managing Sandbox -Students receive technology assistance to upgrade skills and receive instructional assistance -Sustainable model through student interns -Research report on efficacy of

					-Sandbox operational	PACE-IT strategies
Strategy 2.2	Student support infrastructure enhanced for online learner	-Navigator -Instructional Mentors -IT Specialist -Student Interns -Director of Veterans Center and all Student Support Services staff -IR, Data Tracker, -Evaluator. -WDC one-stop centers;	Total Equip. Year 1 Year 2 Year 3 Year 4	$259,246 0 $57,700 $94,256 $97,538 $9,752	Date: 1/1/13- 9/30/16 Winter 2013 -Navigator hired Winter 2013-Spring 2013 -Research other online support models -Model for online support services designed and documented -Assessment and tracking practices established -Participant Handbook and PACE-IT Orientation Developed On-going -Support services offered and assessed. -Community and employer contacts	-Students receive an array of individualized and group supports to enhance learning and retention. -146 students retained -Research report on efficacy of PACE-IT strategies

Priority 3: Build student knowledge and experience through business and industry involvement (internal and external)						
	Activities	**Who**	**Costs**		**Time and Milestones**	**Deliverables**
Strategy 3.1	Provide internships and other work project-based experiences on-campus and in community.	-Project Director -Navigator -Career Action Center Staff -WDCs - Industry SMEs -Business & Industry -EdCC IT Division -IR, Data Tracker, -Evaluator.	Total Equip. Year 1 Year 2 Year 3 Year 4	$299,398 0 $51943 $116,416 $121,287 $9,752	Date: 1/1/13- 9/30/16 Fall 2012 - Identify cadre of employers for each certificate program Winter 2013-ongoing -A procedure manual for working with employers on project-based activities -Students matched with industry/business -Student projects presented -Employers assist with design of projects -Formal internships (paid & volunteer) established and monitored -Student experiences aligned with curriculum -Data Collection and evaluation	-Technology solutions to meet industry needs -Students receive real work experiences -A stronger connection with employers -Research report on efficacy of PACE-IT strategies

Priority 4: Strengthen Pathway to Employment and/or Continue Education						
Activities		Who	Costs		Time and Milestones	Deliverables
Strategy 4.1	Increase and enhance opportunities for seamless articulation and transferability of credits to other 2-year and 4-year education.	-Universities (WGU CWU) - WA community & technical colleges -VP, Instruction -Project Director	Total Equip. Year 1 Year 2 Year 3 Year 4	$54,675 0 $14,777 $21,886 $8,260 $9,752	Date: 1/1/13- 9/30/16 <u>Fall 2014</u> -Articulation and co-enrollment agreements w/ 4-year institutions established; <u>On-going</u> -Students are aware of educational programs available to them -Student receive assistance with applying for financial aid -Data Collection/evaluation	-Signed articulation agreements. -Students knowledgeable of educational and career options available to them. -70% of PACE-IT participants get jobs and/or continue education. -Modules available at WA Online open course library
Strategy 4.2	Assist student in job seeking and job placement	EdCC Career Action Center; WDC; Project Director Navigator Business & industry	Strategy Total Equip. Year 1 Year 2 Year 3 Year 4	$221,374 0 $44,840 $81,421 $85,361 $9,752	Date: 1/1/13- 9/30/16 <u>On-going</u> -Students are aware of career opportunities available to them -PACE-IT Students receive job seeking assistance and are interviewed by employers -Data collection and evaluation	-Students knowledgeable of educational and career options available to them. -Students are supported in job search. -70% of PACE-IT participants get jobs and/or continue education

ii. Project Management

Effective Project Management and Staff:

EdCC has the capacity to effectively manage federal grant-funded programs; more than one-third ($26 million) of its operating budget comes from federal and state grants (more than any of the other 33 community colleges in the Washington State). The college's fiscal, administrative and marketing staff is highly experienced and has the capacity to ensure proper performance and fiscal reporting, and procurement and marketing functions. For example, **EdCC has received over $11 million as the fiscal lead on 19 National Science Foundation grants, as well as a U.S. Department of Health and Human Services Health Opportunity Grant entitled *CATCH – Creating Access to Careers in Healthcare.***

