Connecticut
Health & Life Sciences
Career Initiative

Promising Practices from Connecticut Health & Life Sciences Career Initiative Consortium

September 2016

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CAPITAL
Community
COLLEGE

Gateway
Community College

MANCHESTER
COMMUNITY
COLLEGE

MxCC
MIDDLESEX COMMUNITY COLLEGE

NCC

EASTERN
CONNECTICUT
STATE UNIVERSITY

CharterOak
STATE COLLEGE

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Scott Smith, Middlesex Community College
Erik Rambusch, Norwalk Community College

Workforce Investment Boards:
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Marianne Martinez, North Central
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Fred Pratt, South Central
Michael Stokes, Southwest
Jill Watson, Workforce Alliance

Co-Grantee Chief Academic Officers:

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Shirley Adams, Provost, Charter Oak State College
Dimitrios Pachis, Provost, Eastern Connecticut State University
Mark Kosinski, Dean, Gateway Community College
Marcia Jehnings, Interim Dean, Manchester Community College
Steven Minkler, Dean, Middlesex Community College
Vanessa Morest, Interim Dean, Norwalk Community College

Co-Grantee Financial Management:

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Ted Hale, Capital Community College
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Cliff Williams, Charter Oak State College
Diane Moore, Eastern Connecticut State University
Linda Li, Gateway Community College
Sherri Farr, Manchester Community College
Kim Hogan, Middlesex Community College
Rose Ellis, Norwalk Community College
Carrie McGee-Yurof, Norwalk Community College

Grant Partners:

Connecticut Department of Labor
Connecticut Women's Education and Legal Fund
C.N.A.
The Jackson Laboratory for Genomic Medicine
MicroBurst Learning
PPM Associates

Grant Advisory Board, 2012-2016:

Todd Arnold, Managing Director, Mt. Sinai Genetic Testing Laboratory
Elizabeth Beaudin, Director, The Connecticut Hospital Association
Petra Clark-Dufner, Associate Director, CT Area Health Education Center (AHEC) Network
Matt Fleury, CEO, The Connecticut Science Center
Susan Froshauer, President/CEO, CURE
Bruce Gould, Medical Director, UCONN School of Medicine

Mary Ann Hanley, Liaison for Community and Business Alliances, St. Francis
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Michael Marks, Physician
Paul Pescatello, Chair, CBIA-Bioscience Growth Council
Casey Pickett, DECD Bioscience Work Group Rep, CT Dept. of Economic & Community Development
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Anne Swallow, Director for Training & Education for Clinical, Greenwich Hospital
Estella Lopez, Interim Provost & Senior Vice President, Board of Regents
Evena Williams, Senior Human Resources Partner, Stamford Hospital

Connecticut Health and Life Sciences Career Initiative (CT HL-SCI) Consortium Grant Overview

On September 19, 2012, Secretary of Labor Hilda L. Solis announced $500 million in Round 2 grants to community colleges and universities across the country for the development and expansion of innovative training programs. The grants are part of the Trade Adjustment Assistance Community College and Career Training (TAACCCT) initiative, which promotes skills development and employment opportunities in fields such as advanced manufacturing, transportation, and health care, as well as science, technology, engineering, and math careers through partnerships between training providers and local employers.

Connecticut received $12 million for the Connecticut Health & Life Sciences Career Initiative (CT HL-SCI). CT HL-SCI uses three evidence-based program strategies to provide certifications, industry-recognized credentials, and associate degrees to prepare veterans, Trade Adjustment Assistance (TAA)-impacted, dislocated, and other underemployed workers for careers in the growing health and life sciences occupations. Efforts increase the use of online and technology-enabled learning through online math and science booster modules; self-assessment and feedback surveys embedded in online course modules; online workplace skills assessment and development tools; and the migration of courses to online and hybrid delivery. Other strategies used are expanding prior learning assessments and recruitment and placement services to students.

CT HL-SCI is led by Norwalk Community College and is comprised of four community colleges, one state university, and the state's one online 4-year college as co-grantees and six grant partner organizations. In addition, the consortium colleges partner with local employers, community groups, and workforce agencies.

Community College and Institution Co-Grantees

- Capital Community College, Hartford, CT
- Charter Oak State College, New Britain, CT
- Eastern Connecticut State University, Willimantic, CT
- Gateway Community College, New Haven, CT
- Manchester Community College, Manchester, CT
- Middlesex Community College, Middletown, CT
- Norwalk Community College, Norwalk, CT

CT HL-SCI Partners

Workforce Investment Boards:

The Workforce Investment Boards (WIBs) are a critical partner in the CT HL-SCI Initiative. The following WIBs are partners with this grant:

Capital Workforce Partners (CWP)

www.capitalworkforce.org

Service Area: Andover, Avon, Berlin, Bloomfield, Bolton, Bristol, Burlington, Canton, East Granby, East Hartford, East Windsor, Ellington, Enfield, Farmington, Glastonbury, Granby, Hartford, Hebron, Manchester, Marlborough, New Britain, Newington, Plainville, Plymouth, Rocky Hill, Simsbury, Somers, Southington, South Windsor, Stafford, Suffield, Tolland, Vernon, West Hartford, Wethersfield, Windsor, and Windsor Locks.

Eastern Connecticut Workforce Investment Board (EWIB)

www.ewib.org

Service Area: Ashford, Bozrah, Brooklyn, Canterbury, Chaplin, Colchester, Columbia, Coventry, Eastford, East Lyme, Franklin, Griswold, Groton, Hampton, Killingly, Lebanon, Ledyard, Lisbon, Lyme, Mansfield, Montville, New London, North Stonington, Norwich, Old Lyme, Plainfield, Pomfret, Preston, Putnam, Salem, Scotland, Sprague, Sterling, Stonington, Thompson, Union, Voluntown, Waterford, Willington, Windham, and Woodstock.

Northwest Regional Workforce Investment Board (NRWIB)

www.nrwib.org

Service Area: Barkhamsted, Bethel, Bethlehem, Bridgewater, Brookfield, Canaan, Cheshire, Colebrook, Cornwall, Danbury, Goshen, Hartland Harwinton, Kent, Litchfield, Middlebury, Morris, Naugatuck, Newtown, New Fairfield, New Milford, New Hartford, Norfolk, North Canaan, Prospect, Redding, Ridgefield, Roxbury, Salisbury, Sharon, Sherman, Southbury, Thomaston, Torrington, Warren, Washington, Waterbury, Watertown, Winchester, Winsted, Wolcott, and Woodbury.

Workforce Alliance

www.workforcealliance.biz

Service Area: Bethany, Branford, Chester, Clinton, Cromwell, Deep River, Durham, East Haddam, East Hampton, East Haven, Essex, Guilford, Haddam, Hamden, Killingworth, Madison, Meriden, Middlefield, Middletown, Milford, New Haven, North Branford, North Haven, Old Saybrook, Orange, Portland, Wallingford, West Haven, Westbrook, and Woodbridge.

Workplace, Inc.
www.workplace.org
Service Area: Ansonia, Beacon Falls, Bridgeport, Darien, Derby, Easton, Fairfield, Greenwich, Monroe, New Canaan, Norwalk, Oxford, Seymour, Shelton, Stamford, Stratford, Trumbull, Weston, Westport, and Wilton.

In addition to the Project Advisory Board and the Workforce Investment Boards referred to above, CT HL-SCI has the support of many other partners, including:

- Connecticut United for Research Excellence, Inc. (CURE)
- Connecticut Hospital Association (CHA)
- Saint Francis Hospital and Medical Center
- Yale-New Haven Hospital
- Greenwich Hospital
- Eastern Connecticut Health Network (ECHN)
- Stamford Hospital
- University of Connecticut Health Center & John Dempsey Hospital
- MetroHartford Alliance for Careers in Healthcare (MACH)

What We Do

In Connecticut, the health and life sciences represent an area of significant strategic growth supported by both public and private investment. Approximately 200,000 people in the state work in health and life science industries, which are expected to add at least another 11,000 additional jobs in the next eight years (EMSI Analyst Industry Cluster Report on Biomedical Industries; HL- SCI Technical Proposal, Page 5).

The Connecticut Health and Life Sciences Career Initiative (CT HL-SCI) is designed to prepare workers to take on these new jobs with a particular focus on recruitment of veterans, TAA-eligible workers (those displaced by foreign trade), and workers who are dislocated, unemployed, or under-employed.

Through a consortium of five community colleges (Norwalk, Capital, Gateway, Manchester and Middlesex), with Norwalk serving as lead agency, new programs are developed and existing programs are revised with input from industry to ensure that the skills needed to succeed in these new jobs are being taught at the colleges. The consortium colleges provide certifications, industry-recognized credentials, and certificate and associate degree training in a host of new areas.

Additionally, Charter Oak State College, the state's exclusive online college, provides expertise in prior learning assessments to ensure that students get credit for military service and other prior learning experience. As administrator of the Connecticut Credit Assessment Program (CCAP), Charter Oak also reviews non-credit courses and workplace and nonprofit training programs to determine whether such programs are eligible for credit.

CT HL-SCI also includes a commitment to stacked and latticed credentials to maximize options for students. Toward that end, Eastern Connecticut State University (ECSU) is part of the consortium to ensure that pathways are created for students from community colleges to four-year programs. ECSU is also creating and implementing a Summer Undergraduate Research Program (SURP) that gives students access to learning opportunities with state-of-the-art facilities and equipment, and offers them exposure to an on-campus living experience.

In addition, CT HL-SCI includes a significant commitment to recruitment and placement. Each of the consortium colleges has a full-time Recruitment & Placement Coordinator who serves as a career pathway advisor and tracks students from their initial contact through all of their coursework. This includes helping students to make sure that they make effective course selections to move successfully through their programs and preparing them for internships and jobs. In addition, CT HL-SCI has strengthened the relationship between community colleges and Workforce Investment Boards (WIB) by providing Recruitment & Placement Coordinators at each WIB.

Finally, each consortium college has a part-time Veterans' Associate to focus special attention on recruiting veterans and addressing their unique needs as students. Together, this group coordinates recruitment efforts to bring TAA-eligible and other under- and unemployed workers into the community college system; builds relationships with employers to place students into internships; and organizes employment placements for program completers.

CT HL-SCI implementation includes three evidence-based program strategies:

(1) Curriculum Innovation: The Curriculum Innovation Workgroup is creating at least forty-nine (49) new and revised certificate and degree programs that are developed in collaboration with and driven by industry demand and align certificate programs with industry-recognized credentials. Additionally, the consortium is developing math and science booster modules that will be available online and on mobile devices. Online/hybrid learning courses assists at least 2,400 students in accelerating course completions and making education more accessible to a broader range of students.

(2) Prior Learning Assessments (PLAs): As mentioned above, prior learning assessments allow students to earn college credits for work skills and on-the-job learning, thereby improving retention rates and accelerating time to program completion.

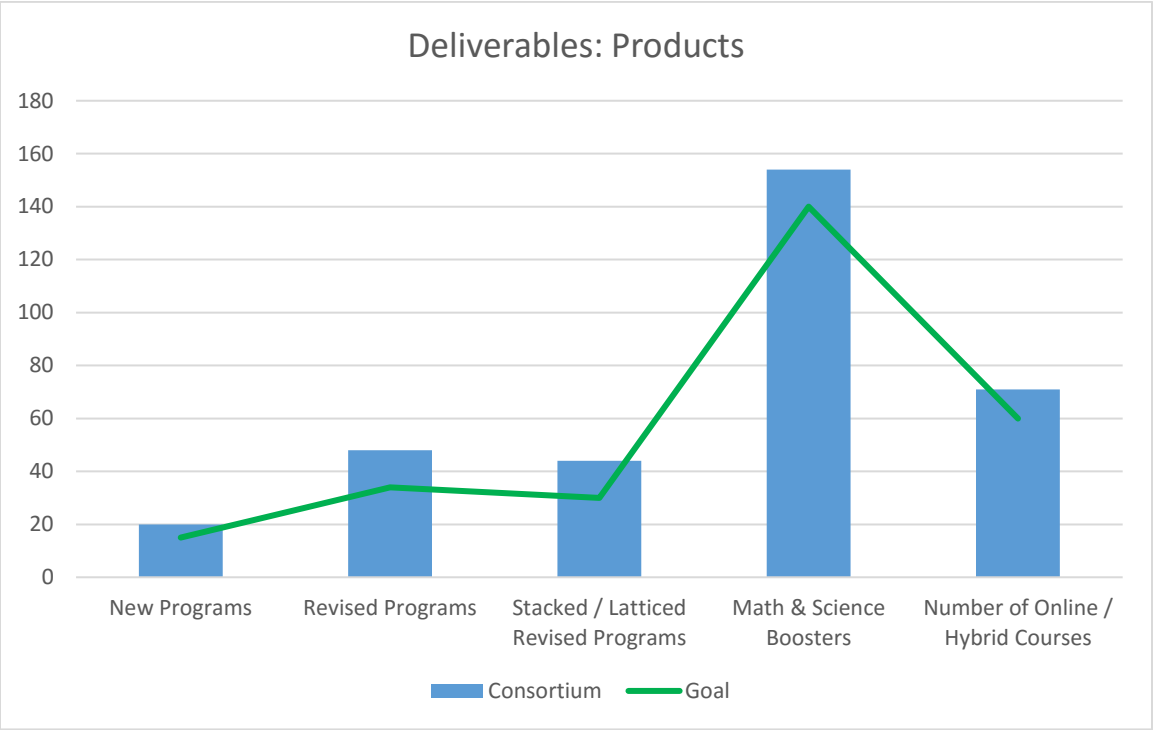
(3) Recruitment and Placement Services: It is well established that students with internship experience have more success in finding and retaining jobs. Toward that end, the initiative set an ambitious goal of 360 internship placements, and the colleges and Workforce Investment Boards work collaboratively to identify employers and secure those opportunities.

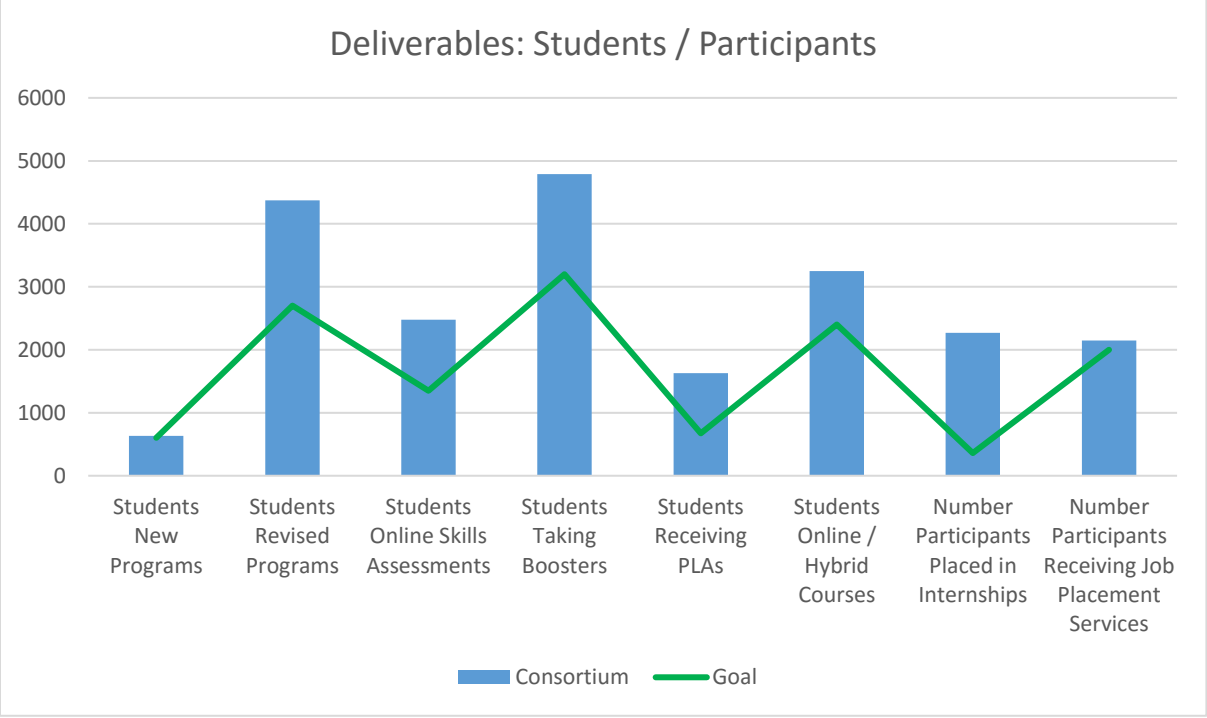
Consortium CT HL-SCI Deliverables

Deliverables	Goal
1) New Programs	**15**
2) Revised Programs	**34**
3) Students Enrolled in New Programs	**600**
4) Stacked / Latticed Programs	**30**
Stacked / Latticed New Programs	**-**
5) Students Enrolled in Revised Programs	**2700**
6) Students Taking Online Skills Assessments - UNIQUE	**1350**
7) Math and Science Boosters	**140**
8) Students Taking Boosters - UNIQUE	**3200**
9) Students Receiving PLA credits - UNIQUE	**675**
10) Number of PLA Credits Awarded	**10000**
11) Students Taking Online + Hybrid Courses - UNIQUE	**2400**
12) Number of Online + Hybrid Courses	**60**
13) Number of Online Modules with Feedback	**450**
14) Number of Participants Placed in Internships - UNIQUE	**360**
15) No. of Participants Receiving Job Placement Services - UNIQUE	**2000**
16) CCAP Outreach to Programs	**36**
17) CCAP Credits Recognized	**324**

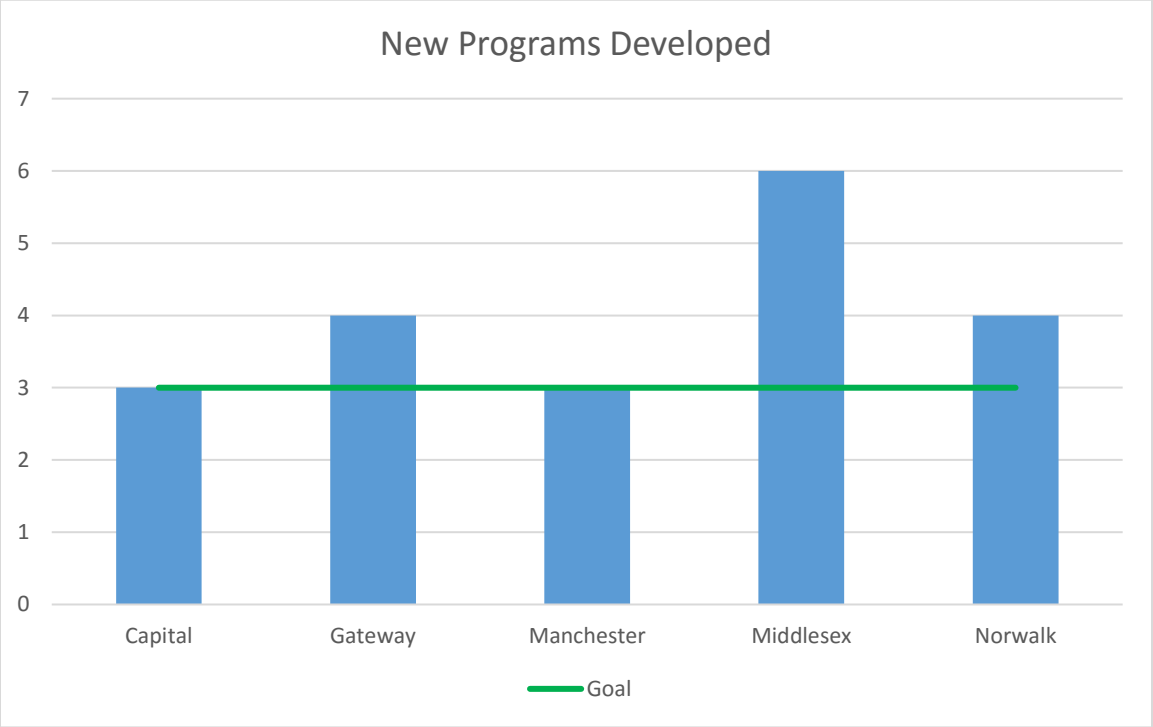
The Consortium exceeded all of the final deliverable goals (above). This indicates that the Consortium greatly expanded access to CT HL-SCI programs of study, the types of programs offered, and the availability of academic supports. The breakdown of the deliverables follows.

