



**Broadband Non-Infrastructure Application
Submission to NTIA – Sustainable Broadband Adoption**

Submitted Date: Easygrants ID: 6827	
Funding Opportunity: Sustainable Broadband Adoption	Applicant Organization: OHIO STATE UNIVERSITY, THE
Task: Submit Application - Sustainable Broadband Adoption	Applicant Name: Dr. Jayashree Ramanathan

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A. General Application Information

Applicant Information	
Name and Federal ID for Applicant	
DUNS Number	832127323
CCR # (CAGE)	5QH98
Legal Business Name	OHIO STATE UNIVERSITY, THE
Point of Contact (POC)	RICHARD BRADBURY 6146888125 Ext. bradbury.1@osu.edu
Alternate POC	ROGER BIGELOW 6142921422 Ext. bigelow.1@osu.edu
Electronic Business POC	RICHARD BRADBURY 6146888125 Ext. bradbury.1@osu.edu
Alternate Electronic Business POC	ROGER BIGELOW 6142921422 Ext. bigelow.1@osu.edu

Name and Contact Information of Person to be Contacted on Matters Involving this Application:	
Prefix	Dr.
First Name	Jayashree
Middle Name	
Last Name	Ramanathan



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Suffix	
Telephone Number	16146885390
Fax Number	
Email	stein.235@osu.edu
Title	Director of Research, CETI

Additional Contact Information of Person to be Contacted on Matters Involving this Application:

Project Role	Name	Phone	Email
Secondary Point of Contact	Dr. Bob , Horton	6142478150	horton.2@ohio4h.cfaes.ohio-state.edu

Other Required Identification Numbers	
Easygrants ID	6827
Funding Opportunity Number	500001
Catalog of Federal Domestic Assistance Number	BTOP CFDA Number: 11.557 BTOP CFDA Title: Broadband Technology Opportunities Program

Organization Classification	
Type of Organization	Non-profit Institution
Is the organization a small business?	No
Does the organization meet the definition of a socially and economically disadvantaged small business concern?	No



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Authorized Organizational Representative	
AOR	BRADBURY, RICHARD
Result	Applicant Authorized

Project Title and Project Description

Project Title: Power3 (read as Power cubed) an mentoring alliance between Academia, Business and Government

Project Description: Applicants develop, implement and test an innovative and replicable mentoring program using the Internet and cloud computing to advance science, technology, engineering and math education. Academic, business and public services collaborate on community issues with disadvantaged youth. The goal is to increase adoption rates by involving residents from an area in which broadband adoption is low.

Other Applications

Is this application being submitted in coordination with any other application being submitted during this round of funding?

- No

Easygrants ID	Project Title

If YES, please explain any synergies and/or dependencies between this project and any other applications.

Is the Applicant exempt from the Department of Commerce requirements regarding individual background screening in connection with any award resulting from this Application?

- Yes, Applicant is exempt because it is an accredited college or university

If the answer to the above question is "No," please identify each key individual associated with the Applicant who would be required to complete Form CD-346, "Applicant for Funding Assistance," in connection with any award resulting from this Application:



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Name	Title	Employer

B. Executive Summary, Project Purpose and Benefits

Essay Question

Executive Summary of the proposed project:

a) Power3 is a e-tech mentoring program linking college students with disadvantaged youth. It includes a community based tool for registering micro-projects to strengthen science, technology, engineering, and math education among the future workforce. At the same time it improves access to broadband service and application by building critical thinking skills. The collaborative and comprehensive nature of this project limits the potential funding to the ARRA as a source for immediate implementation. While Power3 is consistent with objectives outlined in many policies, there is no other start-up revenue source that addresses the comprehensive nature Power3 that includes development of a matching/registration software (called “e11”), training and outreach efforts associated with deploying the mentoring program, or upgrading computing needs in non-profit computing centers so the youth have a place to work on the projects. All of these elements are required to support the goal of Power3 that introduces vulnerable youth to real world technical applications, encouraging them to further advance adoption rates among their peers. The value of replicating the program into other communities has incredible potential, but is not readily recognizable and most grants do not consider these long term return on investments in successful applications. Power3 is clearly aligned with the purpose of the Sustainable Broadband Adoption Program with regards to providing education awareness, training, access, equipment and support to vulnerable populations and sustainability. We have a two year goal of directly reaching 5,000 disadvantaged youth as well as an additional 2,500 users through their experience. In addition, the program uses 1,400 college students who will benefit from not only broadening their technology skills, but build leadership skills as they mentor the youths, while connecting with the business community and advancing employment opportunities through the micro-projects they develop.

