

**Massachusetts Skills Capital Grant Program
APPLICATION
COVER PAGE**

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Grant Proposal Summary Information		
Project/Program Name:	Cyber Savvy: Increasing Access to Careers in IT Cybersecurity	
Grant Amount Requested:	\$ 117,086	<input type="checkbox"/> New Program <input checked="" type="checkbox"/> Existing Program
Brief Project Description: In this space, provide a concise (no more than 200 words) summary of the proposed project, including the target industry and population, description of the training provided, and what equipment will be purchased and installed.		
<p>MCC seeks to expand the training capacity for the rapidly growing program of IT Cybersecurity in the high demand/high wage STEM field of Information Technology. To meet the demonstrated demand for course offerings, the IT Cybersecurity program needs new lab space at the Lowell Campus to increase access at this location through a dedicated lab that is operated independently of the college's regular IT systems in order to protect the integrity of college systems. Components include: CISCO Networking and Security System bundles, VMware components, and a NETLab system. The new lab will require the development of a dedicated lab space with appropriate computers as well as hardware and software specific to the cybersecurity instruction. Students who complete the IT Cybersecurity program will be prepared for employment in a range of industries because cybersecurity applications are critical to protect sensitive information and systems in finance/accounting, operations/logistics, human resources, and healthcare. Students who complete the program will be ready to take the exams for CISCO Certified Network Associate I and II, and CISCO CCNA Security Certification, valued industry credentials. Students who complete the AS degree will be ready to assume entry level positions in network security administration, primarily as Information Security Analysts.</p>		

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PROPOSAL NARRATIVE

1. Applicant Description

Provide a concise description of the Lead applicant and the project.

Middlesex Community College (MCC) is one of the largest community colleges in Massachusetts enrolling more than 13,000 credit students and 7,000 noncredit students annually. Operating from two campus locations, its original site in suburban Bedford and an urban campus in Lowell, MCC is recognized as a leader in the delivery of high quality programs that connect workforce development opportunities to credit certificate and associate degree programs for career preparation and transfer to further education.

In the heart of one of the most concentrated technology regions in the country¹, MCC has responded to the workforce demand with outstanding programs in high demand/high wage fields including information technology, advanced manufacturing and biotechnology. MCC is requesting support for its IT Cybersecurity program through this MA Skills Capital Grant in order to keep pace with the growing employer and student interest in this field.

Multi-year figures for MCC information technology programs indicate that for the areas of Computer/Software & Networking, IT General Studies Concentration and IT Transfer Concentration total enrollments were 164 students in FY12, 190 students in FY13, and 174 students in FY14. Recent data² on verified employment related to these programs show that on average 75% of the graduates of MCC's Computer and Information Sciences programs are employed at a median salary of \$37,900 after graduation. MCC revised its IT curriculum into a new configuration that reflects the rapidly growing concern with cyber threats and the new IT Cybersecurity degree replaces previous programs in IT and Computer and networking systems. MCC's IT Cybersecurity Associate's degree program is one of only two at a community college in Massachusetts. Now in its first year in operation, the IT Cybersecurity program has more students than projected thus necessitating expansion to an additional lab.

2. Project Overview. Please describe the following:

Target Population(s):

- What is the career technical education program that the equipment will support?

This request will support an innovative, high demand STEM program, IT Cybersecurity, that addresses skills that can be applied in a variety of settings and will meet a rapidly growing and well demonstrated need in the MCC service region. The program prepares students to enter the workforce or for transfer to a baccalaureate or graduate degree in IT. MCC began offering this program as a credit Associate's degree program in Fall 2015.

- What is the geographic area you are proposing to serve?

The MCC service area is generally Middlesex county that reaches as far south as Cambridge and Natick, includes Lowell in the north, Boxborough to the west and part of the Merrimack Valley region to the east.

- What are the target populations that the program will serve?

This program offer critical career opportunities to a range of potential students and will recruit graduates of area high schools and vocational high schools as well as adults who are interested in training options in high demand fields.

Use of Grant Resources:

- Describe the equipment to be purchased.