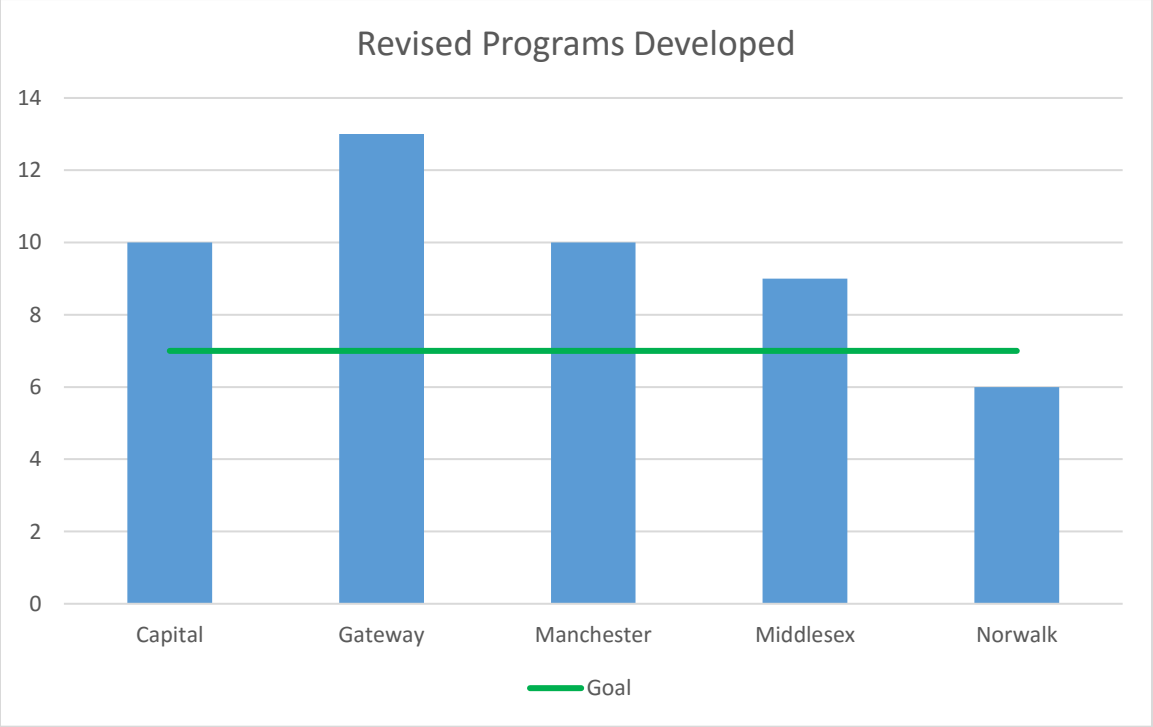
As of March 30, 2016, the Consortium achieved the following outcomes on the deliverables listed above:

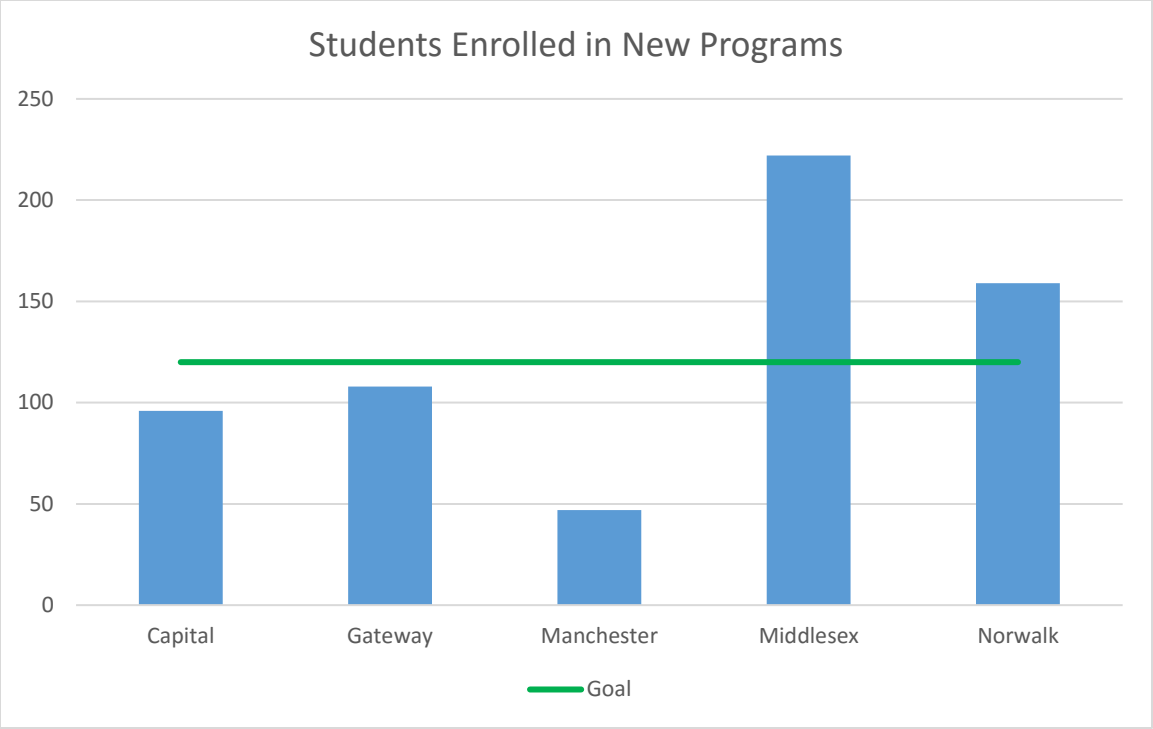




By Co-Grantees (Note: While individual co-grantees may appear under the targeted goal, the grant goals apply to the Consortium as a whole, allowing individual colleges to focus on those deliverables most critical to their needs and strengths.):






Students Enrolled in New Programs
250
200
150
100
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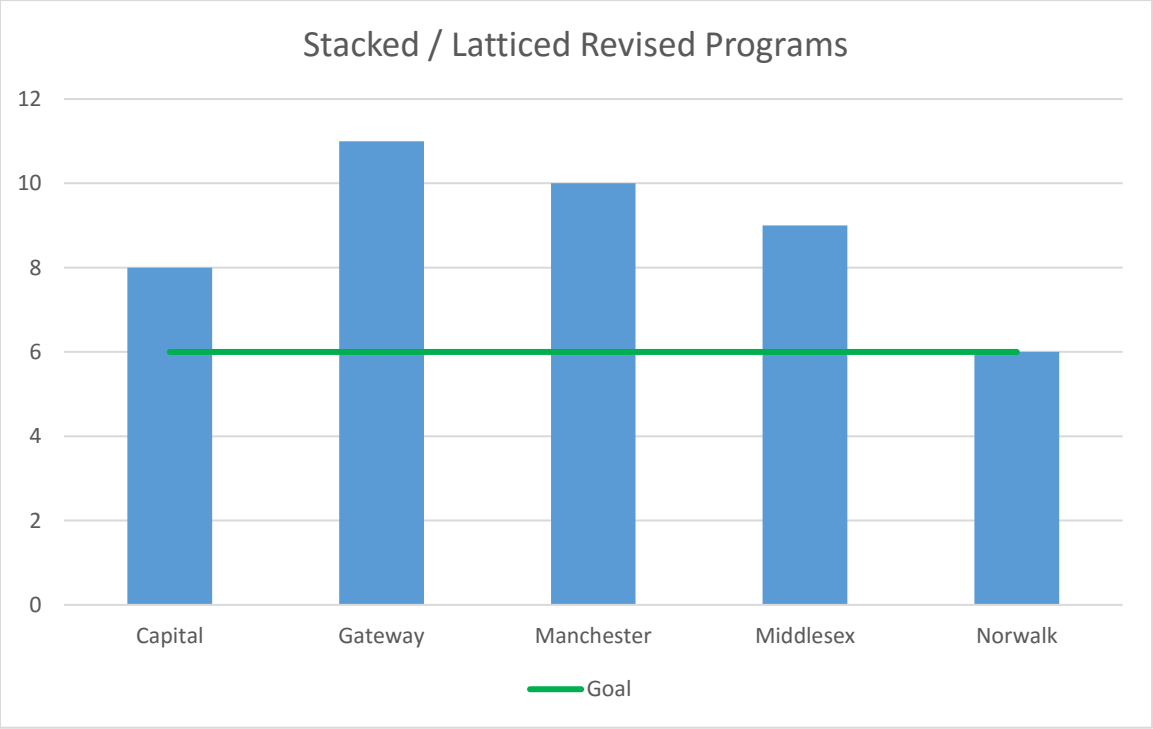
Capital
Gateway
Manchester
Middlesex
Norwalk
Goal


Stacked / Latticed Revised Programs
12
10
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Capital
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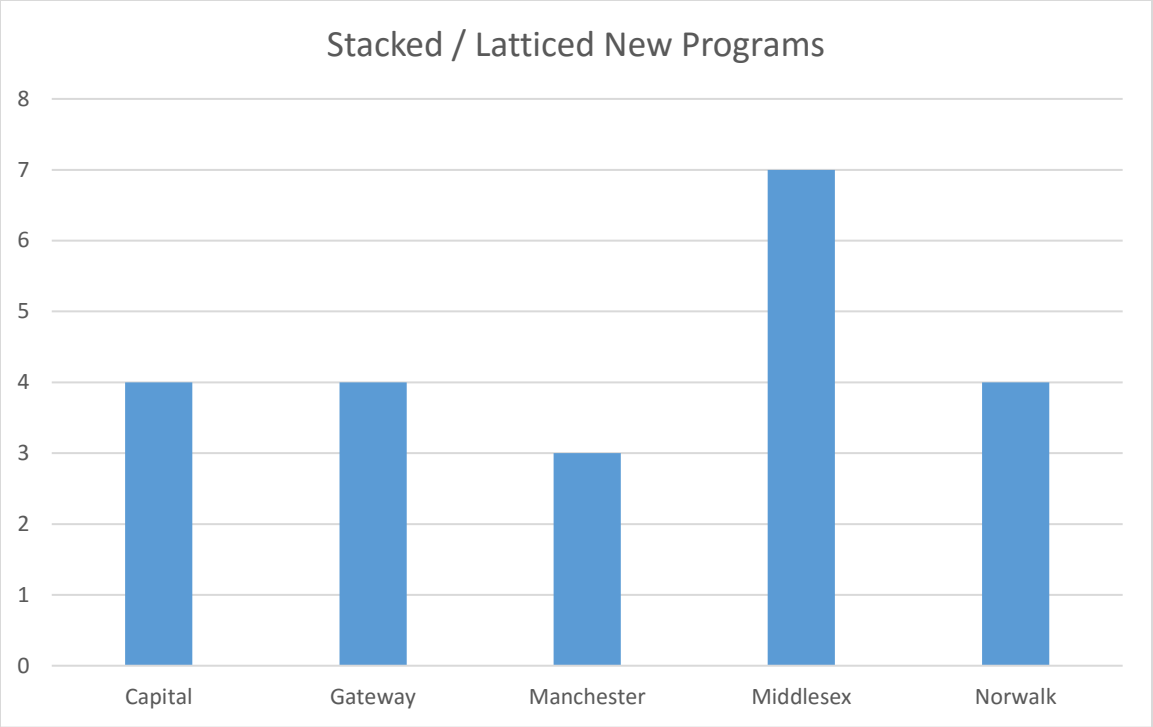
Norwalk
Goal


Stacked / Latticed New Programs
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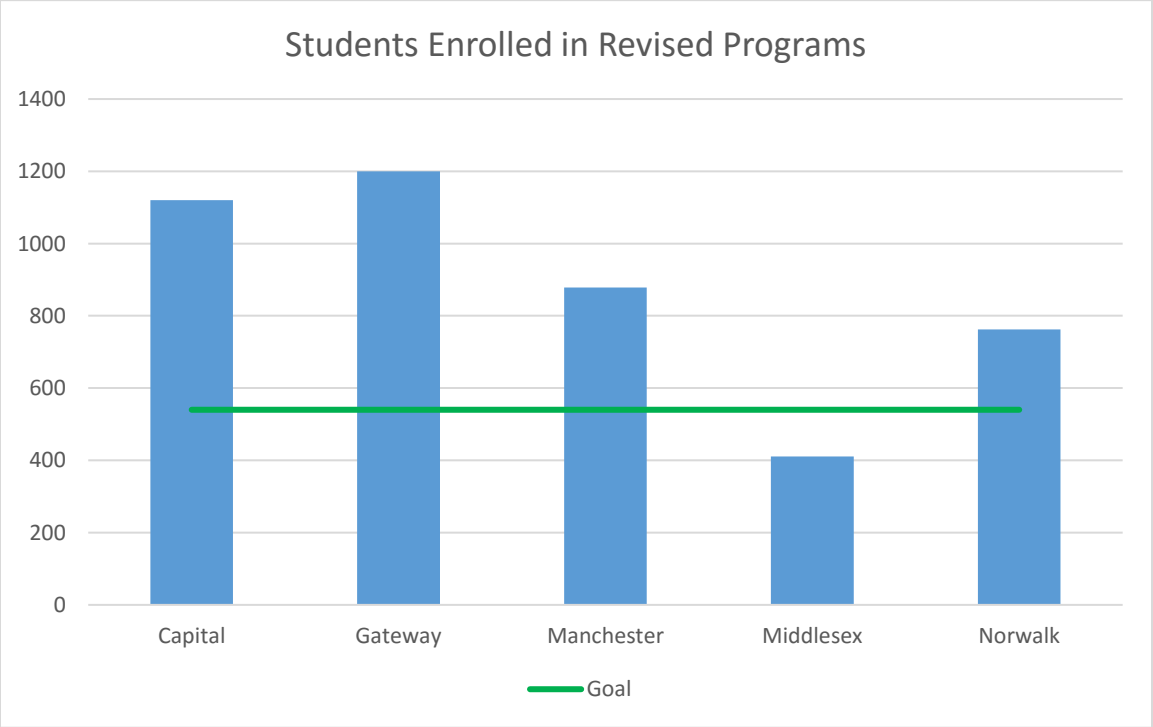
Students Enrolled in Revised Programs
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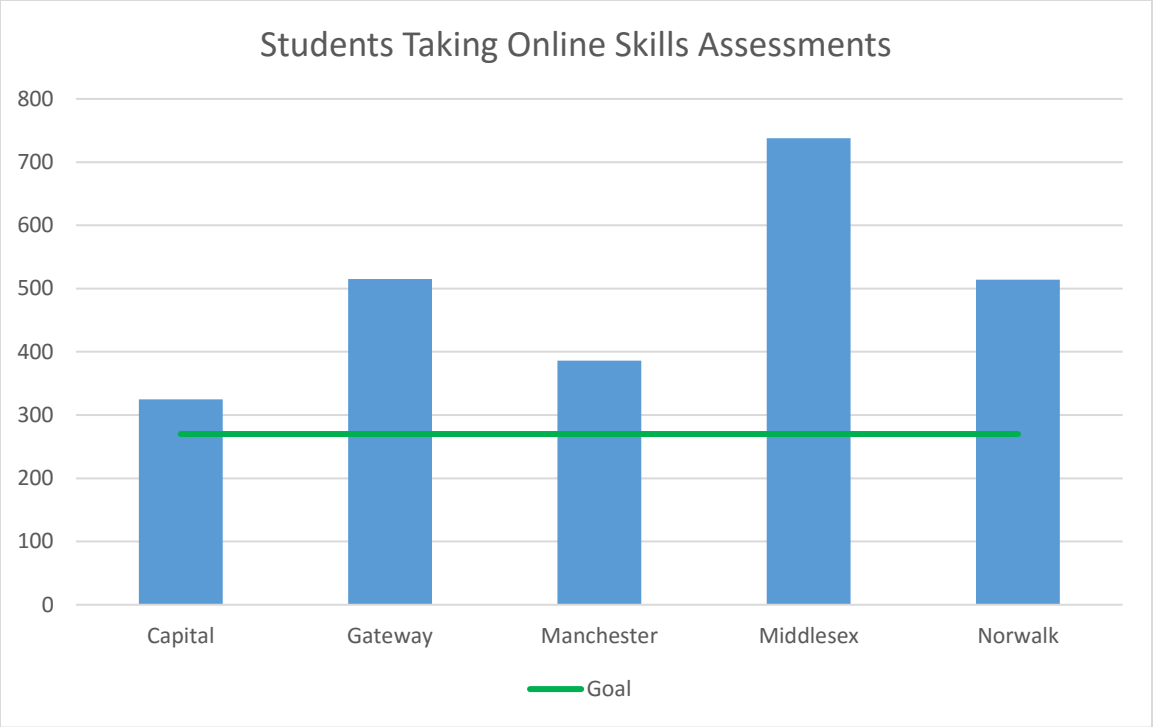
Goal


Students Taking Online Skills Assessments
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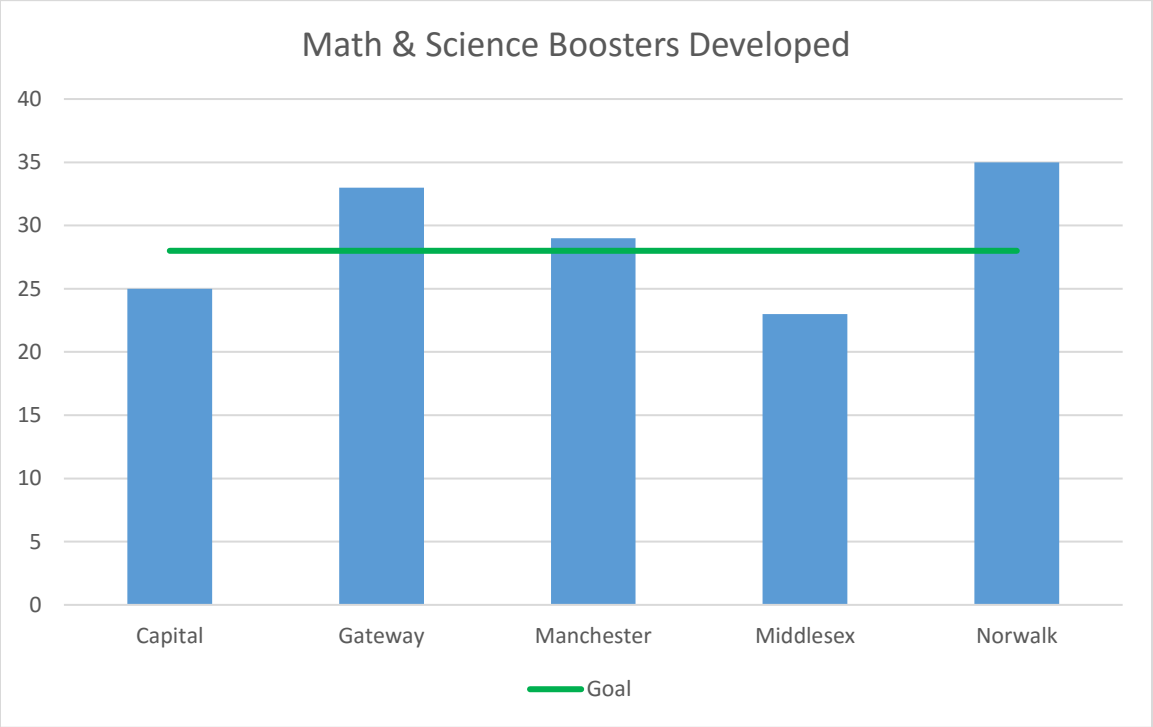
Goal