b) There is no systematic framework for student learning and service to address the actual human needs of communities. The US is running out of the time to equip the workforce at large, and in particular disadvantaged communities, with science and technology skills. The US needs



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a duplicatable system within which academic, business, and public service organizations can easily collaborate to achieve goals. Power3 moves an idea from a thought to a solution by accessing existing resources from an array of partners as a three-way collaboration between businesses, academia, and the public sector. These solutions both contribute to and make use of open source collateral. The Power3 is based on a simple pyramid concept to propagate novel project ideas and skills by linking mentors at one level with two or three apprentices at a lower level within the context of an appropriately scoped micro-project. With a professional or academic scientist at the top, we will build a downward-reaching pyramid of mentors and apprentices. We will achieve the SBA objectives of expanding broadband by providing broadband-based mentored projects in a disadvantages area through schools, libraries, and public computing centers, and job creation by connecting college students talents with business defined needs. The program will fuel sustainable broadband adoption in every community in which it is implemented.

c) The targeted area includes neighborhoods in northeast Columbus. The area population is 222,000. Of these, roughly 37% are African American (3 times the proportion of the nation), per capita income is around \$20,200. The unemployment rate is 20% higher than the national average.

d) There are many partners and specific skill sets necessary to implement Power3. Project development relies upon partners at the Ohio State University (OSU) to build technical tools and coordinate the mentoring opportunities, the business community through TechColumbus to identify mini-project needs, and a regional partner in the Mid Ohio Regional Planning Commission (MORPC) to coordinate with other universities and communities to replicate Power3, and the Columbus Institute for Contemporary Journalism for enhancing micro-projects by providing access to its public computing center including media production facilities. Service learning is an explicit goal at OSU. Today, the search for collaborative opportunities occur in an inefficient ad-hoc way. The primary developer of Power3 is the Center for Enterprise Transformation and Innovation (CETI) within the college of Engineering. CETI is a National Science Foundation funded Industry-University Collaborative Research center for Enterprise Systems research. Its successes include mentoring best practices in Information Technology applications resulting in over 400 undergraduate and 40 graduate students, 140 micro-projects sponsored by over 35 business and government organizations over the last three years. TechColumbus is the technical business incubator in central Ohio. They partner with OSU, Battelle, Columbus Children's Research Institute, OhioHealth, 15 Fortune 1,000 companies, thousands of small and large tech-based and tech-enabled companies, and a large, growing young professional community. MORPC is the regional planning commission in central Ohio. It



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mission is to “be the regional voice and a catalyst for sustainability and economic prosperity in order to secure a competitive advantage for central Ohio”. They are established with the local governments, schools districts, chambers of commerce and universities. The Columbus Institute for Contemporary Journalism will provide access to its public computing center including media production facilities.

Operations of Power3 will rely on CETI, DataCenter101, the Ohio Cooperative Extension Service and the public computer centers in the area (see attachments). DataCenter101 operates a next-generation colocation facility. Their facility is maintained by licensed vendors. Their power, network and critical systems utilize N+1 architecture including real-time critical systems monitoring, results oriented customer support and 24/7 on-site Network Operations Center (NOC) staff. It has a near perfect average power factor of 0.99. The OSU Extension Outreach Center has a long history and provides informal educational programs for 7,800 people near OSU. Finally, the operational capacity of Power3 would be greatly enhanced by the successful award to other central Ohio ARRA broadband applications including the City of Columbus’s “Columbus Regional Comprehensive Community Plan.” That would enhance broadband access by completing a communitywide network, and the Connect Ohio NTIA-BTOF-SBA submission for providing training at public computing facilities.