For IT Cybersecurity, a dedicated computer lab will be created to be allow hacking/simulations to take place outside of college systems. IT Cybersecurity equipment to be purchased includes:

- **CISCO Networking and Security Systems** with CCNA Security Bundles, CCNA Routing and Switching Bundles, and mounted heat pump air conditioners. The CISCO Networking and Security bundles will provide the infrastructure required to support instruction of students in developing, installing and programming complex network systems that can securely and reliably handle all types of traffic, throughout the intranet and extranet network, over virtually any media, while providing consistent service delivery to all users. The CISCO security bundles will enable students to build, rebuild, repair, troubleshoot and program network security systems;
- **VMWare** with Dell R630 Server with Hardware and VMWare system software. VMWare includes hardware and software, a

¹ With total employment of over 800,000 throughout Middlesex county, there are 7,478 technology firms and 185,377 technology jobs (source: US Bureau Of Labor Statistics, 2014).

² Massachusetts Department of Higher Education; Employment After College, Preliminary Campus Data, 2016.

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server with CPU, memory, input/output devices and Hypervisor software. This allows the instructor to set up many different virtual machines with different operating systems in a virtual environment. The systems mirror those that students will experience in the external work environment. The VMware cloud-based, on-demand, multi-platform lab environment enables students to work with a variety of operating systems set up by the instructor to practice skills learned in class in preparation for applying these skills in an operational environment; and

- **NETLab** hardware and software to make it possible to configure a simulated lab environment for the classroom by combining VMWare with the CISCO pods. The NETLab system is a remote and local access solution that allows academic institutions to host real IT equipment, virtual machines and a wide variety of curriculum content options. NETLab includes hardware and software that makes it possible for the instructor to configure a simulated lab environment for the classroom by combining VMWare with the CISCO pods. Connection sharing allows instructors and students to share the console of a virtual machine, router, switch, or firewall. A built-in chat client allows users to communicate. Remote access is integrated with lab content. Users point and click on lab diagrams to remotely access a virtual machine or lab environment. Students will be able to gain hands-on experience from local or remote connections. NETLab supports students in building a network, securing the environment, mitigating threats and ethically hacking for testing purposes.

- **Supporting Equipment** - Associated workstations and computers, classroom projectors and projection screens.

- Is the equipment industry-specific? If so, does it meet current industry standards?

Yes, the equipment is directly related to the industry areas/disciplines and reflects current industry standards.

- Did any industry and/or employer partners provide input on what relevant equipment they need?

MCC's IT Cybersecurity program has had extensive employer and industry input in the development of curriculum and advice on program implementation through program Advisory Boards and focus groups convened to engage industry experts and employers.

- To what extent does the equipment meet exact specifications to what a current employer needs and is on their own shop floors?

Because there are numerous employers involved, the equipment purchases respond to the overall need and can be adapted to various situations and applications.

3. Project Questionnaire- Applicants must answer all of the questions below.

A. Demand Driven (20 Points):

1. Which target occupation(s) does the applicant provide training for?

MCC's IT Cybersecurity program conforms to the National Initiative for Cybersecurity Education (NICE) framework for academic programs, developed jointly by the National Security Agency (NSA) and the Department of Homeland Security and thereby represents highly credible industry standards. This program will prepare students for CISCO Certified Network Associate I and II, and CISCO CCNA Security Certification exams which are valued industry credentials. Upon completion of the program and these credentials, students will be ready to assume entry level positions as Information Security Analysts (SOC Code 15-1122) in network security administration, as well as Network and Computer Systems Administrators (SOC code 15-1142), or Computer Network Support Specialists (SOC Code 15-1151).

2. How did applicant determine that there are, or will be, a sufficient number of vacancies in these occupations to meet placement goals?

Data from the MA Dept of Employment and Training supports the expansion of the IT Cybersecurity program in the Greater Lowell WIA as indicated by an increase of 24% (30+ positions) between 2012-2022 for Computer Network Support Specialists at a mean salary of \$74,222 and an increase of 26% (20+ positions) for Network and Computer Systems Administrators at a mean salary of \$92,587. Information from Mass.gov; Employment and Wages (ES-202) cited in the MNREB Strategic Plan projects that Metro North employment in IT occupations that require an associate's or less will experience a 16.9 percent growth by 2020. IT occupations that mostly require bachelor's degrees, but may accept individuals with an associate's, will experience a 27.4 percent growth in Metro North by 2020. State level data from the MA Dept of Employment and Training indicates an anticipated increase of 39% (1000+ positions) from 2012 to 2022 for Information Security Analysts, the job most closely matched with the IT Cybersecurity program. Data at the national level shows that industries outside of IT that are experiencing rapid growth for cybersecurity include finance, healthcare, and retail; cybersecurity positions are growing 3x as fast as openings for IT generally.³

³ "Job Market Intelligence: Cybersecurity Jobs, 2015" Burning Glass Careers in Focus, pg. 1; A 2014 Burning Glass report revealed 12,520 IT positions open in Massachusetts for candidates with an Associate's degree or lower

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3. Does the program have active employer partners with identified workforce needs? If yes, please identify and describe the partnerships.