Math & Science Boosters Developed
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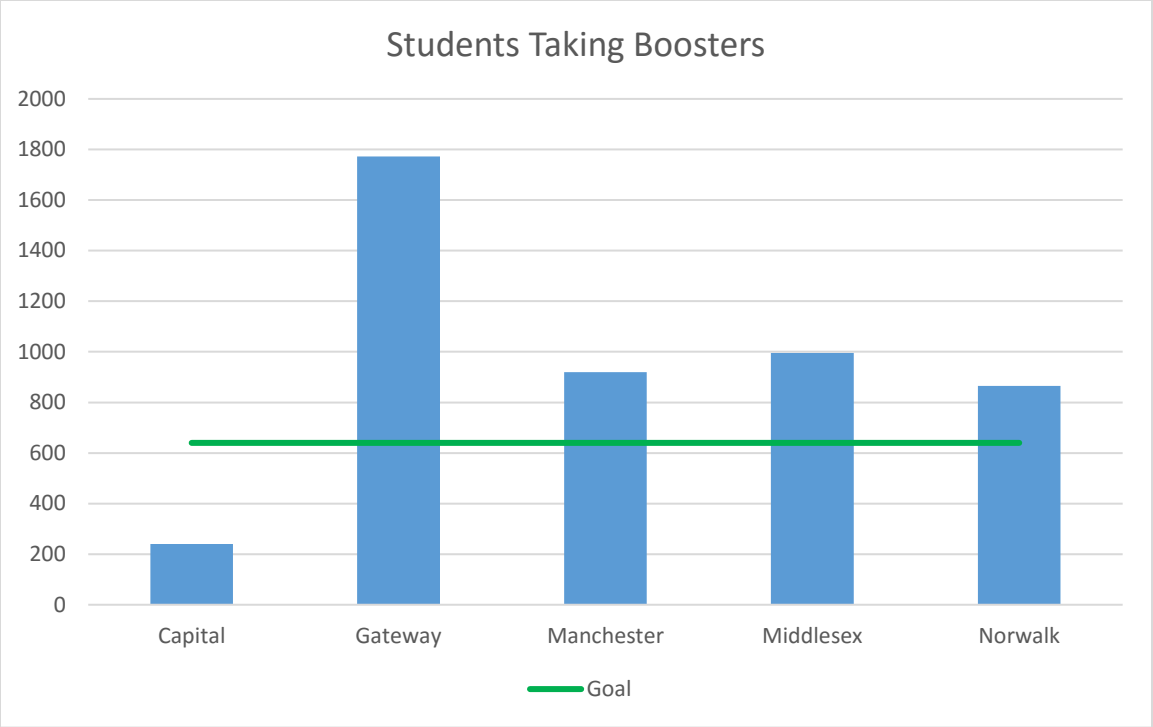
Students Taking Boosters
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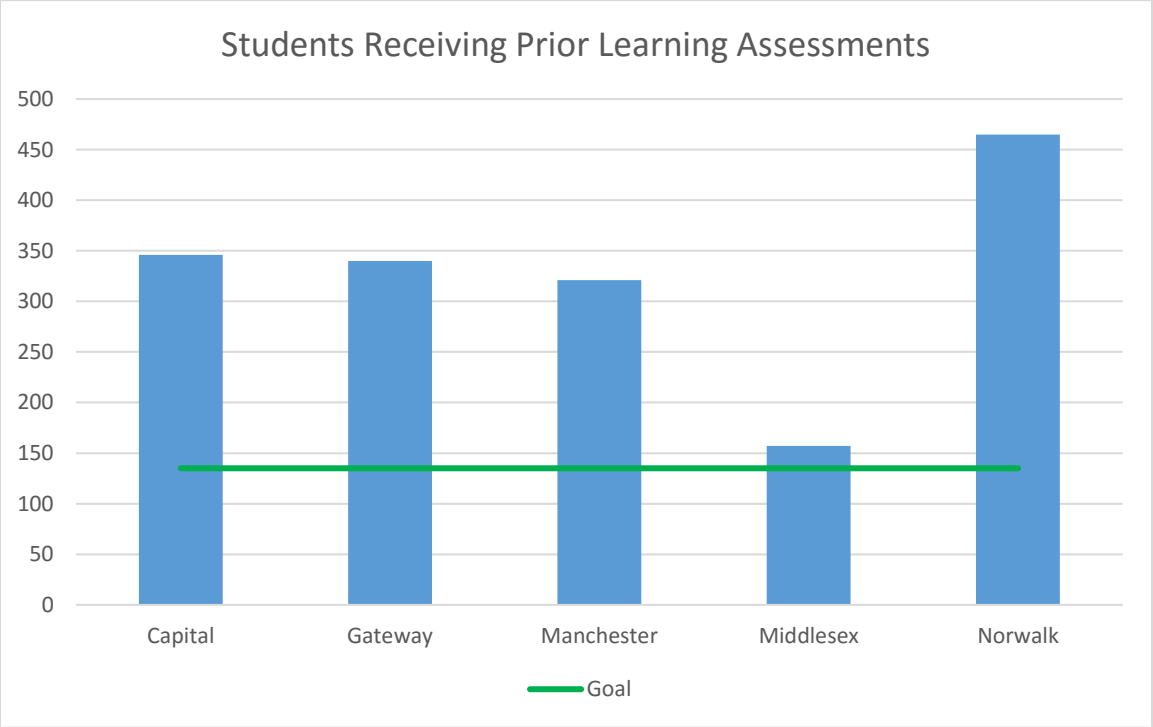
Students Receiving Prior Learning Assessments
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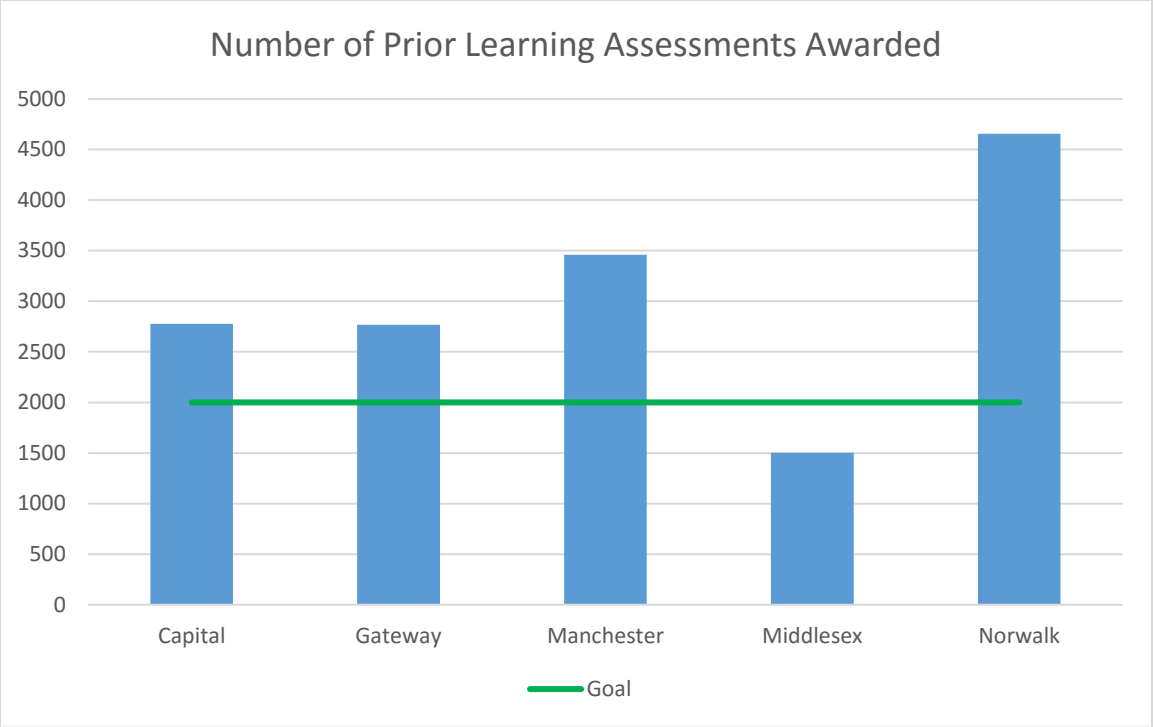
Goal


Number of Prior Learning Assessments Awarded
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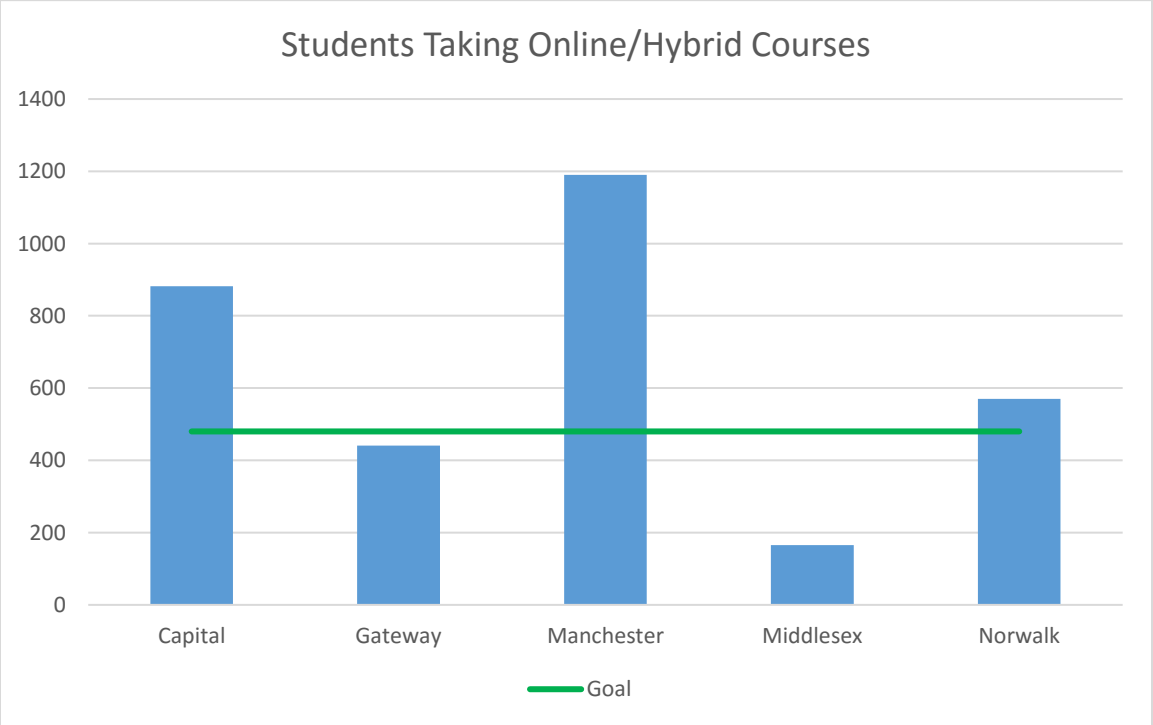
Norwalk
Goal


Students Taking Online/Hybrid Courses
1400
1200
1000
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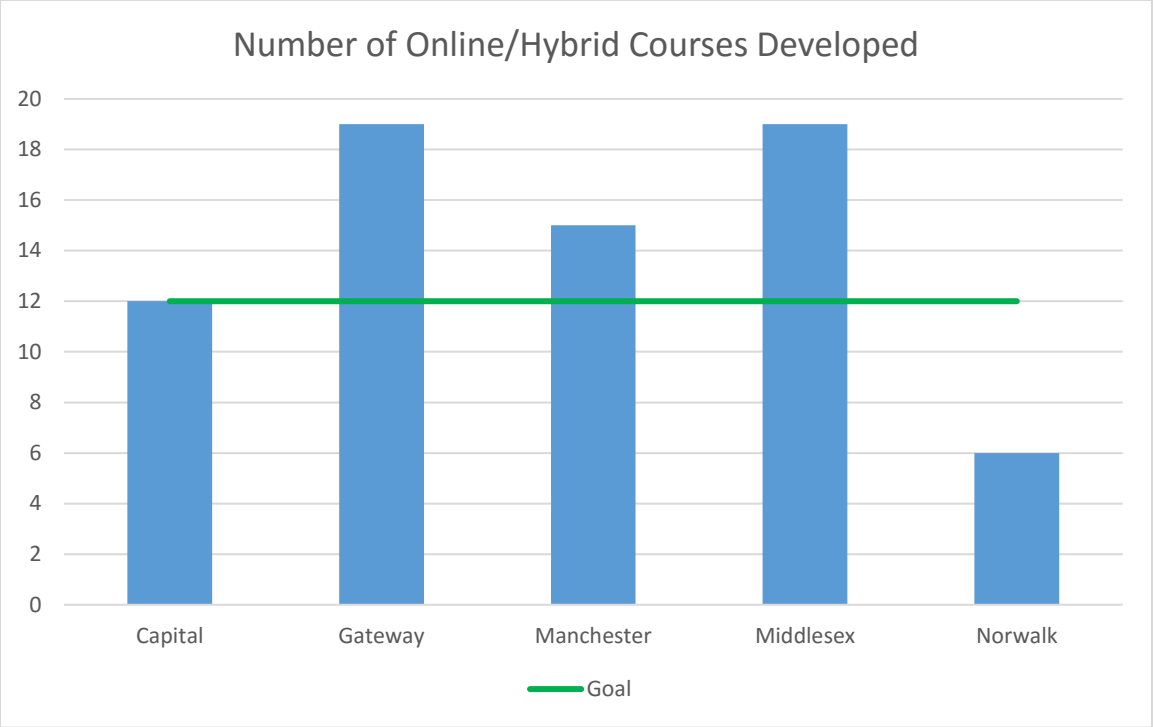
Capital
Gateway
Manchester
Middlesex
Norwalk
Goal


Number of Online/Hybrid Courses Developed
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12
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2
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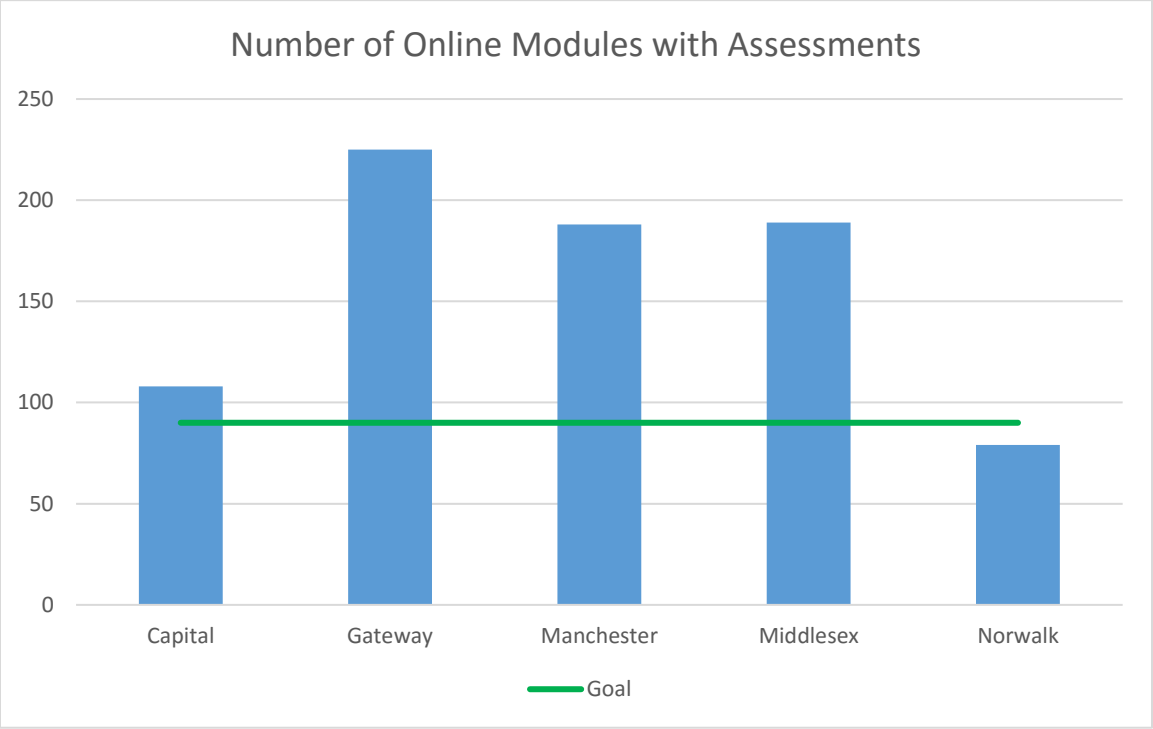
Capital
Gateway
Manchester
Middlesex
Norwalk
Goal


Number of Online Modules with Assessments
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200
150
100
50
0
Capital
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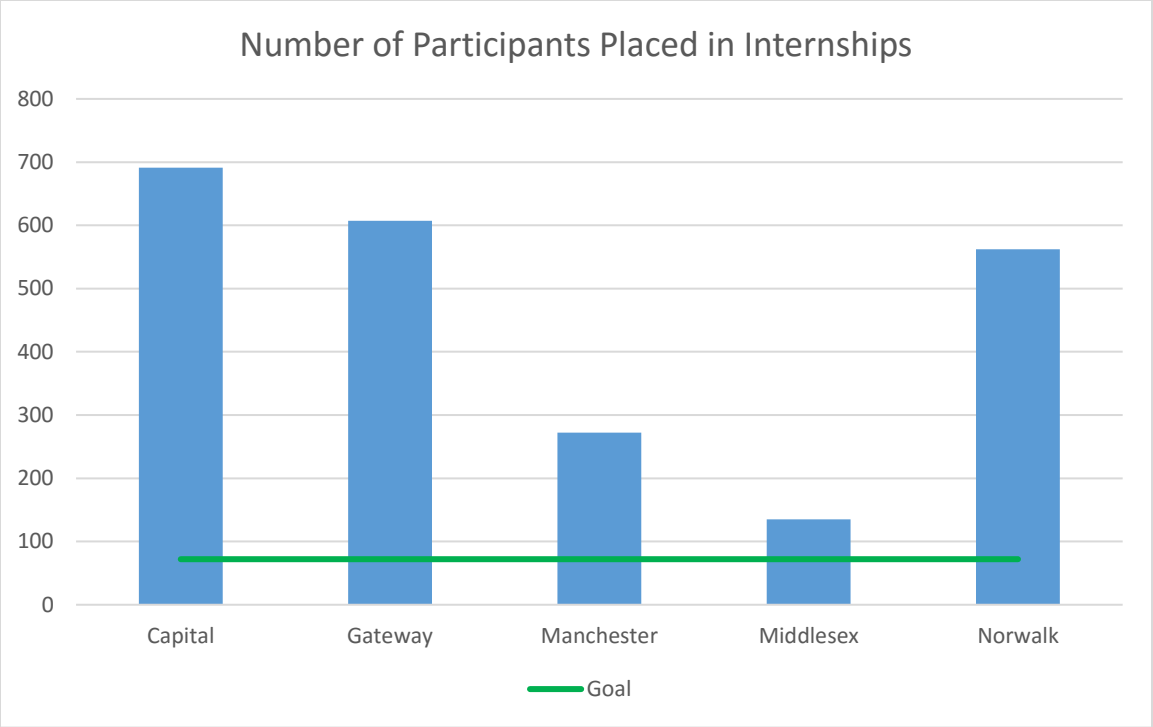
Manchester
Middlesex
Norwalk
Goal


Number of Participants Placed in Internships
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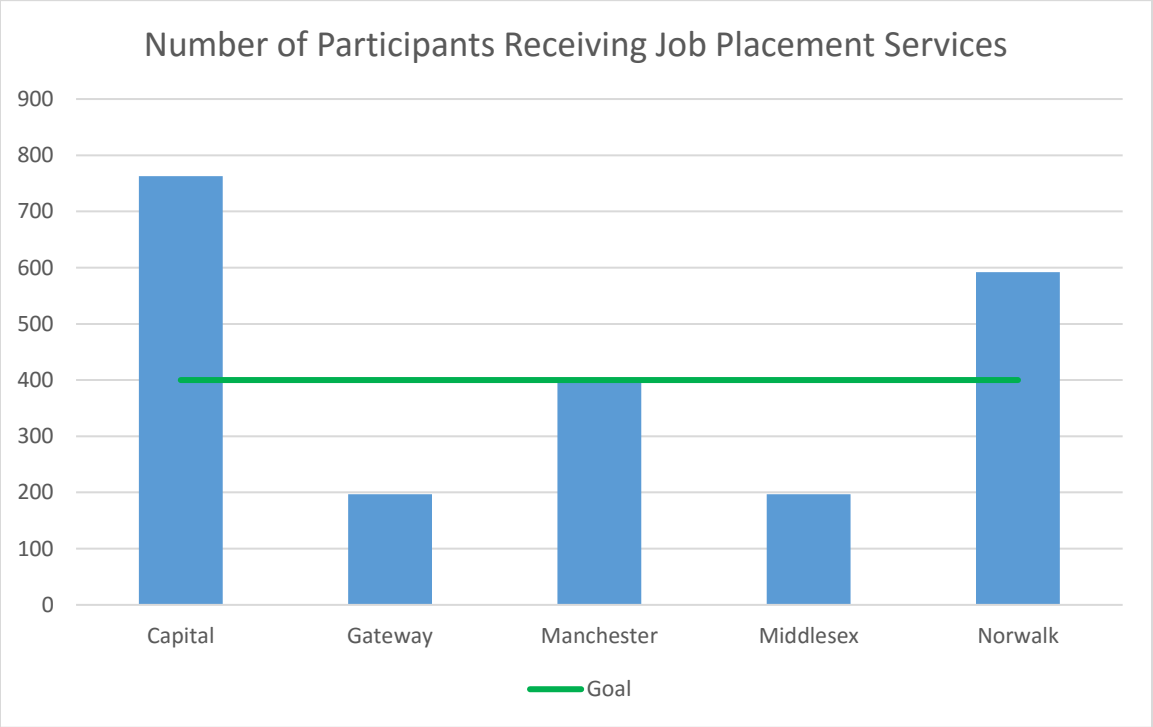
700
600
500
400
300
200
100
0
Capital
Gateway
Manchester
Middlesex
Norwalk
Goal


Number of Participants Receiving Job Placement Services
900
800
700
600
500
400
300
200
100
0
Capital
Gateway
Manchester
Middlesex
Norwalk
Goal

CT HL-SCI Core Strategies

Strategy 1: Curriculum Innovation

Strategy 2: Prior Learning Assessments and Connecticut Credit Assessment Program

Strategy 3: Enhanced Internships & Placement Services

Strategy 4: Project Management

For Further Information

The CT Health and Life Sciences Career Initiative makes available a wide variety of information about the entire project at www.ct.edu/initiatives/hlsci or www.skillscommons.org/handle/taaccct/443

Curriculum Innovation: Promising Practices for CT HL-SCI Strategy 1

The CT HL-SCI Consortium, consisting of five community colleges, provides targeted certifications, industry-recognized credentials, and associate degree programs to prepare veterans, Trade Adjustment Assistance (TAA)-impacted, dislocated, and other under-employed workers statewide for careers in health and life sciences through the implementation of Curriculum Innovation. As part of this initiative, Curriculum Innovation is achieved through establishing at least 15 new certificate / degree programs that align for-credit certificate programs with industry-recognized credentials, creating math and science booster modules, and delivering online/hybrid learning courses to 2400 students in order to accelerate course completion.