PACE-IT will be led by a competent full-time Project Director (PD) who will be hired within 90 days of the funding period. All hiring activities will be in compliance with EdCC's policy and procedures; a national recruitment campaign will be initiated. The position will report to the Vice President of Workforce Development who will provide monthly updates at President's Cabinet meetings. The PD will be responsible for all administrative aspects related to project management, including coordinating activities with industry and the project team, developing and implementing a marketing plan, supervising staff, working closely with administrative units and the selected External Evaluator, managing the budget and ensuring compliance with outcomes, student tracking, project evaluation, and federal reporting. Required qualifications: Master's degree in business, education, or administration; a minimum of 4 years of administrative experience in a training setting working with adult learners and industry; ability to communicate effectively; strong organizational skills; experience with online training, and federal project and budget management.

Effective Management Structures: The management structure has been designed to ensure efficient and effective avenues of communication between project staff and college operations. The Organizational Chart attached identifies all relevant leadership, program, administrative, and advisory positions.

Effective Systems and Processes:

EdCC will follow the established financial organizational and management protocols and reporting systems that are already in place, ensuring the integrity of institutional finances, creating appropriate control mechanisms, and providing a basis for sound financial decision-making. These protocols and systems include provisions that financial functions are centralized and are under a single qualified officer responsible to President Hernandez; expenditures and income of all sources are fully controlled by the institution and are included in its regular planning, budgeting, accounting, and auditing procedures; and a well-organized program of internal audit (where appropriate) and control that complement the accounting system and external audits are in place. The college controls all its revenue and expenditures through the use of a common statewide financial software system with its internal control procedures. The accounting structure is set by the State's Office of Financial Management. The financial system provides for the recording of all financial activities in accordance with generally accepted accounting principles.

Sustainability Plan:

One of the goals of PACE-IT is to contribute to the body of research on the effectiveness of online, accelerated learning toward certifications using a strategy of instructor as mentor in the community college. The outcomes from the project evaluation to be conducted, comparing like baseline cohorts taking traditionally taught IT courses with PACE-IT students, will be used to validate (or not) the efficacy and sustainability of the model. It is projected that results will demonstrate cost-savings and increased retention and job placement rates, supporting the replication of the model in other high-demand programs (i.e. PACE- Healthcare). Industry partners have a vested interest in PACE-IT outcomes. The training will enable employers to access cost-effective, reliable training that is not currently available in online format for new and incumbent workers, as well as provide a consistent pipeline of qualified interns and potential employees to address their hiring demands. In addition, PACE-IT strategies will be maintained through tuition dollars, state funding (both annual allocations and special grants), industry-training budgets and the

college's staff and faculty professional development budget. In addition, the Student Government Association manages funding from a student technology fee that will support on-going technology infrastructure for the new drop-in lab.

4. OUTCOMES

i. **Analysis of Outcome Projections.** The cost per participant is $9,900 which is appropriate given the complex and innovative, capacity-building design of PACE-IT.

No	Outcome Measure	Total By Year	Combined Total -All Years
1	Total Number of Unique Participants Served	Year 1: 30 Year 2: 198 Year 3: 75	Total: 303
2	Participants Completing a DOL-Funded Program of Study	Year 1: 0 Year 2: 56 Year 3: 169	Total: 225
3	Participants Still Retained in Program of Study	Year 1: 0 Year 2: 26 Year 3: 120	Total: 146
4	Participants Completing Any Credit Hours	Year 1: 15 Year 2: 69 Year 3: 156	Total: 240
5	Participants Earning Credentials	Year 1: 0 Year 2: 56 Year 3: 169	Total: 225
6	Participants Enrolled in Further Education after DOL-Funded Program of Study Completion	Year 1: 0 Year 2: 6 Year 3: 28 Year 4: 22	Total: 56
7	Participants Employed After DOL-Funded Program of Study Completion	Year 1: 0 Year 2: 18 Year 3: 52 Year 4: 16	Total: 86
8	Participants Retained in Employment After Program Completion	Year 1: 0 Year 2: 10 Year 3: 34 Year 4: 20	Total: 64
9	Employed Participants Who Received a Wage Increase	Year 1: 0 Year 2: 3 Year 3: 40 Year 4: 30	Total: 73

ii. Process or System for Tracking and Reporting Outcome Measures

Existing Tracking Procedures and Well-Defined Plan to Address Gaps in Tracking

EdCC has a coherent and effective plan for tracking and evaluating program data on a quarterly basis by leveraging information technology to assess data in support of continuous improvement of grant funded programs and comparison cohorts and ensure that the partnership is on track for meeting or exceeding project goals. The college possesses and has access to the infrastructure to meet tracking requirements for the PACE-IT project. In 2008, the college received a 5-year Title III grant from the US Department of Education to strengthen its research and data collection capabilities through additional staffing and technology. These resources are being institutionalized into operational budgets.

