CTE Enhancement Fund Regional Share Grant Application

Lead College: Cabrillo College
Project Name: Shared Regional ICT Lab
Date: Fri Mar 13 2015

Region
Bay

Lead College
Cabrillo College

Send Application Drafts to
gebrady@cabrillo.edu,rgrotegut@ohlone.edu,jjones@mpict.org,kabeltra@cabrillo.edu

Project Name
Shared Regional ICT Lab

Brief Overview
Information and communication technologies (ICT) is a booming industry and employment sector, globally, nationally, in California and, especially, in the San Francisco Bay Area. BACCC has identified ICT as a priority strategic sector, generally and in this grant proposal solicitation.

The 28 San Francisco Bay Area community colleges all have ICT related programs, and all struggle with funding, building and managing hands-on ICT lab facilities that develop skills demanded by ICT employers.

This proposal will take roughly a million dollars in one-time grant funding to create, staff and provide a regional shared ICT lab facility which will be used, initially, by 24 of those 28 colleges.

This combination of software and hardware will enable faculty and students, from any Internet accessible location, to utilize a virtual lab environment designed to provide employer demanded “hands-on” experience with a variety of computer operating systems, networking equipment, and application software.

The solution comes with 450 proven ICT labs that will enable participating colleges to offer both entry-level classes and incumbent worker training in ICT related areas that range from
introductory computer classes to cutting edge courses that focus on cybersecurity, virtualization, data storage, operating systems, systems administration and network configuration and design.

A key feature of this ICT Lab facility is the ability to control access to individual lab environments (pods) through its reservation system. For face-to-face classes, faculty will be able to reserve a limited number of pods for their students during class time. Since the lab environment is available 24/7, students will be able to register for pod access on a first come, first serve basis, and gain hands-on experience outside of the classroom. The lab environment is also well suited for instruction of online classes.

Faculty are provided key statistical information including “time on task”, configuration and log files for the networking labs, and assessment and reflection items that students must complete when doing their lab work. Additionally, faculty can “enter” a student’s pod remotely and provide real time assistance.

The remote lab system can accommodate 288 simultaneous connections and up to 16,128 individual 3-hour lab sessions during any 24/7 week.

It would cost an individual college about $150,000 to create a similar lab to support its own needs. That does not include costs and time to manage the system. If each of the 24 colleges participating in this proposal did that, they would collectively spend $3.6 million. This effort creates similar functionality for all for less than a third of the one-time cost, and it provides an opportunity for a higher level of technical management and support for all, at a much lower cost, something all of the colleges struggle to support. Most importantly, it creates a shared user community within and across colleges, which leads to collaboration and sharing.

We expect there to be an increase in supply for the targeted occupations over a five-year period, but are not able to project an increase in supply for the first year.

Intended Impact
To estimate remote lab facility participation, utilization and impact, this project conducted a survey of relevant programs at Bay Area community colleges. The survey results will be provided upon request. Twenty-one of 28 colleges responded. From that, estimates of utilization are:

- 21 colleges participating, (3 colleges have indicated intention to participate outside the survey)
- 280 courses leading to industry certifications impacted
- 547 sections of those courses will utilize the labs annually
- 11,350 students will use those labs annually

Total Project Amount
Project Lead Name
Gerlinde Brady

Project Lead Email
gebrady@cabrillo.edu

Project Lead Phone Number(s)
831-477-5672

Participating Colleges
Berkeley City College
Cabrillo College
Chabot College
City College of San Francisco
College of Alameda
College of San Mateo
Contra Costa College
Contra Costa CCD
De Anza College
Diablo Valley College
Evergreen Valley College
Foothill College
Gavilan College
Hartnell College
Laney College
Las Positas College
Los Medanos College
Merritt College
Mission College
Monterey Peninsula College
Ohlone College
San Jose City College
Santa Rosa Junior College
Skyline College
Solano College