CT HL-SCI Integrates Online Learning Modules (Boosters) into Courses

The Challenge: Students need refreshers / foundational assistance in courses

Over 60% of entering community college students require some form of developmental coursework, as many students arrive unprepared for college-level courses. Although colleges create developmental courses to help students, some studies question whether all students, particularly those with greater needs, can take advantage of such coursework. Studies have shown that roughly 30% of students who are referred to developmental coursework do not enroll in any remedial courses. Having community college students prepare for college-level coursework remains a challenge for many post-secondary institutions; a recent study of Connecticut's community colleges showed a 7.8% three-year graduation rate for students taking remedial courses vs. 19.1% for students who did not take remedial courses. Taken together, these structural gaps create formidable educational barriers for many TAA-eligible and other dislocated workers.

The Solution: Boosters

A booster is defined as a self-paced, online learning module (30-75 minutes) that generally contains the following elements: learning objectives, pre- and post-tests, interactive materials, citations, and a survey. The purpose of the boosters is to introduce and/or reinforce math and science concepts to increase student mastery and course success. The boosters are a vehicle for addressing math or science areas where students may not have the skills needed for a course or program. A package of boosters can serve as review of those skills to ensure students are prepared for a course. By taking greater advantage of online and technology-enabled learning, students are able to start and complete modules at times convenient to them and to repeat modules, as necessary, to ensure skill mastery, thus, making it easier and faster to complete college-level coursework. Boosters are designed to be useful tools for students – tools that can

be accessed 24/7 on a variety of devices, including laptops, iPads, and smart phones. Individual faculty can determine which booster(s) will be included in their courses(s) and whether boosters will be required as part of a course grade, offered as extra credit work, or considered to be supplemental course materials.

Curriculum Innovators at each community college worked closely with faculty and department heads to identify booster topics that would be most beneficial to students. The majority of the content developers for the boosters were faculty at the respective school. In some cases, the faculty members created a usable booster. These faculty went through the iTeach course offered by the Board of Regents. Many of the early boosters were developed through different platforms and were designed by the author. These boosters were then edited or reviewed by peer faculty and finally put on Blackboard for student use.

CT HL-SCI partnered with Microburst Learning (MBL) to evaluate newly developed boosters, assist in developing additional boosters, and ensure that boosters met standards for online learning. MBL developed a custom rubric that analyzed each booster on a number of standards, including ADA Compliance, AIM/CAST Compliance, ADDY Design Standards, and compliance standards from the SkillsCommons Accessibility Checkpoints Guide. MBL reviewers used this custom rubric to review each booster and made suggestions for changes where needed.

MBL's design team used these suggested changes to take the instructors' original material and convert it into a SCORM package that is AIM/CAST and ADA compliant and increased the level of interactivity from the original format. Some examples of interactive elements that were added include drag and drop activities, virtual process interactions, virtual scenarios, and step-by-step process interactions. The aim of the added interactions was to make the boosters more engaging to the students and to give the students a virtual "hands-on" experience that offered a deeper level of learning.

For the final step in development, MBL sent the completed SCORM packages back to the original instructor or to a Subject Matter Expert (SME) designated by the college for review. MBL then made any modifications requested by the instructors/SMEs and this review process was repeated until the packages were approved.

The Results:
Together, the community colleges and MBL developed 154 boosters, which exceeded the requirement of 140.

Boosters cover the following subject areas:

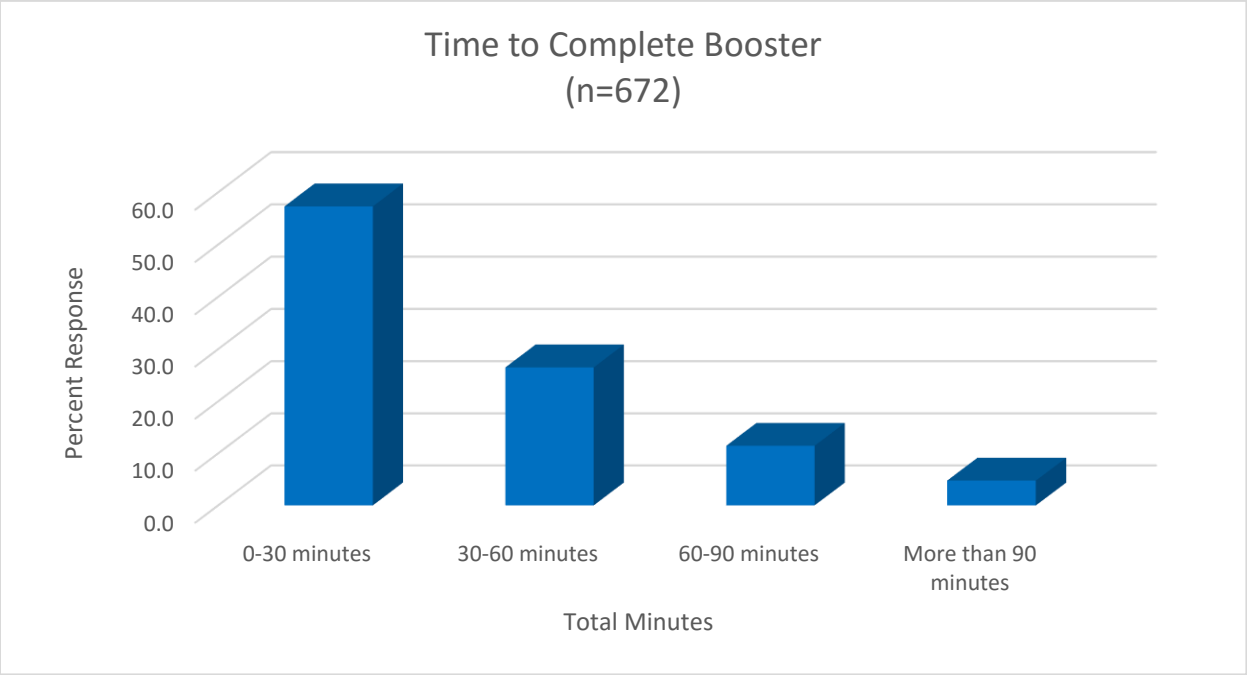
Subject Area	# of Boosters
Algebra	9
Basic Math / Pre-Algebra	6
Biology	18
Chemistry	6
Ecology	8
Excel	4
Exercise Science	2
General Science	6
Genetics	15
Graphing	1
Human Biology	32
Math for Health Science	1
Measurement	2
Medical Coding	3
Microbiology	1
Nursing	8
Nutrition	8
Physical Therapy	9
Physics	7
Student Skills	5
Veterans	3

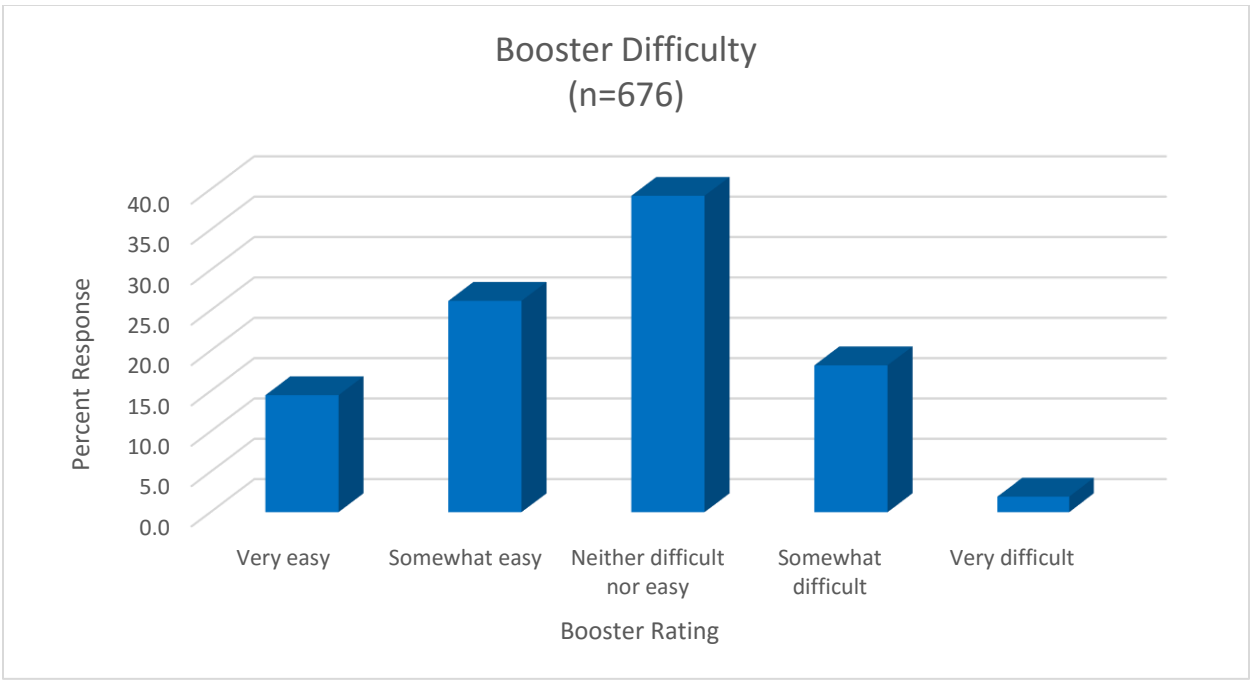
Boosters can be used in many ways. Some suggested uses include: homework assignments; review before starting a new topic in class; extra-credit assignments; at-home help for a student who is struggling in a particular area; projected onto a screen for a full-class activity; an at-home activity on a snow day; introduction to a new topic; or anything else you can imagine! Most boosters contain a pre-test and post-test which allow instructors to evaluate the student's knowledge both before and after exposure to the booster. It is recommended to make the post-tests be available to students so that they can take the test multiple times for practice purposes.

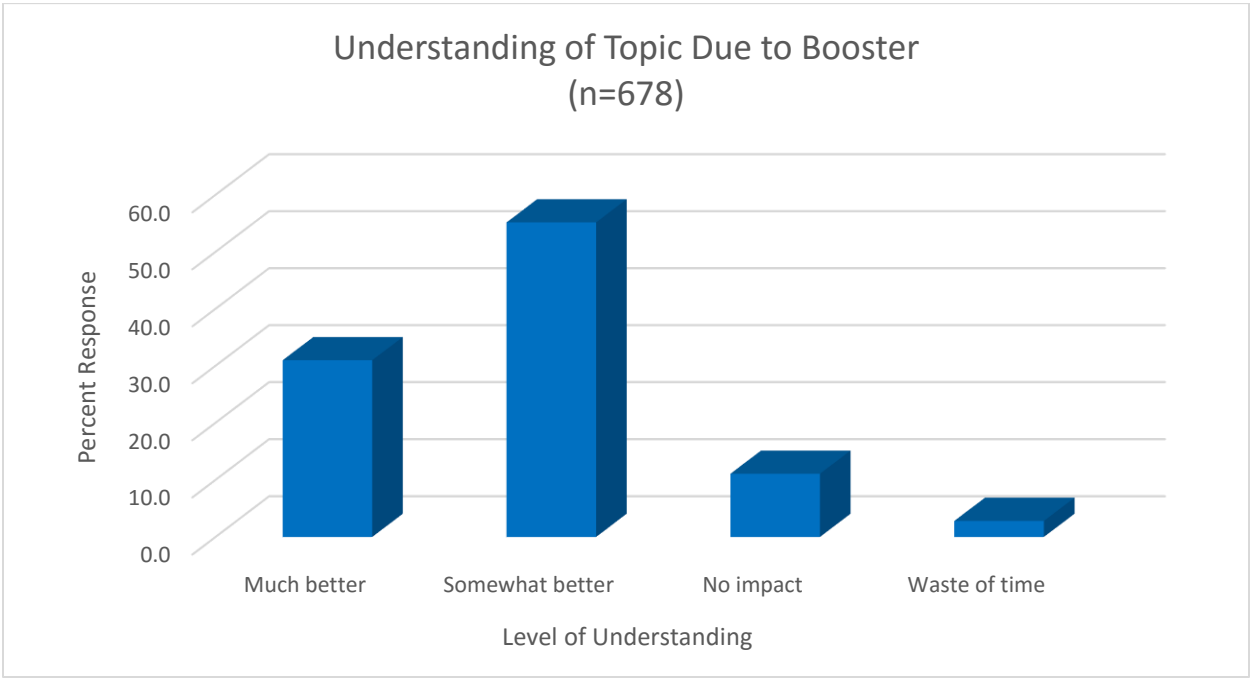
Examples of Boosters:
Capital CC: Solving Logarithmic Equations - www.skillscommons.org/handle/taaccct/7007
Gateway CC: Evaluation and Management Coding - Levels of Service - www.skillscommons.org/handle/taaccct/7174
Manchester CC: The Laws of Thermodynamics: Part 1 - www.skillscommons.org/handle/taaccct/7075

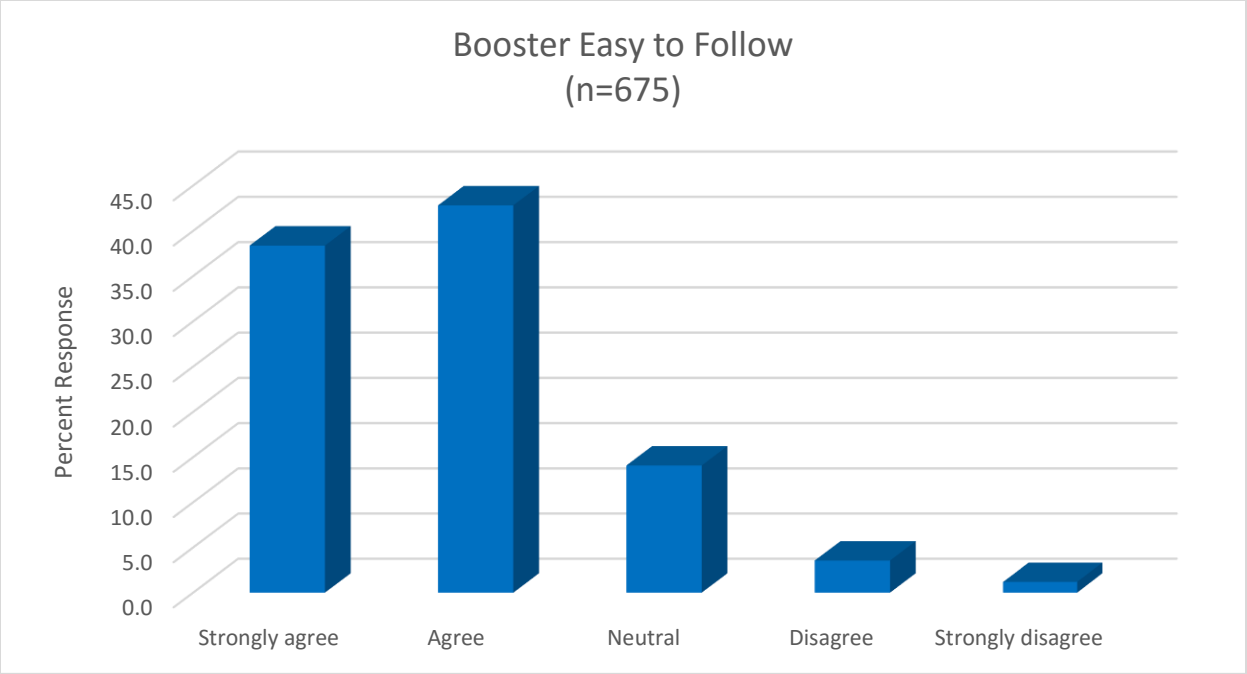
Middlesex CC: Skeletal System: Diseases and Disorders - www.skillscommons.org/handle/taaccct/7060
Norwalk CC: Posture and Body Mechanics Training for Allied Health Professionals, Part 1 - www.skillscommons.org/handle/taaccct/7115
Veterans: Training for Professors and Administrators on How to Include Veterans - www.skillscommons.org/handle/taaccct/7125

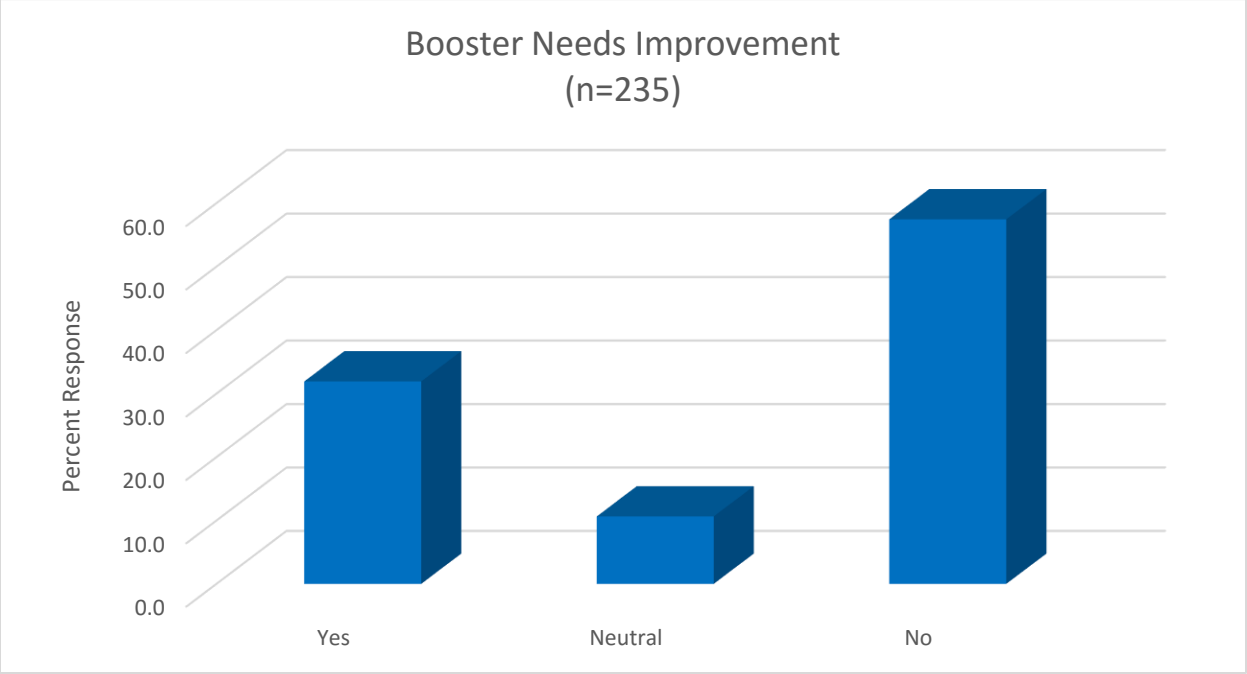
From Fall 2014 to Spring 2016, all first draft Boosters (those not yet revised / enhanced by MBL) contained a link to a voluntary Survey Monkey survey for students to complete when they finished the Booster module. The survey was developed by grant staff during a team meeting and contained 15 short questions. Among the five Consortium colleges, 685 students completed the survey. Responses to some of those questions are below.