Training and outreach partners include TechCorps, the 4H program at OSU, the OSU African American and African Studies-Community Extension Center (AAAS-CEC), the city of Columbus Public Access TV Station, WOSU Public communications, and the Columbus Institute for Contemporary Journalism. TechCorps connects technology to learning. Since 1999, they have placed over 500 technology volunteers who have assisted students and teachers in more than 300 Ohio schools and nonprofit organizations. TechCorps programs have impacted nearly 10,000 K-12 students in 23 Ohio counties. OSU- 4H is a non-formal educational youth development program. It extends into underserved communities in Columbus. AAAS-CEC provides community outreach and education programs enhance the educational opportunities Columbus's urban and minority communities. Media partners including Columbus Public Access and WOSU have committed to promote Power3, however other media will also be called upon to promote the program through public service announcements and general media. Perhaps the greatest outreach value is expected from the participants themselves through various social media outlets. Finally, the Power3 team will be working with JobLeaders/COWIC is a job training partnership operating a summer youth employment program that currently is using ARRA funds.



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e)Based on the CEA methodology 20 potential direct-job years can be created from the Ohio State University’s sustainable broadband adoption proposal. However, the effect on the future workforce will be much greater.

f)\$3.47 million total project cost with 56% cost (\$1.95 million) to sponsor and 44% (\$1.5 million) in-kind for developing a sustainable training and outreach best practice, enhancing pre-existing organizational infrastructures, training pilot assessment, continuous improvement, and promotion. In-kind match is in facilites, faculty time, student time, data center access, software, administration.

Project purpose:

There is an important difference between broadband availability and adoption. While Columbus Ohio and many other cities can boast close to 100% availability, adoption is significantly lower. Even in the most wired U.S. cities, roughly 30% of the population do not have high-speed access to the Internet. This segment of the population is currently missing out on opportunities to search for jobs, take online courses, monitor children's grades in school, watch a speech from a university and take part in online forums, to mention only a few examples.

We know from local surveys (http://www.connectohio.org/mapping_and_research/) that among those without access there is an over representation of low-income households with children, and the three most common reasons for a lack of service is 1) people do not feel they need broadband or don't understand the benefit, 2) they don't own a computer, and 3) it is too expensive. The patterns we see in terms of generational poverty now seem to be replicated in the Internet era, ultimately creating a segregation between wired and non-wired citizens. Ohio Governor Ted Strickland recognize that there is a real digital divide in Ohio, and that it takes many forms – from lack of access to computers, to a lack of skills necessary for the jobs of the future.

Certainly, these patterns are not unique to Ohio and poses a fundamental threat to the U.S. Economy and to our future as an international leader in technology and innovation.

This project addresses this challenge by aggressively targeting the non-connected segment of our community and developing a vehicle for effective use of existing computing resources, college faculty and students, service learning courses, University Extension and partnering with business and outreach organizations. We base our approach on following principles 1) mentored science and technology micro-projects provide relevant real-world service experiences for participants with different skill-sets and of different ages k-16, 2) a cyber infrastructure will facilitate this collaboration by effectively matching and managing needs and resources through geographic social networking for service that answers who does/needs what, where, and when?



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While social networking and Web 2.0 technologies have started to transform the way friends hang out (aka Facebook, MySpace) and people connect with potential customers/employers (aka LinkedIn), these technologies have far from reached their potential as a vehicle for matching community needs with existing assets. Some examples of matching websites can be found, from national (<http://www.volunteermatch.org/>), down to the local level (e.g. the OSU student union PayItForward website <http://payitforward.osu.edu/organization/>), but these remain information silos, patchy in terms of area or scope. Here, we propose an integrated solution for need/asset identification (who, what, where, when?), matching through trust, execution and delivery through mentorship, and an infrastructure for result and knowledge transfer.

Our program will provide a generic model for building an online community focused around youth but supported by service learning students from universities, community organizations, university extension professionals, business, and government. Key components in this proposed solution are 1) tight integration of service in college curricula 2) immersion in a problem area that benefit students' own schools, universities, businesses, or local and global communities, 3) guidance from a faculty/business supervisor and a vertically implemented mentorship model in which each student/youth work with a role model at the higher level and potentially mentoring three students at a level below – generating a Power3 pyramid magnification of service and learning activities, 4) a Cyber Infrastructure and project-wiki environment for the process management of community identification, practice, knowledge creation, assessment, and knowledge transfer. Thus, the Power3 will mainly build on existing resources to connect and integrate culturally, ethnically, professionally diverse communities striving toward excellence in science and technology projects. The proposed pilot will address the key thesis that it is possible to accelerate the regional development of cohorts around science and technology by using broadband and Cyber Infrastructure (CI) scaffolding at our country's universities. In particular, we seek to demonstrate and provide a template for Land-Grant universities leverage existing technology and resources to achieve maximum service and education with minimal support. By focusing on three areas in the Greater Columbus area we have a target population of approximately 222,000 people. Of these, roughly 37% are African American (3 times the proportion of the nation), per capita income is around \$20,200, and the unemployment rate in this area is about 20% higher than the national average. As such our program will provide education, training, and equipment to support increased use of broadband services by vulnerable populations. Through the mentorship model we will also engage area youth to expand their mindset beyond their neighborhoods, to see other worlds and opportunities, foster career building, and ultimately stimulate economic growth and job creation.