The program has an active advisory board of local industry partners who gave input on the program's curriculum as well as the need for the program's need to fill vacancies. Presently the IT Cybersecurity Advisory Board includes representatives from The MITRE Corporation, BAE Systems, MA State Police Computer Crime Unit, MA State Police Crime Scene Unit, Percipient Networks, LLC., MIT Lincoln Laboratory, ADA, BlackBaud, and EMC. The college also has established strong industry connections through the addition of two positions, a job placement specialist and internship coordinator. These positions work with our students and local industries for job and internship placements.

4. Does the program have plans for growing employer partners and their participation in the program that will be supported by the new equipment?

The program will continue to engage employer partners in the program's advisory board. We review the board's participation annually and add partners. The work of the partners involves input on curriculum and equipment. In addition the college operates a STEM pathways center that conducts several annual career fairs which recruit local industry and seek to link our graduates with employers.

B. Leverages Partnerships (15 Points): Provide evidence that the program the equipment will support is operated in close partnership with other organizations in the region, to increase the program's reach and capacity.

All of MCC's STEM programs cultivate relationships and pathway development with area high schools and vocational technical schools. The IT Cybersecurity program will recruit students from Information Technology and Computer Science programs such as that offered at Minuteman Technical High School in Lexington or the programming and Web Development Program at Greater Lowell Technical High School. Furthermore, the IT Cybersecurity program is geared towards aligning as a transfer program to area baccalaureate and graduate institutions, such as that at UMASS-Lowell, as well as the MassTransferBlock.

The development of the program curriculum itself was done in partnership with the University of Massachusetts-Boston's "Broadening Advanced Technological Educational Connections" (BATEC) project through NSF's National Center for Computing Technologies program. BATEC provided experts in the field who worked closely with MCC faculty and industry partners to develop the degree curriculum. This process ensured that the curriculum was educationally sound, consistent with industry and national standards (i.e. the NICE frameworks (consistent with the National Security Agency and the Department of Homeland Security priorities), and addresses employer needs.

MCC's IT Cybersecurity lab has been modeled on those at other educational institutions who are leaders in this field, specifically Moraine Valley Community College in PA. MCC's lab would be unique to the region and so offer a template for other institutions in Massachusetts as well as a resource for possible industry and non-credit trainings. Advisory Board partners would be essential in outreach for this purpose.

C. Reflects Regional Plans (10 points):

1. Describe the extent to which the program correlates to training and employment outcomes defined by the Regional Workforce Investment Board plan for the applicant's area.

MCC's service area is served by overlapping workforce investment areas, primarily Greater Lowell WIA and Metro North WIA. Information Technology is one of five priority industries/occupations targeted by the Metro North REB for concerted efforts and development due to the prominence and opportunities for growth in this field thereby underscoring the importance of MCC's program. The regional local quotient (measuring the relative concentration of sectors compared to the overall context of the state) rated Professional and Technical service at 1.69 and Information also at 1.69 for the Metro North region. The Greater Lowell WIA also highlights IT as a priority sector with one of the five key issues for 2015-2016 to be "Developing and expanding partnerships with the Information Technology/Computer Science sector." According to MA Department of Labor and Workforce Development labor market information and projections for 2014 to 2016 for the Greater Lowell area the Information sector will add 117 more jobs for a 3.2% increase.

2. Describe the applicant's experience working with regional planning organizations and/or education providers to inform program design.

The IT Cybersecurity program is a direct outgrowth of collaborative partnership work that MCC's Information Technology department undertook with UMASS-Boston and its "Broadening Advanced Technological Educational Connections" (BATEC) project funded through the National Science Foundation. BATEC's efforts in curriculum, outreach, and research reflect the demands of the 21st century workplace with curriculum development using an approach that is authentic and centered on a team-based approach, with educators and industry partners working together to explore emerging technologies.