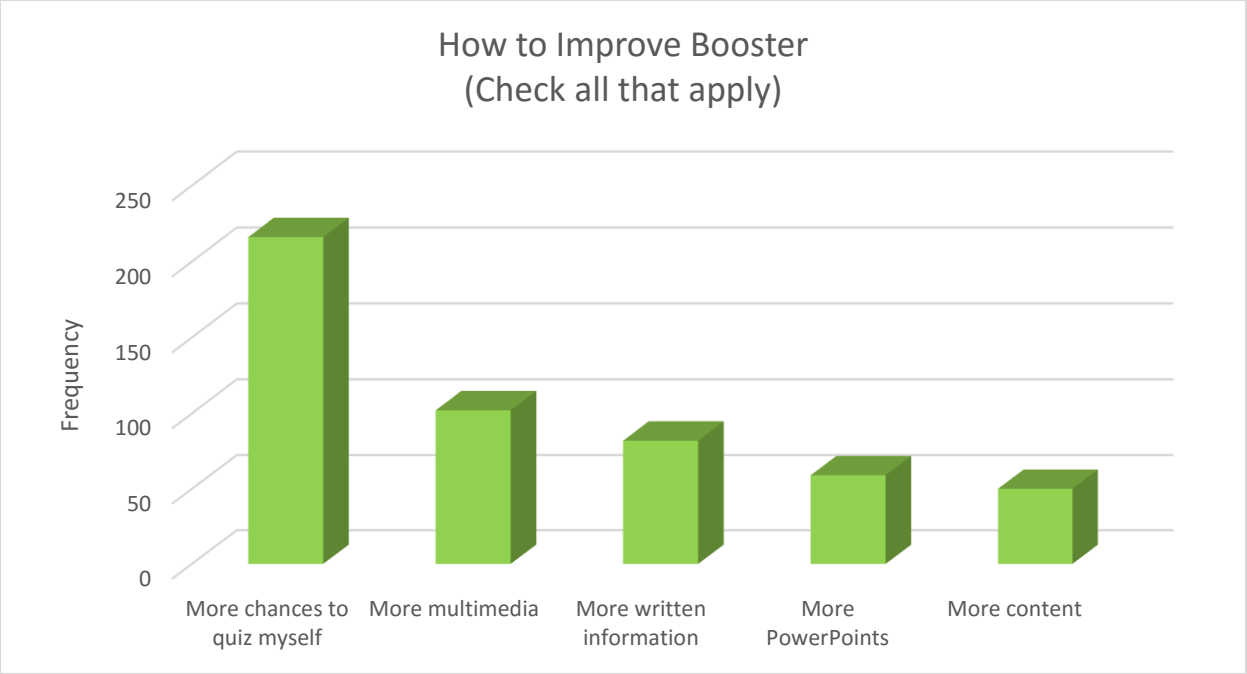


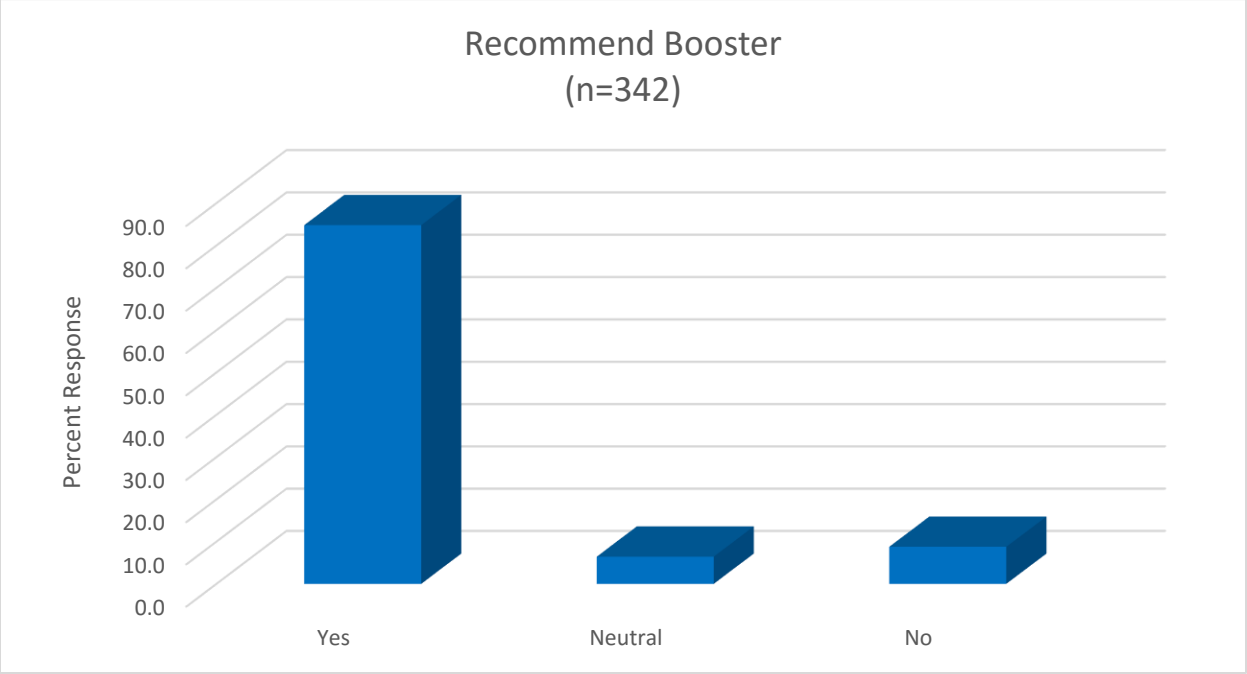

Booster Difficulty
(n=676)
Percent Response
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Very easy
Somewhat easy
Neither difficult nor easy
Somewhat difficult
Very difficult
Booster Rating

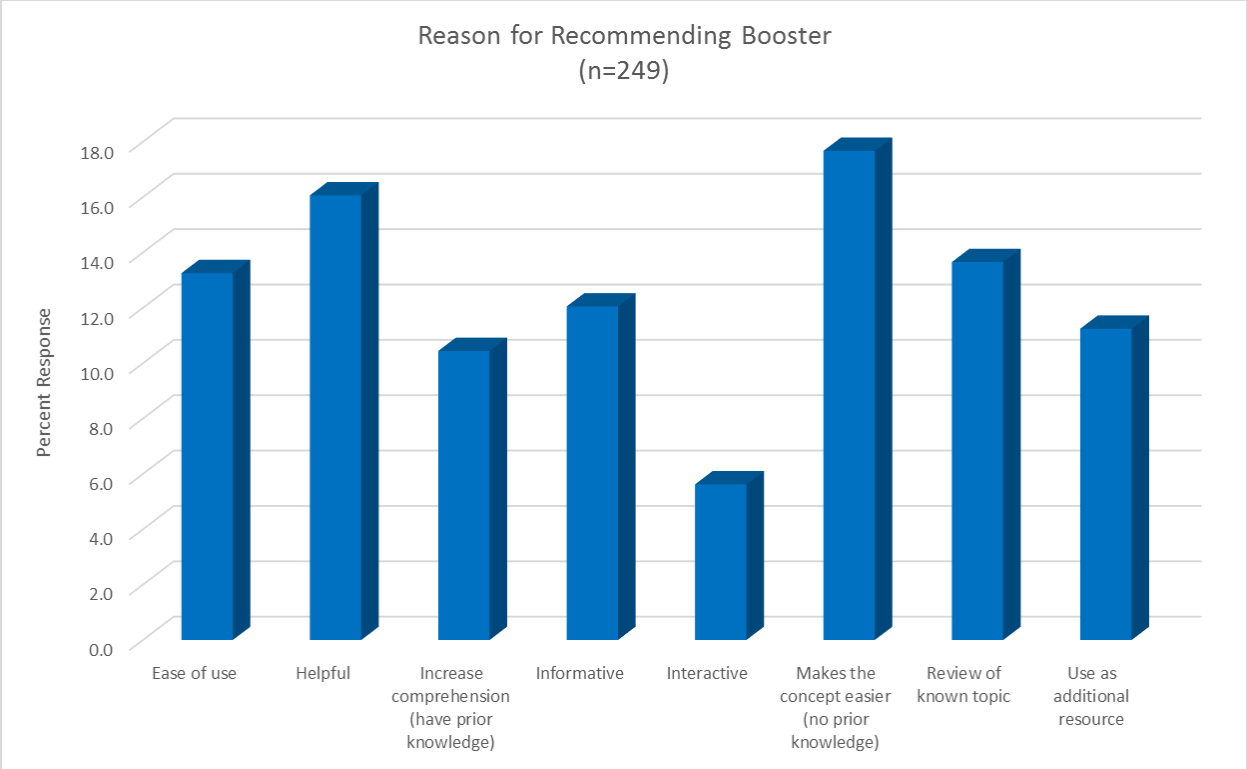

Understanding of Topic Due to Booster
(n=678)
Percent Response
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Much better
Somewhat better
No impact
Waste of time
Level of Understanding


Booster Easy to Follow
(n=675)
Percent Response
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Strongly agree
Agree
Neutral
Disagree
Strongly disagree


Booster Needs Improvement
(n=235)
Percent Response
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Yes
Neutral
No


How to Improve Booster
(Check all that apply)
Frequency
250
200
150
100
50
0
More chances to quiz myself
More multimedia
More written information
More PowerPoints
More content


Recommend Booster
(n=342)
Percent Response
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Yes
Neutral
No



Sustainability:

Although the boosters were created at one co-grantee community college, through the revision work of MBL, the refined and updated boosters were made available first to each of the co-grantee community colleges for pilot-testing. Then they were posted and made available to all community colleges within the Connecticut State Colleges and Universities (CSCU) system via the internal Blackboard managed by the Board of Regents. The SCORM packages are editable, as needed. Additionally, all boosters are publicly available through SkillsCommons under Grant Projects: Connecticut Health and Life Sciences Career Initiative -> Learning Resources Collection.

For Further Information:

MicroBurst Learning - www.microburstlearning.com; (803) 719-5073
SkillsCommons Accessibility Checkpoints - support.skillscommons.org/documentation/SkillsCommons-Accessibility-Checkpoints-Guide.pdf
Booster Development Process - www.skillscommons.org/handle/taaccct/7749
Booster Overview - www.skillscommons.org/handle/taaccct/7746
Booster Catalog - www.skillscommons.org/handle/taaccct/7715
Blackboard Booster Instructions - www.skillscommons.org/handle/taaccct/7611
AIM/CAST Compliance in Boosters - www.skillscommons.org/handle/taaccct/7610
Booster Technical Advisory Committee - www.skillscommons.org/handle/taaccct/7751

Capital Community College Develops Workforce-Needed Program in the Biosciences Field

The Challenge: Slow overall economic recovery in Connecticut means fewer employment opportunities for new graduates

Against the backdrop of a sluggish economy, foreign trade continues to chip away at traditional manufacturing jobs in Connecticut, and has now spread into other sectors such as finance and insurance. Connecticut ranks as the state with the fifth highest cost of living. Commensurate wages in many industries and occupations cause employers to leave Connecticut in search of lower-cost locales. In fact, the Connecticut workforce contains roughly the same number of non-farm employees in March 2012 as it did in March 1987. The 7.7% unemployment rate in March 2012 decreased from a high of 9.4% (December 2010), but remains at levels not seen since the 1970s. The partial recovery over the past 24 months has restored only 32% of the 117,500 jobs lost during the recession (March 2008 to February 2010).

The Solution: Developing Workforce-Needed Programs

Despite the current fair to poor employment trends in the United States overall, the prospects for employment in the biosciences sector looks bright for students who complete the Biotechnology program. The bioscience industry represents a strategic industry for Connecticut's economic future as evidenced by Governor Malloy's plan to revitalize the state's economy by expanding the life sciences cluster through significant public investments. On the national level, the US Department of Labor, Bureau of Statistics forecasts a 14% increase in biological technician jobs between 2010 and 2020. This is in line with the Connecticut Department of Labor projection of a 16.1% job increase in this sector. The need for additional graduates in the state of Connecticut is based on the current demand and supply dynamics for Biological Technicians in the area.

The associate degree in Biotechnology at Capital CC will prepare graduates for immediate employment in entry level jobs in the biotechnology industry. Graduates of the program will acquire hands-on skills in cutting-edge techniques, technologies, and equipment used for research involving molecular biology, DNA cloning, bioinformatics, next generation DNA sequencing, synthetic biology, recombinant protein expression, protein purification, and the generation of monoclonal antibodies. In addition, graduates will also acquire knowledge in laboratory procedures such as experimental design and trouble-shooting; participate in laboratory meetings by presenting relevant experimental findings; and document lab activities in a laboratory notebook. The transfer degree option will prepare students for enrollment into a Biotechnology baccalaureate degree program.

The Results:
With its commencement in Spring 2014, the biotechnology program at Capital CC has had increased student enrollment each semester. Additionally, the program has placed students in competitive internships, and graduates have found successful positions in the state.

Sustainability:
Due to the increasing interest in the Biotechnology program, Capital CC has fully funded the program with the hiring of a full-time Program Coordinator, allocating new laboratory space, and purchasing of advanced laboratory equipment.

For Further Information:
Capital CC - www.ccc.commnet.edu/hlsci
Capital CC Biotechnology Program Coordinator: Cleo E. Rolle, PhD; crolle@capitalcc.edu; (860) 906-5128
Capital CC Biotechnology program - www.ccc.commnet.edu/biotechnology.htm
SkillsCommons Learning Resources - www.skillscommons.org/handle/taaccct/8615
SkillsCommons Program Support Materials - www.skillscommons.org/handle/taaccct/7907; www.skillscommons.org/handle/taaccct/7906; www.skillscommons.org/handle/taaccct/7950

Gateway Community College Coordinates Industry-Driven Work Group to Develop New College Programs for CT HL-SCI

The Challenge: Completion of credentialed programs may not increase the likelihood of employment post-graduation for some students
The labor market and field of study are equally important factors to securing gainful employment post-graduation. Studies show that associate degrees in technical and career-oriented subjects yield higher employment and salary rates than those in the liberal arts and social sciences.

Students with industry-specific knowledge and work experience gained through internships set themselves apart from other job candidates. The already established connection between the student and employer increases the likelihood of post-graduation employment in contrast to students who do not possess this combination of qualifications and who may have difficulty finding employment even after the completion of a credential.

The Solution: Working With Industry Partners and Key Stakeholders to Develop Industry-Driven Curricula and Student Experiences
In order to ensure that new programs at Gateway CC were industry-driven, the college

established program planning teams to identify and assess all potential new certificate and associate degree programs. Program planning teams consisted of at least 51% employers to ensure that any new program would be supported by regional employers, who, in turn, would therefore be more likely to provide internships and jobs for students. These employers helped determine which new programs would be developed and provided ongoing review and feedback on curriculum development.

The Results:
Employer participants became so invested in the new programs that they appeared before the Board of Regents to urge approval and offered in-kind program support (e.g., supplies, training facilities, etc.) when their programs were up for consideration. Also, based on these program planning teams, four new, successful programs were developed and established at Gateway CC, with other potential programs being shelved due to employers' concerns over employability of the graduates. By not developing these programs, it saved the college time and the grant monies from pursuing a program that would not allow for graduates to find employment after completion.

Sustainability:
This model of industry-driven program planning team has been considered so successful that the college has adopted it for all new programs, as well as for major revisions of current programs.

For Further Information:
Gateway CC - www.gatewayct.edu/Programs-Courses/Health-and-Life-Sciences-Grant-Initiative
Gateway CC Curriculum Innovation Coordinator: Janet Hayes; jhayes@gatewayct.edu;
(203) 285-2431

Manchester Community College Upgrades and Shifts Hospital-Based Radiological Sciences Programs to College-Based Programs

The Challenge: Students completing hospital-based educational programs are ineligible for the national examination
The American Registry of Radiologic Technologists (ARRT) recently increased the education requirements for national certification and registration of radiation therapy professionals. As of January 1, 2015, ARRT requires all certification candidates to earn an academic degree at the associate's level or higher from an approved accredited institution in addition to the required completion of a professional education program (e.g., in Radiography, Radiation Therapy, or Nuclear Medicine Technology) in order to qualify for the organization's national exam. While

demonstrated competency in clinical procedures specified by AART for each field remain a critical aspect of this training, the additional academic requirements render hospital-based clinical programs on their own to be insufficient professional preparation in radiological sciences.

According to ARRT, the academic degree requirement benefits Registered Technologists by providing “a firm foundation to support the evolving role of the technologist and the lifelong learning necessitated by the increasing rate of technological change.” The analytical and communication skills acquired through general education courses enhance standards of patient care, increase professionalism, and support continued expertise in a dynamic field. Finally, as a requirement for Connecticut state licensure, ARRT certification and registration is a crucial component of all radiologic science training.

The Solution: Transforming Hospital-Based Education to Community College-Based Program
Manchester CC completed a major shift in Radiography and Radiation Therapy by upgrading and moving both programs from hospital-based programs to college-based programs. This transition required significant collaboration with employers and industry partners, including curriculum development, lab design, and other program details. The program also made use of "boosters," the new eLearning tutorials created through the grant, to provide students the opportunity to master skills with continuous access to course content and opportunities to test their knowledge. An additional outcome of these changes is now students in radiography and radiation therapy are eligible to take the national examination upon completion of their degrees, which is recognized as an industry credential and increases access to employment.

The Results:
Manchester CC began the Radiologic Science program in the Fall of 2014. Nineteen students were admitted to the program which has two tracks: Radiography and Radiation Therapy. These five-semester programs are designed to prepare individuals for employment as a Radiographer or a Radiation Therapist. The programs combine strong classroom preparation with the same excellent clinical training experience they offered when the programs were located at Hartford Hospital. These programs provide exciting career opportunities working in the Radiography or Radiation Therapy fields, which the U.S. Labor Department has projected to have a growth rate of over 20% through 2022. The first class will graduate in May 2016.

Sustainability:
Manchester CC has fully-funded a Program Coordinator and faculty to support these programs. In addition, all facility, equipment, and supply needs are also met by the college.

For Further Information:
Manchester CC - www.manchestercc.edu/hl-sci
Manchester CC Radiography Program Coordinator: Susan Morison, M. Ed., R.T. (R)(M); smorison@manchestercc.edu; (860) 512-2708
Manchester CC Radiography program - www.manchestercc.edu/academics/divisions/mathematics-science-and-health-careers/health-careers/radiography/
SkillsCommons Learning Resources - www.skillscommons.org/handle/taaccct/8487
SkillsCommons Program Support Materials - www.skillscommons.org/handle/taaccct/8319

Manchester CC Radiation Therapy Coordinator: Nora Uricchio, M.Ed., R.T. (R)(T); nuricchio@manchestercc.edu; (860) 512-2730
Manchester CC Radiation Therapy program – www.manchestercc.edu/academics/divisions/mathematics-science-and-health-careers/health-careers/radiation-therapy/
SkillsCommons Learning Resources - www.skillscommons.org/handle/taaccct/8486
SkillsCommons Program Support Materials - www.skillscommons.org/handle/taaccct/8318

Middlesex Community College Creates Predominantly-Online Health Information Management Certificate Program

The Challenge: TAA-eligible, underemployed, and incumbent worker students have work / life issues which create difficulties with attending and completing traditional daytime programs

TAA-eligible workers face multiple barriers to retraining and future employment, including: a) uncertainty or lack of awareness about how to navigate education and training systems; b) jobs-skills mismatches, particularly in occupations requiring industry credentials, increased technology integration, and/or increased computer literacy; c) limited math skills needed to advance along career pathways; d) apprehension about changing career paths; and e) concerns about personal and family finances. They need education and training programs that: 1) take into account their work experience and apply it toward certificate and/or degree completion; 2) provide occupational options related to the industries and occupations of their previous employment; 3) offer flexibility to balance training / education with other responsibilities; and 4) reinforce areas where skills gaps exist.

The Solution: Online/Hybrid Courses

A meta-analysis which examined evidence from a series of studies regarding online learning found that on average, students in online learning conditions performed modestly better than

those receiving face-to-face instruction. Online learning has become an established fact of higher education; the CT HL-SCI took advantage of this proven delivery method to make courses more accessible to students juggling many responsibilities.

The Health Information Management (HIM) Certificate at Middlesex CC was developed to meet the needs of students who are seeking to acquire a core set of skills that will enable them to transition to the field of HIM and who are not interested in pursuing an associate degree. Students may already have degrees in other disciplines and therefore are not looking to gain that level of training. Instead, they simply want to have credentials that will validate for a prospective employer that they possess the requisite skills in HIM sufficient to enter the field at an entry level. Having a certificate option offers students a choice and thus allows them to choose the path that best meets their career and educational goals.

An additional aspect of the certificate program is the increased ability of students to take the majority of the courses online or in a hybrid format that allows for fewer in-person meetings on campus.

CT HL-SCI partnered with Microburst Learning (MBL) to perform a third-party review of online, hybrid, and flipped courses created as part of the CT HL-SCI initiative in order to ensure the deployment of at least 450 modules which contain self-assessments in those courses, as well as review the courses for best practices.

MBL developed a customized Standards Review Guide that was used to review courses for best practices in online learning; ADA/CAST compliance; whether the course contained publisher content; the number of modules in each course; and the number of self-assessments in each course. Some standards covered in the rubric were: clear table of contents; clearly written instructions; videos contain closed captioning; content is in short, manageable segments, and easy for learner to access; assessments promote critical thinking; clear and consistent navigation; attachments and hyperlinks work and are accessible; copyrighted items are annotated; and content is clear and understandable.

MBL reviewers used this custom rubric to review each course on the aforementioned standards and noted any recommendations and suggestions in the rubric. Content that was developed by the professor and not by a publisher was also reviewed for spelling, grammar and formatting, and appropriate changes were suggested.

The Results:

The HIM certificate program was developed with eight fully-online courses and one hybrid

course.

In addition, Consortium colleges developed 71 new online/hybrid courses. Hybrid courses are a combination of online and in-class instruction. There is no specific percentage set for the amount of instruction in a hybrid course, but some percentage of instructional time that normally would have taken place inside the classroom must be replaced with work that takes place online. Online learning may include both synchronous and asynchronous communication.

MBL provided a third-party review of the 71 courses developed to ensure that the courses reflected best practices for online learning, ADA/CAST compliance, and included a total of at least 450 modules with self-assessments across all courses.