EdCC will utilize two existing information management systems to support progress measures, including 1) Student Management System (SMS), supporting the collection and longitudinal tracking of student measures (demographics, socioeconomic, veteran status, credit attainment, attainment of industry-recognized credentials/certificates, attainment of degree) and 2) state/county workforce development systems (enabling the tracking and timely reporting of entered employment rate, employment retention rate and average earnings). Students will be assigned a unique identifier to facilitate required data collection in SMS (participant and comparison cohorts). Information pertaining to course and degree completion, such as length of time to complete, grade distribution, and any additional criteria cited below will also be tracked and reported via SMS. The project team will coordinate with and receive assistance from the college's Institutional Research and Information Technology Departments. The Director of Institutional Research(IR) and Director of Information Technology (leveraged resources) will meet regularly with the project team to discuss the required data tracking and reporting (participant and project implementation measures) to ensure that the data is standardized for comparison purposes and that the IR and project leads have dedicated time each quarter to support the evaluation process and contribute though leadership to the analysis of the data and identify continuous improvement opportunities, as well as prepare reports for

active engagement of project partners (employers, community-based organizations and workforce development agencies).

Services Knowledge, and Information Exchange System (SKIES), the Washington State workforce investment management information system, manages data associated with individuals trained under this initiative from the point of intake through job placement and retention. Data captured includes demographic information, services provided and resulting outcomes, job placement information, and job retention results. *SKIES* is also connected to Washington's unemployment tax database, from which data matches on the number of participants who enter and retain employment, as well as second and third quarter earnings following placement. Navigators are trained users of SKIES and will facilitate data entry and collection on participant and comparison cohort employment and wage outcomes.

If required data lags or is not readily available from these systems, such as employment and retention data, the college has developed a method for collecting more timely or supplemental data that may be needed to evaluate the project. The evaluation team will implement 3-month follow ups with program completers. Students will be required to participate in a survey upon program completion or exit. Students identifying themselves as unemployed will be contacted via phone and email. Regardless of employment status all program completers will be contacted within 3 months after completion by the Navigator. LaunchPAD, a statewide social media tool, will be also used to help track program completers and serve as a job-posting site to connect graduates to potential employers.

ii. Using Data for Continuous Improvement

PACE-IT supports the goal of leveraging evidence-based design to support strategies that will lead to improved education and employment outcomes, coupled with rigorous data collection and evaluation to support continuous improvement and contribute to the body of knowledge in workforce development. Data outputs will be standardized to facilitate meta-evaluation. A formative evaluation will consist of quarterly reports as required by DOL plus at least one study of a relevant grant activity per quarter. The evaluators

will provide both an annual summative evaluation report and a final summative evaluation report and will assist project leadership in preparation of articles and presentations as well as preparation of a scholarly article describing the improvements in efficacy and cost effectiveness resulting from the online delivery and staffing model.

The implementation and progress measures will require comparison of longitudinal data. Many of the number/percentage measures necessitate baseline measurement, the identification and process for which is described in detail in the Evaluation Section. A Data Tracker will be hired to track student progress in PACE-IT activities and will work closely with the Assessment Coordinator, Project Director and the 3rd party evaluator. The Institutional Research office will aid in data collection and compilation tasks. Departmental and institutional cooperation will ensure access to the external databases described above. Longer term outcome measures will be tracked and reported in much the same way. The Data Tracker and IR will pull data from the common statewide data set via the databases described above. Quarterly reports will be compiled and examined by the evaluation team. Following the extraction of the data from the databases on a quarterly basis, as well as a project status report to objectives compiled by the Project Director, the PACE-IT team, including external partners will meet to discuss the findings and develop recommendations for improvement. As these are implemented, the impacts will be measured and subsequently reviewed by the PACE-IT team and external partners in the preceding quarter. Continuous improvement activities and the assessment of their subsequent impact will be reported to the DOL.