Primary TOP Code for Program Area to be Served
PROJECT SERVES MULTIPLE TOP CODES
Additional TOP Codes to be served
0701.00 Information Technology, General
0702.00 Computer Information Systems
0702.10 Software Applications
0707.00 Computer Software Development
0707.10 Computer Programming
0707.20 Database Design and Administration
0707.30 Computer Systems Analysis
0708.00 Computer Infrastructure and Support
0708.10 Computer Networking
0708.20 Computer Support
0709.00 World Wide Web Administration
0709.10 E-Commerce (technology emphasis)
0799.00 Other Information Technology
1223.00 Health Information Technology

How Proposal Meets CTE EF Criteria
N/A

Labor Market Information Sources
Data Source: EMSI 2014.4 – QCEW Employees, Non-QCEW Employees, and Self-Employed

Industry Sectors Served
ICT/Digital Media

Geographic area to be served
North Bay
East Bay
Mid Peninsula
Silicon Valley
Santa Cruz & Monterey

#1.1 Occupation Title
Computer User Support Specialist

#1.2 SOC Code
15-1151

#1.3 Starting hourly wage
$16.28

#1.4 Median hourly wage
$30.37

#1.5 Number employed in 2013
21,796

#1.6 Number projected to be employed in 2016
24,510

#1.7 Projected annual openings
1,280

#1.8 Estimated annual community college supply
689

#1.9 Estimated total annual supply
872

#1.10 Labor Market Gap
To be calculated for combined total openings of all 5 occupations

#1.11 Projected increase in supply
0

Would you like to enter another occupation?
Yes

#2.1 Occupation Title
Computer Network Support Specialist

#2.2 SOC Code
15-1152

#2.3 Starting hourly wage
$22.23

#2.4 Median hourly wage
$39.27

#2.5 Number employed in 2013
8,181

#2.6 Number projected to be employed in 2016
8,743

#2.7 Projected annual openings
325

#2.8 Estimated annual community college supply
689

#2.9 Estimated total annual supply
872

#2.10 Labor Market Gap
To be calculated on last entry for combined annual openings for all 5 occupations

#2.11 Projected increase in supply
0

Would you like to enter another occupation?
Yes

#3.1 Occupation Title
Computer Systems Analysts

#3.2 SOC Code
15-1121

#3.3 Starting hourly wage
$28.80

#3.4 Median hourly wage
$46.57

#3.5 Number employed in 2013
27,472

#3.6 Number projected to be employed in 2016
30,331

#3.7 Projected annual openings
1,420

#3.8 Estimated annual community college supply
689

#3.9 Estimated total annual supply
872

#3.10 Labor Market Gap
To be calculated on last entry for total annual openings for 5 occupations

#3.11 Projected increase in supply
0

Would you like to enter another occupation?
Yes

#4.1 Occupation Title
Information Security Analyst

#4.2 SOC Code
15-1122

#4.3 Starting hourly wage
$33.39

#4.4 Median hourly wage
$50.99

#4.5 Number employed in 2013
3,072

#4.6 Number projected to be employed in 2016
3,581

#4.7 Projected annual openings
224

#4.8 Estimated annual community college supply
689

#4.9 Estimated total annual supply
872

#4.10 Labor Market Gap
To be calculated on last entry for total annual openings for 5 occupations

#4.11 Projected increase in supply
0

Would you like to enter another occupation?
Yes

#5.1 Occupation Title
Network and Computer Systems Administrator

#5.2 SOC Code
15-1142

#5.3 Starting hourly wage
$26.39

#5.4 Median hourly wage
$42.99

#5.5 Number employed in 2013
15,461

#5.6 Number projected to be employed in 2016
16,673

#5.7 Projected annual openings
675

#5.8 Estimated annual community college supply
689

#5.9 Estimated total annual supply
872

#5.10 Labor Market Gap
3,924 - 872 = 3,052

#5.11 Projected increase in supply
0

Builds Upon Existing Assets
This proposal encompasses approximately $400,000 of in-kind equipment and facility donations from participating colleges. It also engages and enables CCC ICT Deputy Sector Navigators and their funding streams. Most importantly, it provides teaching and learning infrastructure that can be leveraged by participating colleges and in a wide variety of future grant funding applications, including all of those listed in this question prompt.