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Recovery Act and Other Governmental Collaboration:

This proposal complements but does not depend on other efforts, including:

- a) The Ohio State University - Service Learning Initiative (SLI). This program has been supported by OSU since 1998 in the form of awards and grants. Programatically, an award of approximately \$8500 is available for this program through the Service-Learning Scholars Roundtable. The program's goal is to engage students in teaching, research, and/or service activities, with particular attention to consideration of the role of service-learning as an effective strategy for engaging faculty, students, and community members in community-based teaching/learning/inquiry for the purpose of developing and maintaining collaborative university/community partnerships.
- b) The Third Frontier - an economic stimulus initiative advanced by the state of Ohio. Initiated in 2002, the Third Frontier Commission executes a ten year, \$1.6 billion project. The goal of the program is to expand research and technology using tech incubators (such as TechColumbus which is a partner on the Power3 proposal), and by supporting new products and firms in targeted business clusters.
- c) The city of Columbus Chamber of Commerce - through its strategic planning promotes workforce development, workforce retention and workforce readiness. The Power3 proposal addresses these goals.
- d) The Ohio STEM Learning Network (OSLN) - a public-private partnership aimed at building and connecting STEM (Science, Technology, Engineering and Mathematics) teaching and learning capacity in regions across the State of Ohio. Designed from a systems engineering approach, the OSLN is managed by the Battelle Memorial Institute. Objectives are in direct alignment with the Power3 proposal including enhancing STEM teaching and learning capacity and creating a network-based infrastructure that promotes and connects innovative, scalable and sustainable STEM initiatives.
- e) NSF STCI - The primary purpose of the Strategic Technologies for Cyberinfrastructure Program (STCI) is to support work leading to the development and/or demonstration of innovative cyberinfrastructure services for science and engineering research and education that fill gaps left by more targeted funding opportunities.
- f) City of Columbus NTIA-BTOP-CCI submission entitled "Columbus Regional Comprehensive Community Plan." The plan enhances broadband access by completing a communitywide network and deploying a public safety wireless mesh network.
- g) Connect Ohio NTIA-BTOF-SBA submission for providing training at public computing facilities. Power3 applications will complement these efforts to increase broadband use.
- h) JobLeaders/COWIC is a job training partnership operating a summer youth employment program using ARRA funds.

Technology Strategy:



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The overall technological approach will be to leverage existing technologies and overlay them in a next-generation cloud environment with foundations in interoperability, extensibility and sustainability. With these elements as a foundation, the applications will not suffer as project participation grows and scales to meet objectives of a particular community and in communities across the country. In addition, this will make access available to the widest spectrum of participants at all levels.

The architecture will be n-tier distributed processing using web application development techniques. The primary interface with the applications will be web browsers, or the evolving web application interfaces, including mobile interfaces. Applications and databases will reside in multiple datacenters with space provided by Partners in the project. The distributed architecture will give the applications scalability from the Pilot program through sustainability phases, and beyond. In addition, because this approach places processing at the data centers, it is also the most energy efficient method of implementing the technological solution.

Graduate students will implement the software solution (e11) using open source tools with Web 2.0 features like the wikis, blogs, social networking. The implemented features will support: 1) student registration, profiles, personal project spaces, and published pages; 2) browsing and selection of communities of interest, selection and assignment of mentors based on rules that take into consideration student age, background, previous experience, interests, previous mentorship experience, etc.; 3) a micro-project data base of new or on-going requirements provided by sponsors and related assets; 4) project tasking, scheduling and monitoring; 5) project review, monitoring of student progress; and 6) knowledge assets management, and automated monitoring of site statistics. This integrated software will result in a database of open source knowledge assets that are used and enhanced in future micro-projects. These knowledge assets will also be made available to and through other participating partner sites.