5. BONUS POINT FOR COMMITMENT TO SUBMIT NON-PROGRAM PARTICIPANT DATA

EdCC is committed to submitting non-program participant data, as well as required data, on an annual basis during the grant performance period. President Hernandez and the Vice Presidents affirm that all data requirements will be met.

1. PROGRAM EVALUATION PLAN

Selected Study Methodology: Outcome/impact evaluation: Comparison Cohort

Proposed timeline for transmitting evaluation reports: The PACE-IT project supports the stated goals of the TAACCCT program, leveraging evidence-based design to support strategies that will lead to improved labor market outcomes for participants (TAA-impacted workers and other adults). PACE-IT encompasses rigorous data collection and evaluation processes to support continuous improvement and contribute to the body of knowledge in workforce development. More specifically, data outputs will be standardized to facilitate meta-evaluation. A formative evaluation will consist of quarterly reports as required by DOL plus at least one study of a relevant grant activity per quarter. **The evaluators will provide both an annual summative evaluation report (December of Years 1, 2 and 3) and a final summative evaluation report (at the close of the granting period) that will be transmitted to DOL.** Participants will first be enrolled in online coursework beginning July 2013. Following the completion of the 1st quarter in which participants are enrolled, EdCC can begin transmission of data, including name, Social Security Number, and date of birth of program participants and individuals in the comparison groups using a secure data system specified by the Department.

i. Participant Outcomes or Impacts

Chosen Study Methodology & Data Collection Methods for PACE-IT: Based on the number of participants to be served and the utilization of preliminary and moderate evidence supporting the project design; EdCC has selected an Outcome/impact evaluation utilizing a comparison cohort. Participants in the newly implemented online, competency-based certificate programs will be compared to comparison cohorts of non-grant funded students in traditional, class-room based IT programs. Two of the five programs encompassed under the PACE-IT project are currently in operation at the College (classroom based instructional delivery), including Computer Support and Network Security. Students enrolled in these

certificate programs, beginning September 2013 will be utilized as the initial comparison cohort, with additional enrollments in these programs added in proceeding quarters and years. For the participant cohorts and comparisons cohorts the following data will be collected:

Indicator Category	Participant Cohorts	Comparison Cohorts
Demographics: Gender, race/ ethnicity	Yes	Yes
Educational Background: Prior education (highest level achieved at the time of enrollment and prior learning credit awarded.	Yes	Yes
Work Background: Employment history, including: 1) work status (dislocated, unemployed, under-employed or employed); 2) industry and occupation employed (former or current); wage (if employed at the time of enrollment).	Yes	Yes
Special population/student type: TAA-impacted worker, veteran, and other adult populations	Yes	Yes
Educational Outcomes: progression, retention, credit attainment and completion rates; time to degree	Yes	Yes
Additional Educational Outcomes: Assessment scores, entered/completed internship, attainment of industry-recognized credentials	Yes	No
Services received: tutoring, financial assistance, career guidance/advising, wrap-around services, use of lab, orientation, etc.	Yes	N/A
Levels and Changes in labor market outcomes: Entered employment, employment retention (at 3 and 6 months following completion) and wage gains).	Yes	Yes

A total of five certificate programs will be developed or re-designed in online, asynchronous format, enrolling participant cohorts. Newly developed online certificate programs include Web Development & Design, Ethical Hacker, and Data Management and re-designed programs include Network Security and Computer Support. Participant cohorts in the newly developed programs will also be compared to cohorts in the re-designed programs (participant persistence, retention and completion rates), with the intent to assess the effectiveness of the utilization of existing curriculum re-designed for online delivery versus newly developed curriculum designed for online delivery. Furthermore, participant cohorts (quarterly enrollments) will be compared to proceeding cohorts, supporting the PACE-IT continuous improvement processes, in

order to examine the impact of improvements or enhancements in instructional delivery or student services; also taking into account the progressive experience of instructor mentors and other participant support staff in delivering services online as the grant progresses.