The shared ICT remote lab (NETLAB) can easily and effectively support WIB/WIA funded projects like the Tech SF Project and support the Bay-Area-wide IT/ICT training and retraining of dislocated workers.

There are existing pilot programs, such as the connection between Ohlone College and
Irvington High School, that can be duplicated in other districts. Irvington is a California Partnership Academy. Students, in their IT Pathway, get hands-on practice learning on Ohlone’s existing NETLAB. The East Bay Career Pathways Trust is looking at duplicating this type of partnership agreement.

This project could support future TAACCT grant proposals as well. Successful TAACCT grants, in other states, have incorporated shared remote labs in their proposals.

This proposal builds heavily on industry academy program assets (curriculum, instructor resources, labs, industry certifications and subject matter expert networks).

Builds Regional Alignment
Many of the labs currently included in the solution align to the new CCC IT Model Curriculum and to widely understood and adopted industry certifications and industry academy programs. This infrastructure could be used in CCC ICT contract education. The occupations served are in very high, documented demand in the Bay Area and nationwide.

If colleges align on technical labs and lab facilities, that is likely to encourage alignment in curriculum and credentials. Many of these labs directly relate to courses in the new CCC IT Model Curriculum. Seven of the twelve courses that make up the IT Model Curriculum can already be supported by NETLAB.

Lab resources for CompTIA, Cisco, EMC, Linux Professional Institute (LPI), and VMware are already included in the proposed remote lab solution. Others are likely to be impressed by this effort and encouraged to work with Bay Area colleges to create solutions for remote labs if they know those efforts reach many colleges, programs and students efficiently. For example, Netlab labs are in development for Microsoft IT Academy curriculum, and this proposal includes funds to develop new labs in the Bay Area.

The Word version of this proposal includes numerous examples of how this shared lab infrastructure impacts identified strategic collaboration opportunities.

Articulation
The hands-on labs, that instructors will be facilitating and students will be completing, align to in-demand industry certifications, industry academy programs, and to the new CCC IT Model Curriculum. They serve as an incentive for alignment with curriculum supported by the labs. Hard work has been done to incent adoption of these curricula by high schools, community colleges and 4-year colleges and universities. This infrastructure can be used to deliver dual enrollment ICT courses to high school students. The CCC IT Model Curriculum was initially and is still intended to be a transfer model curriculum for in-demand hands-on workforce roles in IT.
Industry Engagement

Network Development Group (NDG) provides the remote access solution utilized in this proposal. NDG has been engaged throughout the proposal development effort, and this effort has the explicit support of its President, Rich Weeks. Labs already developed for this solution include collaborations with the Cisco Networking Academy, VMware IT Academy, EMC Academic Alliance, Linux Professional Institute Program, and CompTIA. Labs under development include collaborations with the Microsoft IT Academy and Wireshark.

Cisco’s Network Academy program, the largest online education system in the world, has been an early supporter of the use of remote labs. The Western Academy Support and Training Center (WASTC) at Ohlone College has been using this remote lab availability to provide effective and cost sustainable professional development in their train-the-trainer remote classes for the past three years.

Description Industry Match

This proposal does not include a hard dollar industry match. However, and more importantly, it includes a contribution of existing community college equipment, experience and expertise.

All of the labs including the industry certification labs will be available at no charge. This value, with the equipment and facility "in-kind" donation ($400,000) from the seven contributing colleges, far exceeds the total value of this project.

The value of the developed labs and industry academy resources these labs align to is many millions of dollars.