Using the Standards Review Guide, MBL reviewed 71 online, hybrid, or flipped courses. MBL determined that there are a total of approximately 8,837 embedded self-assessments in the 71 online/hybrid courses that were reviewed. These 71 online/hybrid courses contain 970 modules, 789 of which contain at least one self-assessment.

Online/hybrid courses developed covered the following subject areas: Anatomy, Biology, Business Office Technology, Chemistry, Environmental Science, Exercise Science, Health Information Management, Math, Nursing, Ophthalmic Medical Assistant, Physical Therapist Assistant, Physics, Post-Radiologic Technology, Radiography, Science, and Sonography.

Sustainability:
Because the HIM Certificate courses already existed as part of a degree program, no new courses or laboratories were required to implement the HIM Certificate at Middlesex CC. Additionally, with the rising demand of credentialed and trained HIM applicants, there has been a steady increase in student interest and enrollment throughout the grant period.

For Further Information:
MicroBurst Learning: 803-719-5073; www.microburstlearning.com
CT HL-SCI Online / Hybrid Course Review - www.skillscommons.org/handle/taaccct/8164

Middlesex CC - mxcc.edu/hlsci
Middlesex CC HIM Certificate Program Coordinator: Donna Hylton; dhylton@mxcc.edu; (860) 343-5774
Middlesex CC HIM Certificate program - mxcc.edu/catalog/certificate-programs/him
SkillsCommons Learning Resources - www.skillscommons.org/handle/taaccct/8588

Norwalk Community College Develops Stackable Group Exercise Instructor Certificate Program

The Challenge: TAA-eligible, underemployed, and incumbent worker students have work / life issues which create difficulties with attending and completing an associate / bachelor's degree program

The typical 51- year- old TAA-participant (as well as other dislocated workers and veterans) maintains family responsibilities and faces significant financial and time constraints that can hinder their academic success. For example, retention rates differ for full-time (72%) and part-time (59%) community college students, as do persistence rates (full-time 51% vs. part-time 40%). Part-time students need greater supports and flexibility to help them persist in school, make efficient use of their time (and academic credits), and accelerate their progress to completion. TAA-eligible workers can receive financial supports (i.e., Trade Readjustment Allowances) and funds for training, but they must quickly take advantage of these resources due to time restrictions on federal support that make it challenging to complete programs and find gainful employment before benefits run out.

Students who plan to study in a field of concentration with a goal of earning an industry-recognized credential are more likely to complete their degrees and go on to further studies. A study of first-time students at Washington State University found that students who entered college with a concentration (coherent courses grouped for certificate or degree requirements) had higher rates of certificate and degree completion than students with no concentration. Two-thirds of students in this study who indicated their intent to earn an academic degree or career technical credential entered a concentration. This study also found that students with defined concentrations who completed certificates and degrees were able to successfully stack their credentials and continue their education in pursuit of more advanced degrees.

The Solution: Stackable Credentials that Enable Students of All Ages to Acquire Shorter Term Credentials with Clear Labor Market Value as They Continue to Build on These to Access More Advanced Jobs and Higher Wages

Creating a matrix of stacked and latticed credentials represents a core element of CT HL-SCI Curriculum Innovation. The CT HL-SCI, in consultation with industry associations and leading regional employers, created stacked and latticed credentials by: 1) revising 44 existing educational programs to ensure they provide the competencies to meet existing occupational certifications; 2) creating new industry-recognized certificate and associate degree programs built from competency-focused curricula; and 3) building progressions of these educational programs to make efficient uses of credits such that coursework satisfies specific credential requirements that lead to defined career paths (stacked) and provides a sufficiently broad learning base to enable students to shift concentrations and apply their credits toward

revised educational goals (latticed).

Local employers in the Norwalk area expressed interest in a quality program to prepare entry-level group exercise instructors or to provide retraining options for current instructors employed at their facilities. These inquiries are consistent with a workforce need that is apparent in the Health-Fitness Industry, and approximately 20% of Exercise Science Program students at Norwalk CC expressed interest in the Group Exercise Instructor Certificate when asked about it during Spring 2013 academic advisement.

The Group Exercise Instructor Certificate Program at Norwalk CC provides excellent academics to a culturally diverse population of students, while building strong community partnerships with potential internship and employment sites. This certificate program not only meets the workforce demands of the geographic area that the college services, but it also provides a nourishing, yet challenging, learning environment for students that will lead to employment and life-long learning. This certificate program is closely associated with the Exercise Science Degree Program at Norwalk CC. The only courses unique to the Group Exercise Instructor Certificate are HPE 112 Group Exercise Instruction I and HPE 213 Group Exercise Instruction II. This shorter term credential allows those students interested in pursuing careers as a health-fitness professional to enter the workforce earlier as a group exercise instructor and then continue their studies to the A.S. in Exercise Science. Additionally, students may also transfer into a B.S. in Exercise Science program.

The Results:
Due to the stackable nature of the credentials, only two new courses were created for the Group Exercise Instructor Certificate: HPE 112 Group Exercise Instruction I and HPE 213 Group Exercise Instruction II. The other four core courses were already established coursework within the A.S. in Exercise Science program.

While pursuing their education, students can enter the workforce earlier with the Group Exercise Instructor Certificate and continue their studies while being gainfully employed.

Sustainability:
The Norwalk Community College Foundation has committed to fully fund the Program Coordinator for the Group Exercise Instructor Certificate program until June 2019. Facility, equipment, and supply needs will be met by the college.

For Further Information:
Norwalk CC - norwalk.edu/hl-sci/

Norwalk CC Group Exercise Instructor Certificate Program Coordinator: Nicole Hafner; nhafner@norwalk.edu; (203) 857-7330
Norwalk CC Group Exercise Instructor Certificate program - norwalk.edu/dept/healthwellnesscenter/GEI_Cert.asp
SkillsCommons Learning Resources - www.skillscommons.org/handle/taaccct/8547
SkillsCommons Program Support Materials - www.skillscommons.org/handle/taaccct/7868; www.skillscommons.org/handle/taaccct/7869; www.skillscommons.org/handle/taaccct/7880

Eastern Connecticut State University Drives Articulation Agreement Creation with CT HL-SCI Colleges

The Challenge: Connecticut is currently lacking an existing, integrated system for community college students to seamlessly transfer their degrees to Connecticut State Universities and Charter Oak State College without either losing or generating excess credits

Since the 1970s, Connecticut community colleges (then known as the Community-Technical College System) and the Connecticut State University System have had articulation agreements guaranteeing admission of transfer students from community colleges into state universities. In 1996, the State University System clarified and expanded the guaranteed admission agreement to include all students completing an associate degree, not just those enrolled initially in programs designed for transfer after two years of study. In June 2011, Connecticut consolidated the community college system, the state public university system, and the state online college under a single Connecticut Board of Regents for Higher Education. The resulting Connecticut State Colleges and Universities (CSCU) consists of 12 community colleges, four state universities, and one state online college, united under a single administrative body. This shift is designed to lead to system-wide improvements in transferability and articulation.

However, to date, the Board of Regents is still revising the college-level articulation agreement that will guide all transfers among CSCU institutions. Current work among CSCU institutions centers on aligning general education requirements across institutions, although many of the majors have also been aligning their degree programs. Students will reap the benefits of this agreement because the credits they earn at Connecticut community colleges in their areas of concentration are applied toward requirements of a "major" at the bachelor's level. When programs are not aligned, it extends the time for completion of a bachelor's degree.

The Solution: Creation of New Articulation Agreements between CT HL-SCI Programs and ECSU

In order to promote efficient and transparent transfer programs, Eastern Connecticut State

University (ECSU) developed new articulation agreements with CT HL-SCI programs at all five of the Consortium colleges. The process involved several steps—from general research on transfer courses to dissemination of the final agreements.

The first step in developing the agreements was to research program requirements and evaluate all of the course-level equivalencies for all 68 of the new and revised programs under the grant. Second, ECSU faculty evaluated new and revised courses at the community colleges that might have transfer equivalents at ECSU in order to update directories and ensure that students who transferred would not need to duplicate courses. Grant staff then met with program coordinators at the community colleges to assess student need for more advanced degrees and to determine which programs would benefit most from formalized articulation agreements. From there, draft agreements were reviewed and discussed by curriculum innovators, program coordinators, department chairs, deans, academic advisors, admissions staff, and faculty across the schools.

The resulting agreements outline pathways for students at the community colleges to maximize their transferable credits into ECSU's degrees in Biology; three tracks in Environmental Earth Sciences; three concentrations in Health Sciences; and a newly-developed major concentration in Health Care Administration for ECSU's flexible Bachelor of General Studies (BGS) program. The articulated programs at the community colleges range from more traditional transfer programs like the Environmental Science Advisory Track at Norwalk Community College to clinical programs like Radiation Therapy and Surgical Technology at Manchester Community College.

In addition to formalizing the transfer of credits for each program, the articulation agreements provide guidance for students to plan ahead for a smooth transfer experience and efficient course planning. Students can utilize electives to fulfill requirements at both schools and select the courses within their majors that most suit their educational and professional goals. By facilitating students' abilities to build on their associate's level studies to earn a bachelor's degree, the agreements further provide student access to additional research experience, deepened disciplinary training, and expanded employment opportunities.

The Results:
ECSU developed 24 new articulation agreements with programs at all five of the consortium community colleges. These agreements provide pathways for 33 programs and concentrations.

The process of developing new articulation agreements also prompted the consortium schools to catalogue other relevant, current articulation agreements between CT HL-SCI programs and

other institutions. The consortium identified 44 agreements with other area colleges and universities, including the three additional Connecticut State Universities, Quinnipiac University, Sacred Heart University, and the University of New Haven.

Sustainability:
The articulation agreements will remain in place between the schools, without any requirement for additional funding. Additionally, CSCU has begun a system-wide Transfer and Articulation program that is designed to replace individual articulation agreements for institutions under the umbrella of CSCU, to provide easy transfer for students within the system with no loss of credits. This will provide additional certainty to CSCU students.

Supplemental Advising Guides were also created for each of the articulation agreements and shared with the academic deans, department heads, program coordinators, and academic advising staff at the schools. The guides provide a succinct, one- or two-page summary of the key information that an academic advisor or program coordinator would need to help guide a student from the community college to the bachelor's program. They also offer brief sample language to use in academic catalogs and/or on school websites to help inform and prepare potential transfer students. The Advising Guides are intended to make the agreements easy to understand and to serve as a quick reference for planning courses of study with students.

For Further Information:
Eastern Connecticut State University - www.easternct.edu/healthlifescience/
Eastern CSU Special Assistant to the Provost: Polly Silva; silvap@easternct.edu; (860) 465-0655
Copies of the advising guides can be found on ECSU's website:
www.easternct.edu/healthlifescience/advising-guides/
SkillsCommons Program Support Materials - www.skillscommons.org/handle/taaccct/8553

Prior Learning Assessments and Connecticut Credit Assessment Program: Promising Practices for CT HL-SCI Strategy 2

Significant gaps at community colleges exist in the infrastructure and capacity to deliver training and education to TAA workers in swiftly changing industries. Areas for further improvement include: 1) links among employers, the public workforce system, and community colleges; 2) flexibility for students to receive credits for learning outside the classroom and to take classes on a schedule that allows them to balance school with other responsibilities; 3) education to employment pathways for all occupational programs; 4) embedded remedial education that enables students to take college courses as quickly as possible; and 5) feedback mechanisms to enable colleges to adapt courses and curricula to changing educational and employment needs.

As part of Strategy 2, Prior Learning Assessments (PLAs) offer college credits for work, military, and other types of experience that provide competencies equivalent to those earned in college courses. CT HL-SCI sees PLAs as a jump start for students, increasing their completion rates and accelerating option. CT HL-SCI elevates PLAs as a strategy to assist TAA workers and other candidates for Consortium colleges by: 1) centralizing PLA protocols and standards for all CT HL-SCI Consortium members (and eventually all CSCU institutions) using Charter Oak SC as the lead agency; 2) reinforcing the One Stop Career Centers and Veterans' Centers as orientation portals for PLAs through the use of videos and workshops; 3) expanding the Connecticut Credit Assessment Program (CCAP) to recognize credits earned in other institutions and settings; and 4) promoting PLAs in health and life science workplaces, particularly to lower-skilled worker candidates for CT HL-SCI Consortium certificates and degrees. CT HL-SCI expands the application of PLAs to serve 675 students at the CT HL-SCI community colleges, awarding 10,000+ credits during the grant period.

Charter Oak State College Prepares Marketing Campaign for Prior Learning Assessments (PLAs)

The Challenge: While CT HL-SCI Consortium Colleges have refined and expanded their PLA process, advertising of PLAs and their availability differ from college to college

CT HL-SCI Consortium colleges already make use of PLAs and have seen changes in recent years in the volume and kinds of assessments most often used. Charter Oak State College, the CT HL-SCI Consortium leader in PLA reviews and credits, reports colleges are awarding fewer credits overall but in particular for portfolio assessments, while credits based upon military training and testing, such as College Level Examination Program (CLEP), remain relatively strong.

At the heart of Charter Oak State College's mission is the recognition that adults learn in a variety of ways and that not all college level learning occurs in traditional classroom settings. Through prior learning assessment, Charter Oak State College is committed to working with adults to evaluate their learning and award credit for that learning where it is warranted.

However, due to differences infrastructure and staffing abilities at the Consortium colleges, PLA marketing differs from college to college.

The Solution: Creation of Presentations and Videos for Colleges to Use to Promote PLAs
An additional goal of the CT HL-SCI project is to raise awareness of prior learning assessment throughout the region. To accomplish this, Charter Oak State College led meetings and workshops with faculty, administrators, and students at the Consortium schools; led training sessions for employment counselors at American Job Centers; attended college fairs and veterans events; and developed outreach materials including a website, brochures, and short videos.

Charter Oak State College partnered with Six One Seven Studios to create a series of videos that provide a basic introduction to prior learning assessment and the options available for receiving credit. Filming included a diverse set of locations including employer-based training programs, non-profit training programs, and vibrant scenes of community college life.

The Results:
Through the careful use of expert interviews, heartfelt testimonials from students and alumni, and compelling images, the videos build understanding and awareness of the benefits of prior learning assessment. Different videos for different populations, targeting the special needs of veterans and counselors working with the underemployed/unemployed, are also included in the project.

Charter Oak State College produced seven videos for marketing PLAs:

- Empowerment through Prior Learning Assessment - https://vimeo.com/groups/327491/videos/137964590
- Got Credentials: How to Receive College Credit for Non-Credit Training - https://vimeo.com/groups/327491/videos/137964592
- Prior Learning Assessment: Earn College Credit for What You Know - https://vimeo.com/groups/327491/videos/137964591
- Proving What You Know by Developing a Prior Learning Portfolio - https://vimeo.com/groups/327491/videos/137961224

- Using Standardized Tests to Accelerate Your Way to a Degree - https://vimeo.com/groups/327491/videos/137964594
- Veterans: From Serving Your Country to Serving Your Community - https://vimeo.com/groups/327491/videos/137964589
- Veterans: How To Receive College Credit for your Military Training - https://vimeo.com/groups/327491/videos/137964593

Sustainability:
Because each individual Consortium college enhanced their existing PLA systems according to their own needs and resources, those changes driven by the CT HL-SCI grant and Charter Oak will be able to be maintained at the colleges, as well continue to be enhanced as the need arises. Additionally, the videos created by Charter Oak are publicly available for all colleges to use at their discretion.

For Further Information:
Charter Oak State College - www.charteroak.edu/ct-health-life-sciences-career-initiative
Charter Oak State College Prior Learning Assessment Office: PLA@CharterOak.edu;
(860) 515-3866
Charter Oak SC Prior Learning - www.charteroak.edu/prior-learning-assessment/index.cfm
SkillsCommons Program Support Materials - www.skillscommons.org/handle/taaccct/8568

Norwalk Community College Improves Prior Learning Assessment Process for All Students

The Challenge: TAA-eligible students have a low completion rate for their programs due to outside personal issues; however, they have skills / knowledge and life experiences the traditional student does not have prior to starting college

Infrastructure and institutional level gaps make it difficult for TAA participants, dislocated workers, and veterans to re-enter the workforce. TAA participants must navigate fragmented systems at a time of high personal vulnerability and stress. The “front-end” impact of this system reduces the number of TAA-eligible workers in training – the State TAA Coordinator indicates that of 3,625 persons active in the TAA program in 2010 and 2011, only 2,589 were enrolled in a training program. Once enrolled in a qualified education and training program, TAA participants face additional challenges that may reduce their rates of completion. The Congressional Research Services reported that 70% of TAA workers complete their programs. If 70% of the 2,589 Connecticut TAA training enrollees completed their programs, then only 1,812 (or 50%) of all 2010 and 2011 TAA participants would finish, with a lower percentage securing jobs.

The Solution: Streamlining Process for Students to Receive Credits through the Prior Learning Assessment Program

The use of Prior Learning Assessments (PLAs) represents another strong evidence-based strategy to accelerate the progress of low-skilled workers, improve retention and achievement rates, and reduce time to completion. A Council for Adult and Experiential Learning (CAEL) study which included 62,475 students at 48 universities and colleges found that adult students with PLAs have higher graduation rates, stronger persistence in their studies, and complete their degrees more rapidly than students without PLAs. As the average TAA participant in Connecticut is 51 years old, these outcomes are particularly relevant. PLAs, used nationwide at community colleges, are also well suited for the Connecticut TAA worker population given that 31% of the TAA participants for 2010 and 2011 self-report to have some prior post-secondary experience that did not result in a formal degree. PLAs will improve retention and graduation rates by reducing the time to obtain credentials, and in turn, reduce the cost to attend school.

Credit for Life Experience (CLE) is just one of the ways that Norwalk CC assesses prior learning. Although they are still working on additional ways to assess prior learning and advertise the available process (i.e., CLEP, Departmental tests, etc.), the CLE process has seen the most change during the duration of the CT HL-SCI project.

Prior to CT HL-SCI, Norwalk CC had a cumbersome process for students to submit portfolios to a committee for consideration for Credit for Life Experience. This process has since been changed to be more user-friendly. The original process included a one to three week wait time to speak with an advisor who would explain the process, then the student had to submit a handwritten application which was then preliminarily reviewed and given back to the student to submit to the department chair who would sign off. Then the application was resubmitted to the same advisor who would then duplicate the application (sometimes 30+pages) and distribute to committee members for review and approval during a committee meeting.

The Results:

After meeting with the Director of Prior Learning at Charter Oak State College, Norwalk CC then mainstreamed the process and increased the marketing for PLAs. They provided an online, fillable PDF application with clear instructions. There was no wait time other than one to two days to speak with an advisor if they had questions regarding the process. Students were advised to go to the Department Chair prior to submitting it to the committee for review. The student could submit the application electronically if they wanted. Then the application was made available to the committee through email for immediate review and approval. This process has allowed Norwalk CC to review Credit for Life Experience on an as-needed basis.

Sustainability:
Because Norwalk CC enhanced its existing PLA system according to its own needs and resources, those changes will be able to be maintained at the college, as well continued to be enhanced as the need arises.

For Further Information:
Norwalk CC - norwalk.edu/hl-sci/
Norwalk CC Credit for Life Coordinator: Kristina Testa-Buzzee; ktesta-buzzee@norwalk.edu; (203) 857-7220
Norwalk CC Credit for Life Office - norwalk.edu/hl-sci/earn%20college%20credits.asp; norwalk.edu/fesp/Prior%20Learning%20Assessment.asp
SkillsCommons Program Support Materials - www.skillscommons.org/handle/taaccct/7874; www.skillscommons.org/handle/taaccct/8592

Charter Oak State College Conducts Credit Reviews of Training Programs and Credentials / Capital CC uses CCAP Review to Offer Free Credit for C.N.A. Students

The Challenge: Not all college-level learning occurs in a traditional classroom, with many employers offering formal training programs as part of their benefits to employees
Formal training programs – which can include classroom courses, online courses, computer-assisted instruction, interactive video, programmed instruction, and exams for professional certification – may be offered by various employers. Some training programs meet very high standards and are equivalent to credit-level learning acquired at regionally accredited colleges. These types of officially sponsored training programs are eligible for evaluation by the Connecticut Credit Assessment Program (CCAP). Reviews of training program(s), conducted by subject matter experts from Charter Oak State College faculty, can be conducted to approve an employer-sponsored training program for college credit.

The Solution: Reviewing Non-Traditional (Non-Credit Bearing) Programs as Part of the CCAP
As part of CT HL-SCI, Charter Oak State College has been working to increase the opportunities for students to receive credit for non-credit programs offered throughout the state.

Charter Oak administers CCAP, a rigorous evaluation process that includes curriculum review and an on-site visit by faculty subject matter experts. If the faculty team determines that what is being taught in the non-credit program equates to what would be taught in a traditional college classroom, then a credit recommendation is made. Each provider must complete an extensive application and submit to the review process. Thereby, Charter Oak improved their practice of helping students earn credit for what they already know.