Participant cohorts and comparison cohort data will be examined by the PACE-IT team (including the Project Director, Director of Institutional Research, the Data Tracker, third party evaluator and public workforce development partners) on a quarterly basis supporting the PACE-IT's continuous improvement processes. Survey data (participant and instructional mentors), providing a consistent flow of information on their experiences, satisfaction, interactions and comfort in the online environment will also be reviewed, providing added context to the reviews and discussions supporting continuous improvement processes and third party evaluation.

PACE-IT's evidence-based design, data collections and evaluation methodology are designed to contribute to the body of research on the effectiveness of online, accelerated learning toward certifications using a strategy of instructor as mentor in the community college. If the results demonstrate cost-savings and increased retention and job placement rates (as projected) then the plan is to replicate the model in other high-demand programs and share curriculum with other colleges through open-course environments. Industry participation is critical to the project's success and industry partners have a vested interest in PACE-IT outcomes which was evident in our community outreach process. The training will enable employers to access cost-effective, reliable training that is not currently available in online format for new and incumbent workers; as well as provide a consistent pipeline of qualified interns and potential employees to address their hiring demands.

Provided the number of participants to be served, including TAA-impacted workers (303) and the significant emphasis placed on proving (or disproving) the efficacy of the instructional and service models proposed and modified via an ongoing continuous improvement process; **the quasi-experimental design**

utilizing comparison cohorts, supports an appropriate and rigorous project evaluation plan. The table below provides an overview of the aggregate participant outcomes.

Analysis of PACE-IT Participant Outcomes		
Percent of Total Participants Who Complete Program of Study	225 of 303	74%
Percentage of Total Participants Who Earn a Credential	225 of 303	74%
Percent of Total Participants Who Continue Their Education	56 of 303	18%
Combined Percentage of Total Participants Employed or with Wage Gain after Program Completion	86 (employment outcome) + 73 (wage increase outcome) = 159 labor market impact of 225 completers	70.6%

Data Collection Supporting Study Methodology: EdCC will utilize two existing information management systems to support reports on measures (participant and comparison cohorts supporting comparable source data), including 1) Student Management System (SMS), supporting the collection and longitudinal tracking of student measures (demographics, socioeconomic, veteran status, credit attainment, attainment of industry-recognized credentials/certificates, attainment of degree) and 2) state/county workforce development systems (enabling the tracking and timely reporting of entered employment rate, employment retention rate and average earnings). Students will be assigned a unique identifier to facilitate required data collection in SMS (participant and comparison cohorts). Information pertaining to course and degree completion, such as length of time to complete, grade distribution, and any additional criteria cited below will also be tracked and reported via SMS.

Services Knowledge, and Information Exchange System (SKIES) is the Washington State workforce investment management information system that manages data associated with individuals trained under this initiative from the point of intake through job placement and retention. SKIES is also connected to Washington's unemployment tax database, from which data matches on the number of participants (including comparison cohorts) who enter and retain employment (completers and non-

completers), as well as pre and post wages (for students earning wages at the time of enrollment). Navigators are trained users of SKIES and will facilitate data entry and collection on participant and comparison cohort employment and wage outcomes. The use of these two databases will support the collection and reporting of participant educational and labor market outcomes.

ii. Program Implementation

The following chart outlines PACE-ITs program implementation evaluation plan. This plan supports the continuous assessment by the PACE-IT team and external evaluator to document and evaluate the steps taken by the institution to create and run the training programs. In addition it supports the identification of how operational strengths and weaknesses of the project after implementation will be identified and evaluated; as well as how it may be strengthened (including questions posed in Solicitation are embedded in the following chart/plan).