Total value of match
1,000,000+

Faculty Engagement

This effort was identified as a priority project need as part of the BACCC ICT Marketplace, in the BACCC ICT study, and by MPLIC. It has also been identified by CCC ICT SN/DSNs statewide, and a similar effort has already been funded in the CCC North/Far North Region. Project leadership member Richard Grotegut leads the CCC statewide Netlab users' group, which has regular and well-attended calls. This project has had multiple regional calls with stakeholders and with BACCC leadership. A survey was sent to all 28 BACCC colleges regarding this project, and 21 of those colleges responded. Participating colleges pledge to teach at least one course with this solution over the pilot period and to collaborate to co-develop sustainable funding and management solutions in the future.
Momentum points
MP 15. Completed two courses in the same CTE Pathway
MP 16. Retention rate between Fall and Spring within a CTE pathway
MP 18. Completed a CCCCO-approved certificate within a CTE pathway
MP 23. Completed an associate degree in a CTE major
MP 29. Acquired an industry-recognized, third-party credential

Use of Indicators
The remote lab implementation allows the collection of key statistical information that includes “time on task”, configuration and log files for the networking labs, and assessment and reflection items that students must complete when doing their lab work. This regional NETLAB will be a central repository for the collected data needed to meet our momentum points on course completion and retention.

Partner colleges, along with the Project Outreach Coordinator, will participate in the collection of data on awarded certificates and degrees.

Partner colleges, along with the Project Outreach Coordinator, will make an extra effort to collect anecdotal data on students acquiring an industry-recognized, third-party credentials.

Student Employment Outcomes
Yes. Academic transfer, degree or certificate completion is often not even a student goal in ICT related CTE programs. Skills-builders acquire in-demand knowledge and skill sets to get jobs and advance in their careers. They often acquire industry certifications, which we cannot track, but which are highly valued by employers. Knowing the impact of CCC ICT education and workforce development on CCC ICT students’ employment status, wages, and industry certification attainment would be extremely valuable in assessing CCC ICT program performance and economic impact.

Ready for Certification
This proposal is certified as being compliant with the Enhancement Fund’s requirements

Name of Project Director providing above Certification
Gerlinde Brady

Email address of Project Director
gebrady@cabrillo.edu

Name of college’s CEO, CIO, or CBO providing above certification
Kathleen Welch

Title of CEO, CIO, or CBO providing above certification
Assistant Superintendent, Vice President of Instruction

Email address of CEO, CIO, or CBO
kawelch@cabrillo.edu
CTE Enhancement Fund College Contacts

Name of your college
Cabrillo College

Name of your district
Cabrillo CCD

Region you belong to
Bay

Name of your College President or Designee
Laurel Jones

Title of your College President or Designee
President

Email address of your College President or Designee
rock@cabrillo.edu

Phone number of your College President or Designee
831-479-6302

Name of your CEO/College President or Designee's Assistant
Cheryl Romer

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Name of your College Chief Instructional Officer/Vice President of Instruction
Kathleen Welch

Title of your College Chief Instructional Officer/Vice President of Instruction
Vice President Instruction

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Title of the Primary Contact
Dean

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Name of the Person Responsible for Data Entry
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Title of the Person Responsible for Data Entry
Accounting Specialist

Email Address for the Person Responsible for Data Entry
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Phone Number for the Person Responsible for Data Entry
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Name of the Chief Business Officer or Designee
Victoria Lewis

Title of the CBO/Designee
Vice President Administrative Services

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Phone Number for CBO or Designee
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Name of the person responsible for budget certification
Shelley West

Title of Person Responsible for Budget Certification
Accountant

Email address for person responsible for budget certification
shwest@cabrillo.edu

Phone number for person responsible for budget certification
(831) 477-5645
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**Total College Allocations**: 999,368

**TOTAL BY OBJECT CODE**: 999,368

**Worksheet Tab**: College

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<th>Total Budgeted by College (from College sheet)</th>
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TOTAL COSTS: 999,368