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D. Maximizes Increase in Skilled Workers and Supports Chronically Un/Underemployed (20 points):

1. What are the current outcomes of the program (if currently operating)?

The IT/Cybersecurity program at Middlesex Community College seeks to graduate students who are able to configure and maintain secure enterprise networks, detect and analyze security vulnerabilities and incidents on a system or network, determine technological or operational weaknesses that allowed the incident to occur and in response, develop appropriate mitigations to prevent further incidents.

Specific learning outcomes for the program are that our students will be able to:

- securely configure and operate an enterprise computer network (to include infrastructure devices, network services and the servers upon which they run).
- effectively work with others to design, develop, evaluate and present solutions to network security problems.
- update their skills when new cybersecurity challenges are presented.
- analyze problems, gather appropriate data, use logic to solve, predict and analyze results for relevance, accuracy and consistency.
- recognize solution patterns of common problems and apply them to new challenges.
- communicate clearly, accurately and succinctly through written and verbal means.

2. To what extent will this grant increase the capacity of the program to serve more students? Explain how the grant funding will provide for one or more of the following:

i. An increase in the number of students who are able to participate in an *existing* Program;

Grant funding will allow us to increase the number of students who can participate in the IT/Cybersecurity program which began in Fall 2015. Current lab capacity is 18 students and allows us to run two classes concurrently for the first year courses which results in a program capacity of 36 students per curricular year. This program is an open enrollment program and our fall enrollment for the new IT cyber security program was larger than anticipated at 49 and has increased this spring to 68. Fall and spring courses were scheduled in courses outside the main lab to accommodate the students but this is not ideal. MCC anticipates an additional 50 first year students for Fall 2016 and will need additional lab space to accommodate these students as well as our second year students. In addition to new students there are an additional 91 students who began in our former IT programs who may opt to move to ITCS. The new lab will allow us to accommodate these students as well as students who are interested in the Cybersecurity certificate which is under development.

3. Describe the enrollment and completion goals for the program if awarded the equipment grant by completing the chart below.

Training Program / Occupation	Current Annual Capacity (# of seats) in your program (0 if new program)	Increase in capacity as a result of this grant, if applicable
IT/ Cybersecurity transfer	72	144

4. Please demonstrate the proposed program will lead to employment for trainees.

a. Describe past evidence of job placement for graduates from the program.

Since this is a new program, information will be projected by our historical placements in related programs that were rolled into the new IT cybersecurity program such as our former general IT and networking (CSNT) programs. As cited in section 1, 75% of graduates are employed at a median salary of \$37,900.

b. Describe expected job placement rate for the new or expanded program.

Since Associate degree programs in Cybersecurity are few, our students will be competing with graduates of general IT programs and the cybersecurity focus should result in an edge. The need for qualified cyber security workforce is wide reaching because these positions are needed in all industries to support IT infrastructure and functioning, not just in the IT industry.

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For Additional Points:

5. Does the program include training of underemployed and unemployed individuals, including individuals with barriers to employment?
 - a. What is the strategy to recruit underemployed and unemployed individuals? How does the applicant recruit/screen individuals (if applicable)?

MCC is now developing a cybersecurity certificate (proposed 30 credits) based on the Associates degree program focused on serving individuals who need retraining to reenter the workforce. Middlesex has several resources to help these individuals. First, MCC has staff, College and Career Navigators, who work with students in the regional career centers to assist them in accessing educational programs such as IT Cybersecurity program. In addition, these Navigators assist these individuals in “navigating” college resources such as tutoring or the STEM Pathways Center that the college established as a disciplinary-based student support center. Resources such as tutoring, career assistance and study space, computers and study groups are available for students to enhance their chances of success.

E. Leverages other state, federal or private funding (5 points): Please describe extent to which the program has been able to leverage other funding sources.

IT Cybersecurity curriculum is the direct result of MCC’s partnership with UMASS-Boston’s NSF funded BATEC program that provided expertise and faculty stipends to develop the associate’s degree curriculum. A one-year credit certificate is in development now through funding from MCC’s USDOL TAACCCT grant (round 4), Guided Pathways in STEM (GPSTEM) grant.

F. Builds on Proven Programs (20 points):

1. Please describe the program’s track record of high quality and consistent results, or how this funding proposal is based on other programs that have achieved such results.