The architecture is illustrated in attachments. The actual database and content management systems will run on different servers provided by the partner data centers. We anticipate the use of a virtual server infrastructure so that scalability is enhanced. Access will be through a thin client. Security and privacy will be implemented and reviewed by experts. We will approach the implementation in three stages: 1) Pilot phase: Basic project pages, workflow management and mentor matching functionality; 2) Enhancements based on Pilot experience; 3) Longer term enhancements based on use within Power3 Program micro projects.

We will use open source components so that the projects will continuously add to the open source codebase.

Innovative Approach:



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The true innovation in the Power3 Program is the development of a systematic framework which creates collaboration among academia, business, and government to achieve community goals, and at the same time mentor students in (STEM) disciplines. This creates a ‘scaffolding’. Scaffolding is a proven instructional technique where an instructor models the desired learning strategy or task and shifts the tasks to the student. Scaffolding has been successfully applied by TechCorps to connect undergraduates and K-12 levels for teaching computer system maintenance skills. CETI has a prototype CI / broadband-based scaffolding software to support micro-projects in Information Technology. By engaging students in these micro-projects using Web2.0 it incentivizes them to adopt broadband for home use. Using cloud computing , social networking and collaborative tools, program use can spread users at an exponential rate. We will build upon this to develop an integrated scaffolding - organizational program (Power3) plus a complementary broadband-based (e11) scaffolding. This will use online social technologies, through a social approach (mentoring) that encourages participants to learn more about STEM, a by-product of which will be that each participant will make increasing use of broadband technologies. Our community partner (AAAS-CEC) points out that currently students at all levels are treated the same in a Science and Math program. Our approach will not only provide the partner with mentoring resources to separate the grade levels but also tie the student to say retirees or professionals with appropriate skills in other parts of the city. Traditional organizational approaches tend to obtain participation of one or two of these entity types—this approach fully engages all three. In addition, various community organizational approaches may not be able to see where various projects overlap, resulting in a waste of time and resources. Today’s piecemeal approaches take long to impact the pipeline, especially if it is leaky and re-entry is hard. We mitigate the risk by building primarily on previous efforts and the proven patterns and experience of the core team, since this information is carried through each project within the Program’s applications.

By participating in the Power3 mentoring program students are provided broadband education and access to equipment, thus increasing awareness of the benefits of broadband. The Power3 Program is ambitious due to its vertically integrative nature, collaborative project focus, and the use of the enabling socio-cyber infrastructure for scalability and acceleration of STEM. An implementation of this scale could not be attempted without federal funding.

Is the applicant seeking a waiver of the Buy American provision pursuant to section x.Q of the NOFA?

- No

Is the applicant delinquent on any federal debt?



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- No

If Yes, justification for delinquency:

- .

Are you seeking a waiver of any requirement set forth in the NOFA that is not mandated by statute or applicable law?

- No

C. Partners

Are you partnering with any other key institutions, organizations, or other entities for this project?

- Yes

If YES, key partners are listed below:

Project Role: Contractor Name: Nay, Aung Email: aung@techcorpsohio.org Address 1: 112 Jefferson Ave. Address 2: Address 3: City: Columbus State: Ohio Zip Code: 43215 Organization: Tech Corps Ohio Organization Type: Non-profit Corporation Small business: No Socially and economically disadvantaged small business concern: No
Project Role: Contractor Name: Nordstrom, Mary Email: MRNORDSTROM@columbus.gov Address 1: City Hall Address 2: Room 329 Address 3: 90 West Broad Street City: Columbus State: Ohio Zip Code: 43215 Organization: City of Columbus



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<p>Organization Type: City or Township Government Small business: No Socially and economically disadvantaged small business concern: No</p>
<p>Project Role: Sub-recipient Name: Rieland, Tom Email: RIELAND@WOSU.ORG Address 1: The Ohio State University Address 2: 2400 Olentangy River Road Address 3: City: Columbus State: Ohio Zip Code: 43210 Organization: WOSU Public Media Organization Type: Non-profit Corporation Small business: No Socially and economically disadvantaged small business concern: No</p>
<p>Project Role: Contractor Name: Cavener, Bradford Email: bcavener@morpc.org Address 1: 111 Liberty Street Address 2: Address 3: City: Columbus State: Ohio Zip Code: 43215 Organization: Mid-Ohio Regional Planning Commission Organization Type: Other Small business: No Socially and economically disadvantaged small business concern: No</p>
<p>Project Role: Sub-recipient Name: Wilks, Carla Email: wilks.1@osu.edu Address 1: 905 Mount Vernon Avenue Address 2: Address 3: City: Columbus State: Ohio Zip Code: 43203 Organization: OSU Department of African American and African Studies Community Extension Center</p>