The Results:
CT HL-SCI had a goal of 36 credit reviews conducted for 324 credits recognized. To date, Charter Oak completed 57 reviews for 719 credits recognized.

Additionally, the non-credit program provider that has most benefitted from CT HL-SCI is the Connecticut State Technical High School System (CTHSS). CTHSS offers extensive non-credit career training programs to adults. Five CCAP reviews have been conducted on CTHSS programs and 61 credits have been recognized. Since most reviews are valid for a ten-year period (five years retroactive and five years into the future), that means approximately 660 students are now eligible to receive college credit for completion of a CTHSS adult training program.

In an example of how colleges can use the CCAP process for the benefit of its students, Capital CC allows students in the Certified Nurse Aide (C.N.A.) non-credit certificate program to receive three credits for SOC 216 Health & Aging, at no cost, if they enroll in a credit program. The student must simply present their C.N.A. certificate and a completed transfer form to present it to the admissions office to get the credit for SOC 216 on their college transcript. This new credit option is as a result of Capital CC's C.N.A. program receiving four credits through the CCAP process conducted by Charter Oak State College.

Sustainability:
CCAP is an ongoing program at Charter Oak State College that conducts credit reviews of training programs and credentials, making credits available to successful completers. For example, credits are available for the Nurse Aide Certification course (4 credits, lower division level) (Certified Nursing Aide program at Capital Community College) and are valid from May 2009 through May 2019.

For Further Information:
Charter Oak State College - www.charteroak.edu/ct-health-life-sciences-career-initiative
Charter Oak State College Connecticut Credit Assessment Program Office: Linda Wilder; lwilder@CharterOak.edu; (860) 515-3862
Charter Oak SC CCAP - www.charteroak.edu/prior-learning-assessment/ccap/index.cfm
SkillsCommons Program Support Materials - www.skillscommons.org/handle/taaccct/8568; www.skillscommons.org/handle/taaccct/8569

Capital CC - www.ccc.commnet.edu/hlsci
Capital CC C.N.A. Program Coordinator: Ruth Krems; rkrems@capitalcc.edu; (860) 906-5142

Capital CC Continuing Education Office - www.ccc.commnet.edu/cehome.htm; www.capitalcc.edu/docs/continuing-education/CE-Course-Catalog-Summer-2016(5-11-2016).pdf

SkillsCommons Learning Resources - www.skillscommons.org/handle/taaccct/8451

Enhanced Internships & Placement Services: Promising Practices for CT HL-SCI Strategy 3

Regional employers prefer graduates with workplace experience when making hiring decisions. A survey organized as part of a study by Rutgers University asked students about how well college prepared them for careers. Students who had participated in internships reported that college had prepared them for a job at much higher rates than students who did not take advantage of internships. In the same survey, students who participated in internships self-reported much higher level of competencies such as verbal and written communication. A different survey, conducted by the National Association of Colleges and Employers, showed that students who held internships during college received more job offers and higher starting salaries than students who had no internships. Moreover, the survey indicated that students who completed more than one internship received even more job offers.

CT HL-SCI developed relationships with employers through the Project Advisory Board, the Advisory Board for individual programs, and other forums. Employer partners and industry associations provided the following critical assistance:

1. Communicate workforce needs to inform CT HL-SCI curriculum innovation efforts, through participation on the CT HL-SCI Advisory Board, Curriculum Innovation Workgroup, and informal communication;
2. Identify internships and placement strategies and protocols for CT HL-SCI Consortium members;
3. Create internships for qualified CT HL-SCI participants;
4. Hire qualified participants who complete CT HL-SCI education and training programs; and
5. Provide resources to support education and training activities.

In addition, the Recruitment & Placement Workgroup (a 15 member grant staff team – with one Recruitment & Placement Coordinator from each of the five Consortium colleges, one Recruitment and Placement Coordinator based at each of the five partner WIBs, and a part-time Veterans' Associate based at each community college) provided the following assistance on behalf of students: 1) coordinate recruitment strategies to bring TAA workers, veterans, and other unemployed and under-employed workers from across the state into the community college system through One Stop Centers, Veterans' Centers, and other portals; 2) build relationships with employers to place students into internships; and 3) organize employment placements to secure jobs for CT HL-SCI program completers. This staffing and oversight structure provides critical links between the community colleges and public workforce system.

Connecticut Women's Education and Legal Fund (CWEALF) Contributes to Workforce Development at all CT HL-SCI Community Colleges

The Challenge: Due to workload issues, Program Directors / Coordinators are not able to create, manage, or expand industry partnerships or relationships for the betterment of their programs and students

With the shortage of resources and budgetary constraints, the responsibilities of Program Directors / Coordinators have increased significantly leaving little time for cultivating industry relationships to create partnerships for internship or employment opportunities for students. The process of identifying new internship and placement sites and securing agreements with employers requires a significant amount of time and resources to complete.

The Solution: Partnering with Community-Based Organization that Focuses on Employment to Assist Colleges

Connecticut Women's Education and Legal Fund (CWEALF) was contracted to assist with establishing program-based internships/job opportunities for all Consortium colleges for the purpose of securing and setting up internship contract agreements with employers. CWEALF's scope of work also included: assess internship and placement opportunities in place for new and revised CT HL-SCI programs and identifying gaps in such opportunities; leverage relationships with health and life science employers to identify new internship and placement opportunities; develop a plan for outreach to employers; oversee and monitor progress of plan implementation; and provide a representative to the CT HL-SCI Recruitment & Placement Work Group.

The Results:

Here are examples of some of the work and activities that CWEALF completed at each college:

Capital CC – Career Certification Resource

After holding a meeting at Capital CC, which included CT HL-SCI program coordinators, grant staff, career services representatives, and veteran's affairs associates, CWEALF developed a Career Certification Resource for the college. This document listed each of the CT HL-SCI programs with the respective major area employers, populations that would be interested in the career, and the needs of the programs.

Gateway CC – Employer Event

A CWEALF employer event at Gateway CC focused on one employer, Billings Forge Community Works (BFCW) in Hartford Connecticut. BFCW is a community-based organization that encourages community participation and empowerment in the Frog Hollow neighborhood in

Hartford. One of the ways they accomplish their goal is through promoting access to healthy food.

Jennifer Perez Caraballo, the Farmer's Market Outreach Coordinator for Billings Forge Community Works, provided another career option to Dr. Marcia Doran's Nutrition and Dietetics class. Her message focused on community organizing as a means of ensuring that residents have access to information concerning healthy eating, access to fresh foods, and the importance of communication within local neighborhoods. Her most significant message to students didn't involve a discussion of calories and nutrients, but rather stressed the need to listen to what their clients have to say about their diets, what foods are important to them, and how to incorporate healthy foods into their diets. The importance of recognizing local communities and how organizations communicate with local residents – meeting people where they are and most important, simply talking with them – is an important component of success.

The class had many questions and observations, ranging from the cost of fresh healthy foods to how the City of New Haven's Farmer's Markets worked in local neighborhoods. The students ended the classroom discussion by agreeing to investigate New Haven's City Seed Program, the local organization that connects the community to Farmers' Markets.

Manchester CC – Resources Forum

The Manchester CC forum focused on resources available to both students and employers through Capital Workforce Partners (CWP). Led by Catherine Seaver, Director of the Business Engineering and Technology Division, faculty at Manchester CC met with Mohamed Chaouki and Marianne Martinez from CWP to learn about funding that is available to both students and employers who are working or are enrolled in Information Technology courses focused on careers in the health care industry. CWP is the recipient of a USDOL Grant (REACH), which assists students with tuition and also provides funding (up to $20,000) to healthcare providers and related employers to support hiring and training of nurses, medical coders, and health information technology professionals.

The faculty had many questions about how to best support the students and make sure that the information was shared with both faculty and counselors. Students can complete a preliminary application with CWP online. Staff from CWP was available to review student information and provide information to both students and employers.

Middlesex CC – HIM Roundtable

CWEALF hosted a Roundtable on Health Information Management (HIM) for program coordinators, faculty and staff, and advisors at Middlesex CC. Two hiring managers, Michelle

Kelvey Albert from Qualidigm and Vanessa Rehkopf from Yale New Haven Hospital, shared their insights into the needs for interns and professionals in the areas of HIM. Albert noted semester-long internships need a long lead time to develop for medical offices, which might hinder their ability and desire to host interns. Therefore, she suggested shorter internship experiences (40-80 hours total) would be more ideal. Rehkopf stated that there is a need for translation of paper charts into electronic systems, and that students should be familiar with both methods of record keeping.

Both speakers also addressed the issue of credentials and qualifications of students and graduates in HIM and HIT. They discussed the importance of student exposure to some real-world electronic medical records, even if only in simulation. Good knowledge of relevant, current software is transferrable to other packages. Additional skills necessary are: communication, customer service, Microsoft Office, and knowledge of HIPPA, regulations, and privacy.

Norwalk CC – Employer Engagement Forum

Norwalk CC sponsored an employer engagement forum coordinated by CWEALF for students taking Exercise Science courses to interact with employers who manage, hire, and / or own businesses that focus on exercise, rehabilitation, and healthy living. Employers participated in a panel discussion and answered questions about their careers and businesses, and offered tips for students who plan to make exercise science a career. Each of the presenters spoke to the students about what it takes to "get into" the business, and more importantly, what it takes to stay in business. They advised the students about what their expectations are for interns who work in their establishments, as well as newly hired employees. After the formal event was over, the employers stayed to answer individual student questions during a networking event.

Sustainability:

While the partnership with CWEALF has ended with the close of the CT HL-SCI grant, the partnerships that were created and fostered between the employers and the Consortium colleges will continue to be invaluable.

For Further Information:

Connecticut Women's Education and Legal Fund - cwealf.org/
CWEALF Executive Director: Kate C. Farrar; kfarrar@cwealf.org; (860) 247-6090
SkillsCommons Program Support Materials - www.skillscommons.org/handle/taaccct/8607

Capital and Manchester Community Colleges Recruit and Maintain Veteran Students through Integrated Use of Veteran Affairs and Services

The Challenge: Veterans returning to campus life from military life face unique and difficult challenges including time management, study skills, and networking opportunities

For veterans returning to college, they face a transition not only to campus life, but to civilian life, as well. Mental and/or physical injuries only add to the complexity of this process of readjustment. The highly structured and constant heightened sense of awareness in military life may transfer into civilian life as difficulty managing time and the ability to focus on one thing for an extended period of time. Many veterans end up feeling isolated or that they just do not belong.

The Solution: Integrating Veterans into the Campus Community through Creation of Veterans' O.A.S.I.S. Centers and Full-time Employment of Veterans Affairs Associate

The Veterans O.A.S.I.S. (Operation Academic Support for Incoming Service Members) Center provides ongoing support and resources for local veterans. Each public college in Connecticut has a Veterans O.A.S.I.S. dedicated to providing a supportive space for veterans and military service men and women to network, socialize, study and share, as they integrate into the college experience.

Capital CC is pleased to announce the opening of the college's new Veterans O.A.S.I.S. Center. Located on the 4th floor of the downtown college's 12-story building, the space is equipped with computers for student use, a lounge area with comfortable seating, a TV, Keurig coffee machine, microwave, and refrigerator.

Manchester CC has repeatedly been recognized for its services to veterans. One example of these services, the college held its first Veteran's Professional Development Day on November 7, 2015, to provide soft skills training and employment opportunities. Activities included: seminars in resume building and interview techniques, an employer and college panel, and time to socialize and network.

Additionally, at Manchester CC, the O.A.S.I.S. Center is used by the MCC VETS (Veterans Empowering Themselves to Succeed) Club to host its monthly meetings. VETS is an on-campus club that assists local veterans and their dependents with networking, and serves as a liaison for the veterans' community outside the college.

The Results:

In Fall 2015, Capital CC had 135 veterans; 22 veterans graduated the previous spring. The

ribbon-cutting ceremony for the O.A.S.I.S. Center took place on October 8, 2015, with Connecticut VA Commissioner, Sean Connelly, cutting the ribbon. At the ceremony, Connelly remarked, "That's the whole concept behind the OASIS...a place where veterans can study, socialize, gather resources and develop relationships with other veterans. We are so fortunate to have this beautiful, fully-equipped new space."

In addition, Manchester CC was named a Military Friendly® school by Victory Media, Inc., for 2015. The college earned rights to the coveted Military Friendly® trademarked designation because of its scores on a rigorous survey assessment of some 12,000 schools nationwide. The list honors the top 15 percent of colleges, universities, and trade schools that are doing the most to embrace America's military service members, veterans, and spouses as students and ensure their success on campus.

Sustainability:
With an eye on providing resources and services towards a targeted population, veterans, each Consortium College ensured these resources and services were not tied to the CT HL-SCI grant and its funding, but rather to the long-term care of the veterans. Consequently, the colleges had access to additional grant staff support time, marketing opportunities, and targeted interventions, such as promoting availability of PLAs, because of the CT HL-SCI grant.

For Further Information:
Capital CC - www.ccc.commnet.edu/hlsci
Capital CC Veterans Counselor: Margaret Abraham; mabraham@capitalcc.edu; (860) 906-5044
Capital CC Veterans Services - www.ccc.commnet.edu/veterans-services.htm

Manchester CC - www.manchestercc.edu/hl-sci
Manchester CC Director of Career & Veterans Services: Julie Greene; jgrenne@manchestercc.edu; (860) 512-3374
Manchester CC Veterans Services - www.manchestercc.edu/veterans/

Regional Workforce Investment Boards (WIB) Bring Recruitment and Employment Resources to the CT HL-SCI Community Colleges

The Challenge: Community colleges have difficulty reaching TAA-eligible, underemployed, and unemployed prospective students through traditional college fairs and marketing strategies, as well as offering soft skills training opportunities to their students

The recruitment of prospective students who fall into the categories of TAA-eligible, underemployed, and unemployed is difficult because potential students typically begin exploring job retraining or educational options at other agencies. Soft skills training and job readiness workshops are available at many community colleges, but the only way the college can obtain information regarding TAA eligibility, underemployed, or unemployed classifications is if prospective students self-identify in one of these categories.

The Solution: Partnering with Regional WIB To Promote Specific Career Pathway Opportunities through Stackable/Latticed Credentials at College and To Conduct Soft Skills Presentations and Forums

Through the CT HL-SCI grant, the collaborative efforts of Recruitment & Placement Coordinators at the colleges and the Workforce Investment Boards (WIBs), offered workshops to increase their capacity to assist students with their resumes and career marketability. One workshop example is a Resume Writing Workshop that was offered. The content, although general for all students, did include components for Veterans. This training was facilitated by Daniel Laffin, Veterans' Employment Representative from the CT Department of Labor and hosted by Manchester CC.

The funding of Recruitment & Placement Coordinators and WIBs has also allowed the consortium to devote significant energy to building upon existing relationships with employers and creatively develop new ones.

The Results:

Capital CC – Met Students at College

In addition to having the benefit of easy access to the regional WIB location via one bus ride from campus to office, Capital CC CT HL-SCI students also had direct access to their WIB representative due to an agreement with the college to provide office space to the representative on campus. With convenient hours, the WIB satellite office at Capital CC allowed students to discuss program, internship, and career options with the representative. This direct access also created and fostered a more nurturing and engaged relationship where students made repeat visits to discuss issues as they arose.

Gateway CC – Conducted Presentation: Interview Skills

At Gateway CC, the WIB representative visited the Medical Administrative Assistant practicum course to conduct mock interviews with students. As part of coursework, this course requires an internship to practice on-site career skills, as well as to develop soft skills. One of the soft skills they learn in the course is how to apply for a job and succeed in a job interview. Each student is asked to:

- Talk about him/herself;
- State why he/she is qualified for the job as a Medical Administrative Assistant;
- Articulate what his/her skills are;
- Provide information about the courses they took; and
- Report on what he/she learned from the internship.

The WIB representative talked to each student after the mock interview concluded, giving them feedback on their strengths and weaknesses during the interview. These suggestions can be applied to real interview scenarios once students graduate from the program and begin their job searches.

Manchester CC – Held Informational Sessions
With the assistance of the local WIB representative, Manchester CC hosted its annual Spring Open House. The event was for new students and was open to the general public. Potential students had the opportunity to tour the campus and learn more about the 80+ certificates and degrees offered by the college, which included programs from CT HL-SCI.

Manchester CC faculty, staff, and current students were also available to answer questions about the programs, financial aid, internship opportunities, and other academic support services. More specifically, the Health Career program directors were on hand to discuss their programs and answer any questions from students interested in health careers. Overall, the event was a great success with over 500 people in attendance.

Middlesex CC – Found Internship Opportunities for Veterinary Technology Students
Through a promising practices partnership between the WIB representative and the College's Recruitment & Placement Coordinator, Middlesex CC "took to the road" armed with brochures for the new CT HL-SCI Veterinary Technology program and a listing of local veterinary offices. In one day, they stopped at 10 offices and each allowed them to share their information and discuss the new program. Two offices were interested in hosting interns in Spring 2015, and one even had an opening for a full-time Veterinary Assistant, a revised CT HL-SCI program. Another afternoon of recruitment visits netted another two internships, one for Spring 2015 and one for Fall 2015.

Norwalk CC – Conducted Forum on Placement Services
A human resources manager with Engage Staffing and the Work Place Inc. gave a workshop at Norwalk CC on job search and interviewing techniques. The event was geared to students enrolled in Norwalk CC's health and life sciences programs, but all students were welcome. Nearly 30 students attended the talk titled "I have an Interview, Now What? Nine Steps to

Landing a Job." Topics included researching a company online, choosing appropriate interview attire, developing compelling answers to the most common interview questions, preparing talking points, identifying your strengths, and following up after the interview.

Sustainability:
There are continuing collaborative efforts between the WIBs and community colleges to hold forums for faculty and counselors to educate them about tuition assistance and other grant programs at the WIB that can help students. Soft skills workshops and forums for students will also be conducted.

For Further Information:
Capital Workforce Partners (CWP) - www.capitalworkforce.org
Eastern Connecticut Workforce Investment Board (EWIB) - www.ewib.org
Northwest Regional Workforce Investment Board (NRWIB) - www.nrwib.org
Workforce Alliance - www.workforcealliance.biz
Workplace, Inc. - www.workplace.org
SkillsCommons Program Support Materials - www.skillscommons.org/handle/taaccct/8605; www.skillscommons.org/handle/taaccct/6781; www.skillscommons.org/handle/taaccct/6779; www.skillscommons.org/handle/taaccct/6774; www.skillscommons.org/handle/taaccct/8590

Middlesex Community College Creates Internship & Placement Services Tracking for CT HL-SCI Programs

The Challenge: Whereas some accredited programs are required to track students' internship sites, overall, most community college programs do not track and record students' placement services or internship sites, which can be used to promote the hard and soft-skills students receive as part of their complete education
Although many accrediting agencies require documented evidence of students' internships and clinical experiences, there is no consistency in the tracking documentation used within a college, and tracking practices are nearly non-existent for programs that do not have an outside accrediting body. However, this information can be beneficial to colleges when promoting programs, applying for grants or funding, and following the success of graduates. Colleges can use the documented evidence to illustrate the real world experiences their students gain during an internship, as well as the soft skills gained throughout the educational program. While it would be best for the college's institutional research (IR) department to develop a consistent tracking document for all programs to use, the tracking of internships and placement services is not a priority for most IR departments.

The Solution: Developing an Excel Document that Each Program Can Use to Track and Record Each Student's Internship and Placement Services Each Semester

As part of collecting the necessary records for USDOL reporting, Middlesex CC developed its own Excel document for each CT HL-SCI program to track and record each participants' internship and placement services. The Excel document was developed first to meet the needs of preparing the internship information for the USDOL quarterly reports. But once it was pilot-tested with a few of the college's CT HL-SCI programs, the Excel document was expanded to track other services and activities, including academic advising, placement services, and alumni information (employment, continuation of education, etc.). Additional tabs were added for programs to document their employers / institutional partners, advisory board membership, and requests to CT HL-SCI staff for assistance.

The Results:

Middlesex CC's CT HL-SCI staff initially prefilled each Excel document with student / participant information for each of the CT HL-SCI programs prior to distribution to relevant program coordinators. These Excel documents were distributed at the beginning of each semester with new students added, and used by program coordinators throughout the semester to document students' experiences. At the end of each semester, the program coordinators would send the completed Excel documents back to the CT HL-SCI staff. CT HL-SCI program coordinators readily adopted the HL-SCI Program Coordinator Spreadsheet, stating that it made tracking for their accrediting bodies easier and helped to establish documentation of services to students.

Sustainability:

Due to the CT HL-SCI program coordinators adoption of the Excel document and discussion of it during departmental meetings, other non-CT HL-SCI programs requested access to the Excel document, as well. Using the campus-wide shared drive, CT HL-SCI staff posted a blank version of the Excel document for use throughout the college.