As cited earlier the IT Cybersecurity AS program is built on the National Initiative for Cybersecurity Education (NICE) framework for academic programs, validated by the National Security Agency (NSA) and the Department of Homeland Security.

2. Please describe the applicant’s ability to successfully implement new initiatives and expend grant funding on a timely basis.

MCC has received numerous grants for both equipment as well as program development and implementation and has successfully implemented these projects. The purchase of equipment for health programs was supported by a USDHHS Human Resources Services Administration (HRSA) grant (2010) that purchased equipment for Nursing and Allied Health programs; a USDOL TAACCCT (Round 1) supported the development of a medical Lab Technologist laboratory/classroom. MCC is a recipient of Perkins Postsecondary funds that both equipment as well as distinct projects related to career and technical education.

G. Sustainability (10 points): Does the school/institution have a capital/operating plan for financing the ongoing maintenance and/or future replacement of the equipment?

MCC is a financially stable institution with a successful track record of purchasing, renovating, preserving, and maintaining its physical infrastructure. The college receives an annual state allocation as well as raising funds through tuition and fees and also institutional fundraising activities including grant awards and additional contracts. An annual budget is developed by the VP of Administration and Finance/CFO and approved by the MCC Board of Trustees with a careful eye to sustaining foundational college activities and resources. Technology maintenance and replacement is incorporated into the college’s budgeting and planning. As a high demand program that has reached full capacity, the IT Cybersecurity program will help to ensure strong enrollments and fiscal stability for the college.

4. Timeline for Project Plan- Please identify each activity that you will engage in during the program period.

Please provide a projected timeline for purchasing and installing the proposed equipment by June 30.

- EOHED announces awards and contracts executed – March 2016;
- Communication with vendors commences, prices confirmed and orders placed – March/April;
- MCC identifies classroom for conversion/upgrade to IT Cyber security lab – April;
- MCC undertakes facilities preparation for installation and lab - April;
- Equipment onsite and installation in prepared classroom/lab takes place – May-June.

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5. Budget submission:

A proposed grant budget should be prepared using the form below. Applicants should be able to outline specific equipment purchases to be made with this grant as well as estimated costs of installation and/or related costs. Total in proposed budget worksheet should equal total grant request.

Match Commitment: In this section, discuss your match commitment, if available and applicable. Match is not required but is strongly encouraged.

This project has used significant matching resources to reach its current stage. Support and involvement from BATEC at UMASS Lowell has contributed \$25,000/year on average for two years to create a strong curriculum for MCC's AS degree program. MCC's involvement in a statewide US DOL TAACCCT (Round IV) grant to community colleges, GPSTEM, was used in December 2015 to purchase cybersecurity equipment currently at the Bedford campus at a cost of \$93,726 and will also support the develop of the briefer one-year certificate during the coming year.

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PROPOSED GRANT BUDGET

The chart below is an embedded excel worksheet. Double click to open. Please outline specific equipment purchases that would be made with this grant, including any related installation costs. Add rows, as needed.

Middlesex Community College				
Equipment Purchases				
Item Description	Vendor	Quantity	Cost/Item	Total Cost
NETLAB PE Software	NETLab	1	19,995	19,995
Annual support services that include software upgrades, technical support, and server restoration	NETLab	2	2,995	5,990
Cisco 2901 w/2 GE,4 EHWIC,2 DSP,256MB CF,512MB DRAM,IP Base	NETLab	1	739	739
16-Port Async HWIC	NETLab	3	851	2,553
APC Switched Rack 1.8kVA PDU - 8 x NEMA 5-15R - 1.8kVA - 1U 19" Rack-mountable	NETLab	3	450	1,350
Catalyst 2960 Plus 48 10/100 + 2 T/SFP LAN Base	NETLab	1	924	924
8 Lead Octal Cable 68PIN TO 8 MALE RJ45S 10ft	NETLab	6	60	360
Shipping				249
CCNA Security Bundles				
CCNA Network Pods - Sec2960-3: 3x 1841 routers; IOS 15.x + CCP2 .x software; 3x2960 switches; ASA5505 security device	Ciscoland.com	6	900	5,400
NP-3560-2960 pod: 2811 router; 2x3560 switches; 2x2960 switches; 3x1841 routers; IOS 15. x operating system; CCP 2.x Cisco Certified Professional Software	Ciscoland.com	3	950	2,850
CCNA Routing and Switching Bundles				
One bundle of 12 routers, 12 switches, interface cards, cables	Ciscoland.com	1	3,015	3,015
2600 Access routers with NM-16A Module	Ciscoland.com	6	240	1,440
NM-16A Module that sits in router	Ciscoland.com	6	150	900
Octal cables connect modules to switching and routing bundles	Ciscoland.com	12	40	480
Mitsubishi 2400 BTU Mseries wall mounted heat pump air conditioners - 2 required for designated space	Ciscoland.com	2	3,175	6,350
Dell R630 Server with Hardware and VMWare system software				
PowerEdge R630 server includes chassis with up ro 8, 2.5" hard drives, software RAID, up to 2 PCIe slots (with optional riser); 2 servers are required to provide lab capacity and to ensure continuity and fault tolerance	VMAP VMAS webstore	2	2,731	5,462
Processor: Intel® Xeon® E52630 v3 2.4GHz,20M; Cache,8.00GT/s QPI,Turbo,HT,8C/16T (85W); Max Mem 1866MHz	VMAP VMAS webstore	2	431	862