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<p>Organization Type: Non-profit Institution Small business: No Socially and economically disadvantaged small business concern: No</p>
<p>Project Role: Third party in-kind contributor Name: Cavin, Gary Email: grcavin@columbus.gov Address 1: 1111 East Broad Street Address 2: Suite 300 Address 3: City: Columbus State: Ohio Zip Code: 43205 Organization: Department of Technology, City of Columbus Organization Type: City or Township Government Small business: No Socially and economically disadvantaged small business concern: No</p>
<p>Project Role: Third party in-kind contributor Name: Fitrakis, Robert Email: truth@freepress.org Address 1: 1021 East Broad Street Address 2: Address 3: City: Columbus State: Ohio Zip Code: 43205 Organization: Columbus Institute for Contemporary Journalism Organization Type: Non-profit Foundation Small business: No Socially and economically disadvantaged small business concern: No</p>
<p>Project Role: Third party in-kind contributor Name: Maynard, Charles Email: chuck@datacenter101.com Address 1: 101 East Town Street Address 2: Suite 301 Address 3: City: Columbus State: Ohio Zip Code: 43215 Organization: Datacenter 101, LLC</p>



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<p>Organization Type: For-profit Entity Small business: No Socially and economically disadvantaged small business concern: No</p>
<p>Project Role: Sub-recipient Name: Wright, Mindy Email: wright.7@osu.edu Address 1: 381 Bricker Hall Address 2: 190 North Oval Mall Address 3: City: Columbus State: Ohio Zip Code: 43210-1358 Organization: Service-Learning Initiative, The Ohio State University Organization Type: Non-profit Institution Small business: No Socially and economically disadvantaged small business concern: No</p>
<p>Project Role: Sub-recipient Name: LaMuth, Jacqueline Email: lamuth.2@osu.edu Address 1: Agricultural Administration Building Address 2: Room 4 Address 3: 2120 Fyffe Road City: Columbus State: Ohio Zip Code: 43210 Organization: The OSU Extension Organization Type: Non-profit Corporation Small business: No Socially and economically disadvantaged small business concern: No</p>
<p>Project Role: Sub-recipient Name: O'Kelly, Morton Email: okelly.1@osu.edu Address 1: 1036 Derby Hall Address 2: 154 B Oval Mall Address 3: City: Columbus State: Ohio Zip Code: 43210 Organization: OSU School of Social and Behavioral Sciences</p>



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Organization Type: Non-profit Institution
Small business: No
Socially and economically disadvantaged small business concern: No

Description of the involvement of the partners listed above in the project.

The overall allocation of the 100% of project costs is 56% to sponsor and 44% in kind. Development: There are 4 partners identified in development phase of the Power 3 proposal. They include CETI, OSU Extension, OSU Service and Learning, TechCorps. They will integrate existing practices and develop the methodology, complete e11 implementation to support the methodology (with monitoring, mentorship, micro-project selection, and micro-project development) between the college students and the school youth. The Development portion of the project is approximately 40% of the total cost of the project. The partners are contributing 23% in-kind of this amount. With this mentoring application approach the partners are next increasing their adoption rate of broadband service.

Operations: Partners include those entities providing computer or broadband support. This includes DataCenter101 as a datacenter provider, Mid Ohio Regional Planning Commission, which will provide metrics regarding broadband adoption rate successes, the Columbus Institute for Contemporary Journalism operates a public computing center including media production facilities for public access and training, and the community computing centers. This also includes CETI graduate students (with industry sponsors) that are already working on technology projects. This part of the project includes approximately 40% of the total cost of the project representing 20% of the in-kind costs. The in-kind contribution includes data center capacity, ongoing community partner capacity in terms of supervision, space and administration. The costs include upgrade of the community computing centers including non-profit centers, Columbus park and recreation sites, libraries and schools. This proposal includes providing updated equipment for the non-profit centers and the recreation centers, as well as increasing their broadband service if necessary. The libraries are part of another SBA ARRA application through the Ohio Library Information System (OLIN).