For Further Information:

Middlesex CC - mxcc.edu/hlsci
Middlesex CC Dean of Academic Affairs: Steve Minkler; sminkler@mxcc.edu; (860) 343-5706
SkillsCommons Program Support Materials - www.skillscommons.org/handle/taaccct/8570

Eastern Connecticut State University Offers Community College Students the Opportunity for a Full University Experience, including Advanced Laboratory Skills, Individual Research Projects, and Public Presentation Opportunities

The Challenge: Many community college students lack the opportunity for interactive

research experiences, and are concerned about their ability to continue their education at the bachelor's level

Collaborative studies conducted by the Council on Undergraduate Research (CUR) and the National Council of Instructional Administrators (NCIA) highlight the importance of research opportunities for community college students to develop the necessary skills to transfer to four-year institutions and succeed in the workplace. However, due to funding constraints, heavy faculty teaching loads, and a lack of advanced research equipment, many community colleges face considerable challenges to their ability to integrate undergraduate research experiences into their curricula. Without these opportunities, students who transfer to four-year institutions may need to take additional coursework and increase their time to degree completion, especially in STEM majors. Wyner, et al determined that "a culture in which faculty, advisors, and others believe that community college students, including those from disadvantaged backgrounds, can meet four-year college standards" marks those programs that most successfully prepare transfer students to attain bachelor's degrees (p.22, 2016). Academic support and increased access to facilities, resources, and research options foster opportunities for community college students to continue their educational careers.

The Solution: Summer Undergraduate Research Program (SURP)

Undergraduate research has been identified as one of the high impact learning practices that improves student retention and student engagement (Association of American Colleges & Universities). At Eastern Connecticut State University (ECSU), the Summer Undergraduate Research Program (SURP) was designed to allow students to explore a variety of research areas within one of two tracks: Bioscience or Building Healthy Communities.

In both tracks, students were:

- introduced to multiple disciplines and
- exposed to a variety of professions (and professionals) related to those disciplines.

All of the students also benefited by:

- Learning how to formulate research questions;
- Gaining an understanding of the skills and knowledge needed to be successful in their fields;
- Receiving academic advising to help them prepare for additional undergraduate and graduate studies; and
- Participating in career skills workshops.

SURP ran for six weeks, Monday through Friday, 9 a.m. – 4 p.m., with some evening work. ECSU applied for, and received CCAP designations for each track, allowing students to receive four

credits from Charter Oak State College for a nominal fee. These credits are accepted by all of the state community colleges.

Bioscience students:
Introduction to Bioscience Laboratory Skills and Concepts (4 credits-Lower Level)

Building Healthy Communities students:
Introduction to Physical Health & Epidemiology Laboratory Skills and Concepts (3 credits-Lower Level)
Geographic Information Systems (GIS) Analysis for Public Health (1 credit-Lower Level)

Here are a few examples of students' assessments of their experiences at SURP:

> *"The highlight of the program for me was . . . having the opportunity to use the confocal microscope. I've never been able to see up close how a microscope that complex operates, and I [now] plan on using it for an independent study of mine."*
>
> *"Now I feel confident I can succeed at a four-year college."*
>
> *"It's amazing being around like-minded people who are as excited as you. I'm more interested in becoming a scientist"*
>
> *"SURP exposes students in community colleges to technologies and techniques not usually available to them at a two-year institution. Working side-by-side with researchers is a whole new level of experience."*
>
> *"I didn't know what to expect. I came to SURP with only basic knowledge of labs, but I knew that I loved science. . . . I was so inspired by the professors and by the students. They were so passionate; it's amazing being around like-minded people who are as excited as you."*

The Results:
Over 50 students participated in the program completing at least 120 hours of hands-on research in addition to field trips, speakers, individual research projects, and advising. Approximately 15 students served as teaching assistants (including former SURP participants), which enhanced their research, technical, and leadership skills. Students worked in cohorts with a diverse group of peers from across the six colleges, and most students have maintained

contact with their cohort. Some students identified careers or fields of interest, and others found ways to continue research with a faculty member in the fall.

Sustainability:

In addition to the direct benefits to students, ECSU gained a lot of knowledge and skills that are being used to help transfer students succeed moving forward. First, the program allowed faculty to develop new methods of engaging students in practical activities early on in their academic careers, as faculty used their experience to improve their instruction from year to year. Second, faculty identified the core skills and abilities that help transfer students to be successful at a four-year institution. Some modifications have been made to existing courses to incorporate this knowledge and experience. Third, ECSU is in the process of creating a one- or two-credit course specifically for transfer students in the STEM fields as a result of this program. While this course cannot offer the same breadth of benefits as SURP, it will still provide the core skills in an economically sustainable model and will be available to students transferring to any four-year college. Finally, the opportunity to bring community college faculty to campus (one participated in SURP and others led brown bag lunch sessions) provided the opportunities for faculty to meet and share information about their respective programs, providing longer-term connections. Additional ties were also made between ECSU faculty and bioscience, public health, and allied health businesses across the state.

For Further Information:

Eastern Connecticut State University - www.easternct.edu/healthlifescience/
Eastern CSU Special Assistant to the Provost: Polly Silva; silvap@easternct.edu; (860) 465-0655
SkillsCommons Program Support Materials - www.skillscommons.org/handle/taaccct/8559

Project Management: Promising Practices for CT HL-SCI Strategy 4

Effective project management begins with an experienced Senior Project Director. The Senior Project Director must demonstrate supervisory experience and a track record of establishing organizational partnerships and joint ventures that have resulted in successful outcomes. These qualifications ensure that the Senior Project Director has: 1) direct experience managing the fiscal and performance reporting associated with public funding; 2) capacity to oversee an extended staffing structure; and 3) ability to organize the various CT HL-SCI workgroups and partner relationships.

While reporting to the President of Norwalk CC (the lead agency), the Senior Project Director oversees the CT HL-SCI Consortium, which includes five Connecticut community colleges, one Connecticut state university, and one Connecticut state college. Other partners include five WIBs, one health care industry association, the state's bioscience growth council, and seven individual employers from the targeted industries. The CT HL-SCI also organizes an Advisory Board and two Workgroups to purposefully open the channels of communication among institutions of higher education, employers, and the public workforce system. Ingredients for a successful continued collaboration include specific shared goals, inclusive and diverse membership, and funding to support facilitation and communication.

The CT HL-SCI Advisory Board develops sustainability strategies for each design priority that requires ongoing support. Strategies such as boosters, PLAs, and curriculum innovation require up-front investments (i.e., over the TAACCCT grant term) with longer term benefits at significantly reduced costs. Those benefits include increased enrollments, improved retention, and more completers, all of which provide greater income potential for the Consortium colleges and greater likelihood for longer-term sustainability.

Capital and Gateway Community Colleges Develop Sustainable Programs from the Ground Up through Industry Partnerships

The Challenge: Co-grantees may have difficulty sustaining grant-funded programs at current conditions and local workforce development needs, post-grant

The health and life sciences industries continue unprecedented and rapid transformations driven by the adoption of electronic medical records, the prevalence of genomic sequencing research (and the emergence of personalized medicine), and public health care reform legislation. Most people, including TAA-eligible workers, struggle to understand the employment and education / training implications (and opportunities) related to these changes. The education and training systems must increase their responsiveness to (structural) changes

in the economy by operating broader, faster, and more participatory channels of communication with industry.

The Solution: Integrating Sustainability Strategies During Program Development / Revision
Administered through Capital CC's School of Workforce and Continuing Education, the new 63-hour Electrocardiogram (EKG) Technician program meets two evenings a week and prepares students for employment in hospitals, laboratories, or cardiologists' offices. EKG Technicians specialize in electrocardiogram testing of patients. By attaching electrodes to the patient's chest, arms and legs, technicians use EKG machines to monitor the heart's performance. Data captured by EKG Technicians assists doctors in diagnosing heart conditions. Projected job growth in this field is expected to increase by 22% over the next ten years, according to the U.S. Bureau of Labor Statistics.

Capital CC partnered with District 1199, New England Healthcare Employees Union, for the EKG program to offer affordable education opportunities to its members. Each year, hundreds of unionized nursing home workers make use of the 1199 Training and Upgrading Fund to take Adult Education programs, attend college, or receive training at their workplace.

Knowing that many fire departments hire every two years, and typically give staff positions to about 30 applicants at a time, Gateway CC sought to establish a certificate program for students interested in a career as a firefighter. Through discussions with local fire departments, it was found that many of them look for applicants with a one-year certificate or two years of college credits from an accredited college or university.

The Results:
In Fall 2015, all twelve graduates of Capital CC's EKG Technician program were health care workers who are members of District 1199, and were sponsored by the 1199 Training and Upgrading Fund. Additionally, the EKG program was evaluated for college credit by Charter Oak State College's CCAP, and has been awarded 3 college credits.

Gateway CC partnered with the New Haven Fire Academy for practical skills training for students in the Firefighter 1 & 2 Program. This partnership allows Gateway CC students to receive both college credit and practical skills in order to prepare them for a career in firefighting. Firefighting is so competitive, in fact, that many applicants obtain EMT certification before applying to become a firefighter, making them more desirable to hiring departments. As such, Gateway CC has also included EMT Certification training as part of the curriculum in the Firefighter 1 & 2 Certificate Program.

Sustainability:
Capital CC has fully-funded a Program Coordinator and faculty to support the EKG program.

Gateway CC has fully-funded a Program Coordinator and faculty to support the Firefighter program.

For Further Information:
Capital CC - www.ccc.commnet.edu/hlsci
Capital CC Electrocardiogram Technician (EKG) Program Coordinator: Ruth Krems; rkrems@capitalcc.edu; (860) 906-5142
Capital CC Continuing Education Office - www.ccc.commnet.edu/cehome.htm; www.capitalcc.edu/docs/continuing-education/CE-Course-Catalog-Summer-2016(5-11-2016).pdf
SkillsCommons Learning Resources - www.skillscommons.org/handle/taaccct/8447

Gateway CC - www.gatewayct.edu/Programs-Courses/Health-and-Life-Sciences-Grant-Initiative
Gateway CC Firefighter 1 & 2 Certificate Coordinator: Janet Hayes; jhayes@gatewayct.edu; (203) 285-2431
Gateway CC Firefighter 1 & 2 Program - www.gatewayct.edu/firefighter
SkillsCommons Learning Resources - www.skillscommons.org/handle/taaccct/8465
SkillsCommons Program Support Materials - www.skillscommons.org/handle/taaccct/8115; www.skillscommons.org/handle/taaccct/8611

CT HL-SCI Establishes Collaborative Approach for Consortium Reporting Structure of Financial and Performance Reports

The Challenge: Collecting and compiling the required financial and performance reports from diverse, individual institutions for the required Quarterly Financial, Quarterly Narrative Progress, and Annual Performance Reports
In a large, decentralized grant involving several types of institutions only newly part of a single system – community colleges, the state's public 4-year online college and a university – it was a challenge to take steps to ensure that data was presented in a common way and using a common language. Some institutions had program deliverables to report, while others played a different role and needed different ways to track success.

The Solution: Creating a Collaborative Timeline for Each Institution to Utilize to Adhere to Deadlines, as well as Preparing Universal Reporting Documents for Them to Use
The first step undertaken was to create a definitions document. Starting with each deliverable

referenced in the Statement of Work, the consortium grant staff came to consensus on definitions. In addition, to defining each deliverable, the consortium also defined how the deliverable would be tracked and how student enrollment would be tracked. A similar process was conducted with the Project Director, Grant Finance Officer, and fiscal staff at the institutions to ensure that fiscal reporting was also consistent. A fiscal review tool was created and used by the Consortium. Then prior to each quarter, a document was shared with each Consortium college and university with the schedule of when the reports had to be completed internally prior to submission to the Senior Project Director and the Grant Finance Officer deadline.

The Results:
Consortium members gained increased confidence in the thoroughness and accuracy of their reports. The definitions also helped to shape the development of new programs, online courses, and boosters, and set parameters for each category of deliverable. It also helped institutions to share information and collaborate in the development of certain programs, courses, and boosters. The quarterly schedule also allowed for timely submission of reports without the backlog of internal review holding up final submission to the Senior Project Director and Grant Finance Officer.

Sustainability:
While the reporting structure created and utilized during the CT HL-SCI grant is no longer needed at the close of the grant, the consistency created in the online/hybrid courses and boosters, in particular, make them significantly easier to share with the 10 institutions beyond the Consortium that comprise the CSCU system. This is as a result of the Consortium developing the Definitions document which provided the framework for the development of the online/hybrid courses and boosters.

For Further Information:
CT Health and Life Sciences Career Initiative - www.ct.edu/initiatives/hlsci
CT HL-SCI Senior Project Director: Lesley Mara; lmara@commnet.edu; (860) 723-0167
SkillsCommons Program Support Materials - www.skillscommons.org/handle/taaccct/8594; www.skillscommons.org/handle/taaccct/7293; www.skillscommons.org/handle/taaccct/7279; www.skillscommons.org/handle/taaccct/7277; www.skillscommons.org/handle/taaccct/7281

Norwalk Community College Standardizes Data and Tracking System for CT HL-SCI TAACCCT Progress and Evaluation Reporting Using Banner System

The Challenge: Collecting consistent progress and evaluation metrics from five institutions

with differing data recording abilities

In a large, decentralized grant involving several types of institutions only newly part of a single system – community colleges, the state's public 4-year online college and a university – it was a challenge to take steps to ensure that data was presented in a common way and using a common language. Even after developing the definitions document referenced previously, colleges were inconsistent with tracking the student level data. There was a consensus on what to track, but not how to track it.

The Solution: Using Consortium-Wide Student Data Management System, Banner, to Operationalize Terms / Metrics, as well as Preparing Consortium-Wide Tracking Files

As the lead agency, Norwalk CC grant staff met with their institutional research (IR) department director and staff to discuss the student level data needs. The majority of data needed could be retrieved from Banner® by Ellucian, the system-wide student data management software. Every community college in CT uses this CSCU-linked software for both fiscal and student records. Consequently, each Consortium college has access to the same extract files with the same data variables.

The Results:

Using a combination of the USDOL Annual and Quarterly Program Reporting Forms, TAACCCT Data Elements for Individual-Level Participant Data Collection, and the stated data needs of the third party evaluators, the "Data Variable Needs using Banner" Excel file was created. The Excel file contained the Variable name (required by USDOL or evaluator), the Banner® Extract (e.g., SWRXF05, SWRXH08, etc.), and the Banner®-titled Variables to use from the Extract. There is also a column which states where the data should come from, in addition to or in some cases, in place of, using Banner®. Examples are Student Intake Forms, Program Coordinators, Banner®, or calculate. Once the Excel file was shared with the Consortium colleges' CT HL-SCI grant staff and IR departments, the next task was the development and distribution of Consortium-required tracking documents, "HL-SCI Master Deliverables Sheet" and "HL-SCI Master Tracking Sheet", for Grant Management preparation of the Quarterly Report. These two Excel files have tabs for each college to record their own data for consistency among the Consortium. Some colleges chose to adopt these files as their own tracking documents, but this was not required, allowing Consortium grant staff to utilize whatever tracking system they were most comfortable, as long as each college submitted their quarterly data by the deadline on the two Master sheets.

Once instituted, the use of the data files (Data Variable Needs using Banner, HL-SCI Master Deliverables Sheet, and HL-SCI Master Tracking Sheet) allowed colleges to reexamine their previous Quarterly Reports and Annual Performance Reports and submit revised versions with

more accuracy and completion than their original versions. Overall, this resulted in the Consortium being able to likewise have consistent and accurate data to report on the progress of the grant, as well as for the third party evaluators.

For Further Information:

CT Health and Life Sciences Career Initiative - www.ct.edu/initiatives/hlsci
CT HL-SCI Senior Project Director: Lesley Mara; lmara@commnet.edu; (860) 723-0167
SkillsCommons Program Support Materials - www.skillscommons.org//handle/taaccct/8877; www.skillscommons.org/handle/taaccct/8594; www.skillscommons.org/handle/taaccct/7291; www.skillscommons.org/handle/taaccct/7841; www.skillscommons.org/handle/taaccct/7843; www.skillscommons.org/handle/taaccct/7842; www.skillscommons.org/handle/taaccct/7839; www.skillscommons.org/handle/taaccct/7846; www.skillscommons.org/handle/taaccct/7847; www.skillscommons.org/handle/taaccct/7848

CT HL-SCI Holds Monthly Team Meetings of Consortium Partners and Co-Grantee Community Colleges to Connect Recruitment & Placement Coordinators, Veteran Affairs Associates, and Workforce Investment Board Representatives

The Challenge: Co-Grantees spread across the state, though working on the same initiative with similar issues and limiting conditions, may work in a vacuum without consulting partnering agencies or colleges for suggestions and solutions

Several of the institutions that were part of this Consortium (in particular Charter Oak State College and Eastern Connecticut State University) were not part of the same system prior to this grant, and therefore, had little to no experience working with community colleges at this scale and with this intensity. Additionally, all of the Workforce Investment Boards were part of this consortium, and the cultures of the two organizations and how they operate, are very different.

The Solution: Consortium-Wide Monthly Team Meetings

The work groups established as part of the grant design and governance (curriculum innovation and recruitment and placement), as well as the shared Blackboard organization that contained all meeting agendas, minutes, deliverables, etc., greatly improved collaboration and cooperation throughout the life of the grant. Additionally, the Chief Academic Officers and the Grant Management Team helped to clear any perceived or real obstacles to collaboration and program implementation. In addition to the Chief Academic Officers, the Management Team consisted of leaders from all of the institutions, including the WIBs, Deans of Student Services, Deans of Administration, the Provost of the Board of Regents and others – resulting in the ability to look at any issue from a multitude of angles and perspectives to develop solutions.

The Results:
The work groups and Grant Management Team served to ensure that each consortium member had a voice in decision-making, that unintentional consequences to other areas of the institutions were avoided through wide inclusion and resulted in increased buy-in for implementation decisions. Monthly work groups meetings provided regular communication and the regular attendance of members demonstrated their value.

Sustainability:
Although anecdotal, departments and divisions within institutions reported greater ongoing collaboration and relationships built between institutions have resulted in collaboration on other projects.

For Further Information:
CT Health and Life Sciences Career Initiative - www.ct.edu/initiatives/hlsci
CT HL-SCI Senior Project Director: Lesley Mara; lmara@commnet.edu; (860) 723-0167
SkillsCommons Program Support Materials - www.skillscommons.org/handle/taaccct/8594; www.skillscommons.org/handle/taaccct/8609; www.skillscommons.org/handle/taaccct/8608; www.skillscommons.org/handle/taaccct/7274; www.skillscommons.org/handle/taaccct/7275; www.skillscommons.org/handle/taaccct/8295; www.skillscommons.org/handle/taaccct/8297; www.skillscommons.org/handle/taaccct/7300; www.skillscommons.org/handle/taaccct/7302

U.S. Department of Labor's Noted CT HL-SCI Practices, as Determined During Site Visit

Comprehensive Engagement of American Job Centers and Workforce Investment Boards (WIB) to Promote Pathways to Employment
Norwalk CC and its consortium partners are integrally involved in providing streamlined services to students in concert with the local WIBs. Capital CC and Manchester CC have a strong collaboration with Capital Workforce Partners. Students are referred through the WIB and are often co-enrolled in Workforce Investment Act (WIA)-training programs. The Recruitment & Placement Coordinators at the colleges and the WIBs are in constant communication to provide ample career counseling and placement services, as well as to maintain notes on student progress to track student outcomes.

Additionally, Workforce Alliance reviewed curriculum from Gateway CC for some proposed courses. Workforce Alliance indicated that some of the proposed programs would not lead to an employment pathway based on current LMI data. Gateway CC discontinued development of these programs due to the WIBs' counsel.

This intensive collaboration exceeds the requirement of the SGA to promote the engagement of the public workforce system by tracking program participants and ensuring that proposed programs of students are included in appropriate eligible training provider lists.

Key Partnerships for Expanding Biotechnology Program

Norwalk CC has a strong employer partnership with The Jackson Laboratory for Genomic Medicine (JAX). This partnership opens the pathway for engagement with many employers within the new high growth field of biotechnology. This is enabling progressive development of the community college biotechnology curriculum, the feeder programs from high and middle schools into the developing biotechnology program, as well as an active speaker's bureau to promote opportunities. Norwalk CC's partnership with JAX allows it to keep its finger on the pulse of the regional biotechnology industry and tailor the curriculum to specific industry needs.

Aggressive Veteran Service Strategy

Interviews with veteran associates, an integral part of the grant outreach and service delivery strategy, demonstrated these associates are going above and beyond to serve their veteran populations through aggressive recruitment of eligible candidates, tracking of veteran's participation in the program through graduation, and provision of continual supportive counseling and case management services. The veteran associates' services, in conjunction with the Prior Learning Assessments (PLAs), have provided hundreds of credits to veteran program participants and enhanced services under the TAACCCT program. PLA coupled with supportive services and career counseling are providing new opportunities to veterans to advance their careers and gain credit for their in depth experiences.