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Additional Processor:Upgrade to Two Intel® Xeon® E5-2630 v32.4GHz, 20M Cache ,8.00GT/s QPI,Turbo,HT,8C/16T (85W); this processor accommodates more sockets on the motherboard	VMAP VMAS webstore	2	699	1,398
Memory Capacity for storage: 16GB RDIMM, 2133MT/s, Dual Rank, x4 Data Width	VMAP VMAS webstore	32	275	8,800
Hard Drives: 1TB 7.2K RPM SATA 6Gbps 2.5in Hotplug Hard Drive	VMAP VMAS webstore	16	338	5,408
Network Daughter Card:Intel X520 DP 10Gb DA/SFP+, + I350 DP 1Gb Ethernet, Network Daughter Card; 2 per server; 4 total	VMAP VMAS webstore	4	405	1,620
Bezels for Rack Rails	VMAP VMAS webstore	2	70	140
vCenter Server to manage vsphere software	VMAP VMAS			
PowerEdge R630 server includes chassis with up ro 8, 2.5" hard drives, software RAID, up to 2 PCIe slots (with optional riser)	VMAP VMAS webstore	1	2,731	2,731
Processor: Intel® Xeon® E52630 v3 2.4GHz,20M; Cache,8.00GT/s QPI,Turbo,HT,8C/16T (85W); Max Mem 1866MHz	VMAP VMAS webstore	1	431	431
Memory Capacity for storage: 16GB RDIMM, 2133MT/s, Dual Rank, x4 Data Width	VMAP VMAS webstore	8	275	2,200
Hard Drives: 1TB 7.2K RPM SATA 6Gbps 2.5in Hotplug Hard Drive	VMAP VMAS webstore	8	338	2,704
Network Daughter Card:Intel X520 DP 10Gb DA/SFP+, + I350 DP 1GbEthernet, Network Daughter Card	VMAP VMAS webstore	1	405	405
Bezels for Rack Rails	VMAP VMAS webstore	1	70	70
MISC				
Vmax 2 Projection Screen, MaxWhite, 4:3, 100in (Free Mount after MIR), Mfr. Elite Screens, Item # 8869763, Manuf. Part # VMAX100XWV2	GovConnection	1	315	315
Powerlite 430 XGA LCD Projector with Speaker, 3000 Lumens, White Epson Projectors	GovConnection	1	817	817
HP ProBook 6560b Core i5 2450M / 2.5 GHz - Windows 7 Professional 64-bit - 4 GB RAM - 500 GB HDD - DVD	Continental Resources	19	899.	17,081
Tables, Text Series, Seminar Leg, Adjustable 26-34Height. 20x72x7/8 Laminated Particleboard Top with 2-7/8 Twin Wheeled, Swivel, Locking Caster; 4 pack	Virco	19	188	3,572
Chairs, Civitas Series, 4 leg, Stackable, 18" Seat height, ergonomically contoured plastic seat, steel frame,	Virco	19	14	266
		19	69	1,311
	Total Equipment:			\$ 108,188

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Installation/Other Expenses				
Description of Expense				Estimated Cost
Support and subscription for 2 years support service				6,800
Subscription and support required for vCenter Server for 2 years				2,098
Total Installation/Other:				\$ 8,898
Total Requested				\$117,086