Project Strategies	Evaluation Activities	Evaluation Product(s)
Priority 1: Accelerate online, competency-based learning		
Develop open online self-paced, stackable certificate modules based on industry skill requirements	Monitor the steps taken by the institution to create the training programs, including: the identification and contracting of subject matter experts (SMEs), including support by private sector partners in this process; the engagement of SMEs with curriculum designer and institutional ability to add qualified faculty (instructional mentors). Monitor and describe how instructional content was selected to align with identified industry skill needs; changes in program content (for existing courses) and alignment of course assessments with course content; describe the variety and complexity of online tools utilized for content delivery and objective for selecting. Monitor and describe the framework established for developing online courses using Quality Matters. The Quality Matters rubric will be used to develop and evaluate the quality of online	Document the effectiveness of the strategies used and alignment with PACE-IT goals and objectives in development process.

	course content and measure program sustainability by the ongoing costs to run the program after initial investment of infrastructure and curriculum design. Describe challenges associated with institution's plan to create and launch the training programs; as well as leveraged resources and partner engagement required supporting development.	
Pilot, implement and evaluate online modules	Assess the implementation of online certificate programs to project plans; describe any difficulties associated with implementation of open courseware, technical infrastructure supporting implementation and student access and experience with online courses/training programs. Describe initial and ongoing experiences of instructional mentors and other online support staff in their virtual interactions with participants. Assess actual versus targeted enrollments in programs and describe any difficulties associated with meeting or exceeding targets. Discuss results of evaluation activities with the PACE-IT team.	Qualitative and quantitative report(s) assessing institution's operational strengthens and weaknesses of the project after implementation; as well as recommendations for improvement. Integrate assessment of data collected on participants and participant satisfaction survey results. Report outcomes of initial program pilots and supporting materials and tools.
Develop and implement student summative and formative assessments, including intake, learning and certification assessments	Marketing & Recruitment of Targeted Populations: Describe outreach and marketing to targeted populations, measure the effectiveness of this effort and engagement from external partners. Analyze number of inquires/referrals by potential participants and initial assessments and subsequent acceptance rates to targeted quarterly enrollments. Intake Processes: Describe how participants were assessed (tools and processes), who conducted the assessment(s), average number of prior learning credits awarded (per participant) and in what areas; describe the backgrounds of participants (work and education) and summarize the alignment between program enrollments and potential participant's interests and assessed skills and abilities (ratio of referrals to participants selected	Qualitative report/assessment of the efficacy of developed and adopted assessments: demographics and backgrounds of potential participants and accepted/enrolled participants; intake assessments measuring participant preparedness to persist in self-paced programs; participant retention (quarter over quarter) achievement on (course/module) assessments; and pass rates (number of attempts and average number

	for grant-funded training). Formative Assessments: Measure the rate in which participant cohorts progress through formative (course/module) assessments following enrollment in a training program; average scores of assessments (measure gains over time and between cohorts); Summative Assessment: Describe process of obtaining license to proctor industry-recognized certification exams. Measure the time between entry and completion; as well as pass rates and number of industry-recognized certifications. Assess the impact of course or intervention/support service improvements, implemented per continuous improvement processes.	acquired) of industry-recognized certifications/credentials; participant completion rates (including duration) and job placement/retention rates or wage increases.
Priority 2: Improve student achievement through intensive supports		
Create and manage drop-in IT lab (sandbox) that provides students with technical support and work experiences	Describe process by which necessary equipment was procured and timeline for installing/modifying lab to accommodate online students. Describe improvements made and resources and tools available to online students (including equipment and staffing). Measure utilization of lab resources by online students (utilization rates). Measure student satisfaction with lab resources (staffing, hardware, software and environment). Describe type of work experiences provided by lab (START Center interns), supporting practical work experiences for online students. Survey START Center interns on value of learning experience.	Quantitative and qualitative report(s) describing the process of setting up the lab; utilization rates; participant satisfaction with resources provided and internship experiences; document impact of physical resource for online learners; utilization rate of student support services provided; delivery method and modifications based on continuous improvement processes.
Student support infrastructure enhanced for online learner	Describe what services and supports were provided to participants and by whom service needs identified and delivered: • By College: (tutoring, online student orientations, education and career advising, internship and job search, placement/referrals, Navigator referrals, and other. • Public workforce development system:	