Training and Outreach constitutes about 20% of the project costs. Partners include OSU Extension's 4H program, AAAS-CEC, TechCorps, graduate students and undergraduates as trainers and mentors. These partners are responsible for training the college students on working with school youth and teaching the youth about computing skills (TechCorp), and through OSU-4H and AAA to provide mentoring assistance to the youth. The costs associated with this



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portion of the project include feet on the ground provided by community partners, undergraduates and graduates.

Supporting institutions: The initial institutions are OSU departments, Columbus State Community College, OSU Student Life, InfoOhio totake the knowledge assets and make them avaiable. JobLeaders to assist with potential job placement, and the City of Columbus in all of its capacities for providing broadband services, outreach and connecting with the students.

Promotions We plan to sponsor and mentor students in Media and Braodcasting of the Power3 progam successes. The Columbus City Media Services section is part of the city government and operates three cable television access channels. Media Services is equipped with professional broadcast studio and post production facilities. WOSU Public Media is a non-commercial non-profit public television and radio organization. WOSU programs two television stations and six radio stations covering 22 counties in Central and Southern Ohio.

D. Congressional Districts

Applicant Headquarters

- Ohio

Project Service States

Ohio

Project Service Areas

Ohio - 15

Ohio - 12

Will any portion of your proposed project serve federally recognized tribal entities?

- No

Indicate each federally recognized tribal entity your proposed project will serve.



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Have you consulted with each of the federally recognized tribal entities identified above?

No

E. Community Anchor Summary

Community Anchor Institution	
Schools (k-12)	1
Libraries	1
Medical and Healthcare Providers	0
Public Safety Entities	0
Community Colleges	0
Public Housing	0
Other Institutions of Higher Education	1
Other Community Support Organization	20
Other Government Facilities	2
TOTAL COMMUNITY ANCHOR INSTITUTIONS	25
Minority Serving Institutions	
Historically Black colleges and Universities	0
Tribal Colleges and Universities	0
Alaska Native Serving Institutions	0
Hispanic Serving	0



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Institutions	
Native Hawaiian Serving Institutions	0
TOTAL MINORITY SERVING INSTITUTIONS	0

F. Demographics

Will your proposed project be specifically directed to serve vulnerable population groups?

➤ Yes

If "Yes" which vulnerable population groups will your proposed project serve? Check as many as apply:

Hispanic

Black/African-American

Native Hawaiian or Pacific Islander

English as Second Language (ESL)

Disabled

Low Income

Unemployed

Youth

Other

Other: Somali population

Vulnerable Populations



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Through Power3, students will be matched with OSU students to work on projects using technology. Students will gain access to the internet through existing computer labs and be matched with their university student partner via innovative software, e11, being developed as part of this project. The base goal of this project is not to simply provide access to computers and the internet, but to use technology to solve problems with others over the internet, answer questions, find solutions, think critically and open their eyes to opportunity in a fun way with other young people. The pilot area selected for this project includes the near north, near east, and northeast neighborhoods of Columbus. This area has a high poverty rate and is proximal to OSU, allowing this program to advantage of established relationships. The target area extends to the near east neighborhoods to capture the benefit of a recently announced partnership between OSU and Columbus in economically distressed neighborhoods near the OSU East hospital, as well as include the data center that the city operates. Finally, the target area extends into the northeast neighborhoods and to the high concentration of Somali population living here and to engage opportunities the city of Westerville offers with their data center, as well as the potential to alert Otterbein University, located in Westerville, about the opportunity to replicate this program in its community.

Similar discussions have taken place with the city of Delaware that is located approximately 15 miles north of the target area and the location of Ohio Wesleyan University. In fact, a unique characteristic of central Ohio is the plethora of universities that are located here. With 24 universities and 120,000 college students within the region, there is an outstanding opportunity to replicate this program throughout central Ohio. The target area includes approximately 222,000 people. Of these, approximately 37% are African American (3 times the proportion of the nation), per capita income of \$20,200 (74% of the national per capita), and unemployment rate 20% higher than the national average in 2000 and in 2007. Current data relevant to national averages were not available for the target area. Data from the 2000 Decennial Census and ESRI 2008 Business Analyst data, and the American Community Survey show that unemployment and per capita characteristics have not improved in the area for many years. Other demographic sources were consulted to quantify the vulnerability of the children in this targeted area. According to the US Census, there are approximately 50,000 children living in the targeted area. Approximately 23% are in poverty, compared to 13% at the national level. Of nearly 20,000 children in this area that attend the Columbus City Schools, fully 65% of them are eligible for the free or reduced lunch program sponsored by the USDA for which families at 130% of the national poverty rate are eligible.