	Wrap-around services, financial assistance/programs and others. • Employers & Employer Organizations: tuition assistance or scholarships, other Measure participant satisfaction with interactions with internal and external support services; describe delivery mode (in-person or virtual); and assess impact of improvements based on evaluation findings.	
Priority 3. Build student knowledge and experience through business and industry involvement (internal and external)		
Provide internships and other work project-based experiences on-campus and in community	Monitor and describe partner activities; Describe process for expanding internships, identifying work-based project experiences and the method in which these are implemented by faculty; assess employer satisfaction with participant interns and student satisfaction with internships and project-based experiences provided.	Qualitative and quantitative reports describing the increase internship and project-based work experiences provided to participants; partner engagement (involvement or lack thereof, importance and impact of these partnerships/relationships); results of surveys (employer and participant) and description of internships and project-based experiences provided by type, industry and relation to certificate programs.
Priority 4. Strengthen Pathway to Employment and/or Continued Education		
Increase and enhance opportunities for seamless articulation/transferability of credits to 2-year and 4-year education	Describe process, including obstacles for establishing new articulation agreements (co-enrollment transfer agreement with Central Washington University; transferability of certifications earned to Western Governor's University). Describe any challenges or issues that arise associated with transferability of credits or articulation agreements. Describe the process of using the Gates-funded open course library, central repository housed virtually by the State Board for Community and Technical Colleges and describe partner interaction (other 2-year community and technical colleges in the state of Washington, supporting student mobility/transferability.	Quantitative and qualitative report(s) describing process of developing and implementing articulation/transferability of credits agreements (including internal approvals); contributions and impact of external partners in this process (universities and high education state boards); utilization rates of curriculum developed by PACE-IT; participant access to information and advising on

	Track and report number of participants continuing their education at other 2 or 4-year colleges and universities (Associates or Bachelors Degree) to project stated outcomes. Describe advising resources and information developed for participants on articulation and transfer pathways, including mode(s) of delivery and supporting advising services.	transfer/articulation; and participant outcomes.
Assist students in job seeking and job placement services	Describe the process of developing expanded outreach to employers to identify job opportunities, including the number of introductions provided between job seeker (participant) and employers. Measure the increase of jobs identified (placed into online job board) that align with targeted occupations. Measure the number of veteran participants referred to and subsequently utilizing Hire America's Heroes LinkedIn site to connect with employers Track and report entered employment and employment retention of program completers and non-completers in IT occupations, non-IT occupations and by industry sector.	Quantitative and qualitative report describing process of identifying and communicating job opportunities for participants; level of contributions and impact of partner engagement in achieving stated placement objectives; participant utilization rates of resources provided (self-placed versus aided placements/referrals); and progress towards and achievement of stated job placement and retention outcomes.

iii. Selection of a Third-Party Evaluator

Edmonds Community College's procurement policy adheres to State rules and regulations, stipulating, *"Insofar as practicable, all purchases and sales shall be based on competitive bids, and a formal sealed, electronic, or web-based bid procedure, subject to RCW 43.19.1911 and RCW 39.29, shall be used as standard procedure for all purchases and contracts for purchases and sales executed by the state purchasing and material control director and under the powers granted by RCW 43.19.190 through 43.19.1939 and RCW 39.29. This requirement also applies to purchases and contracts for purchases and*

sales executed by agencies, including educational institutions, under delegated authority granted in accordance with provisions of RCW 43.19.190 or under RCW 28B.10.029 and RCW 39.29."

EdCC will adhere to all applicable state and federal laws and regulations governing the process of procuring services in support of the process of contracting with third-party, independent evaluator(s)/organization(s). Upon grant award, EdCC will develop a Request for Qualifications (RFQ) for the Third Party Evaluator(s). The RFQ will be developed in two parts, requiring organizations to respond to their qualifications pertaining to the evaluation of participant outcomes/impacts and program implementation evaluation plan components, supporting a comprehensive and rigorous evaluation of the proposed PACE-IT strategy.

Expertise Required: Master's degree with major work in the following: 1) Education research design; 2) Education and Public Workforce Development System statistics and analysis; 3) Education program evaluation and 4) Educational measurement. In addition, the 3rd party evaluator should possess the ability to communicate technical data to non-technical personnel; successful experience as a program evaluator or other evaluation projects of federal-grant funded projects; at least ten years in the educational field, consisting of experience in e-learning, technological workforce development and/or technology curriculum design and assessment; and effective methods of delivering and assessing professional-technical education and training.

Capacity Required: The ability to attend regular meetings with PACE-IT team, review of monthly progress reports from Project Director and other PACE-IT team members and providing an appropriate commitment to time required to support rigorous evaluation over four years (affirming statement).