Accessibility



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This program will be using existing computing centers. There are approximately 24 community computing centers that operate as non-profit sites, 6 library branches, 6 recreation centers, and 52 schools. With the exception of the community computer centers, all facilities are in compliance with ADA requirements. The non profit centers represent approximately 20 percent of the neighborhood computer capacity. Approximately 11% percent of the overall population in the area has a disability, and approximately 2% of the children have a sensory or physical disability. Every effort will be made through the matching program to accommodate special needs requirements. In addition, as hardware and software needs are updated in the computing centers, the centers will be inventoried and recommended improvements will be identified to make these facilities accessible.

Other Languages

Columbus is second only to Minneapolis in the number of Somali in the nation. The targeted area selected for this project is home to at least 1/3 of the estimated 45,000 Somali who live in central Ohio. The percentage of Hispanic population is relatively low, approximately 2 percent. The Columbus City Schools are diverse, with 98 languages being spoken by students. They have an extensive ESL program in place to work with students. In addition, the city of Columbus has embarked upon an aggressive program through its Community Relations Commission to engage the various in the city. In addition, OSU is a world renowned university with a global student population.

While this could be viewed as a challenge, we see this as a great opportunity. Keeping in mind the long term goal of this program is ready the American workforce to be competitive and leaders in the global workforce. Central Ohio offers a microcosm of global cultures that very unique. And, because this in itself is part of the culture of the Columbus area, university, city and regional leaders have an established program platform in place upon which to build.

The Columbus Community Relations Commission was established in 1990 to help bring civic leaders, business leaders, citizens and elected officials together on issues of ethnic, racial and cultural diversity. This program has already established partnerships with the Columbus City Schools and OSU. This experience will be tapped to further extend outreach and cultural connections.

In addition, the Somali community is well structured through such organizations as Somali Community Access Network- SomaliCAN, and the Somali Community Association of Ohio both of which are advocates improving the health, safety, and productivity of New Americans in Ohio through culturally competent services, information and resources. MORPC, one of the partners in Power3 has sound connections with the Somali population especially through its



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outreach efforts associated with the 2010 Decennial Census. These relations will continue to be strengthened to promote the Power3 to engage the Somali population.

The OSU 4H and Extension services have well established programs in place, and they also are partners in the Power3 project. They, with others, will continue to be ambassadors to connect the university with the community and through their existing relations with neighborhoods, the Power3 project will become part of their curriculum.

The OSU College of Education and the Columbus City Schools have an established relationship. This relationship will be expanded to include other colleges for the purpose of community service coursework associated with Power3.

G. Project Budget

Project Budget	
Federal Grant Request	\$1,953,292
Total Match Amount	\$1,518,681
Total Budget	\$3,471,973
Match Percent	43.7%

Projects Outside Recommended Funding Range:



Sustainability:

Costs to support growth in program demand and enhancements are managed through : 1) institutional service learning courses at all levels, 2) scalability of the e11 to other cities and counties, 3) Power3 projects that improve Power3 itself as well as the e11 software, and 4) Cities commitment to maintaining community computing capacity. The very function of the OSU land grant mission is to support expansion into counties. This is achieved here by 'piggy backing' on the 4H program. We expect that the demand increase will be due to mentoring success. Our low end estimate is primarily 2500 new users every quarter, based on 700 students taking service credits per year times three students that are mentored. The real potential is that every year, each



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student will engage three others (the power of three) to participate, leading to exponential growth. The sustainability of this project is also due to the existing statewide network of 4-H Youth Development Educators and the Urban Metro Advisory Team. The 4-H Youth Development Educators support 4-H clubs in every county and have ready access to youth through the clubs and after school programs. The Urban Metro Advisory Team members are Extension Educators from all program areas who work in the state’s metropolitan counties. Because the Educators work at the county level, they provide the link to the community-based partner organizations needed to extend this project beyond the Columbus metropolitan area to other communities across the state. By working at the multi-county EERA network, it will be possible to identify and recruit the network of partners needed to engage government, business and academia in the expansion of this model to other parts of the state. This project also conforms to OSU’s President Gordon Gee goals and City of Columbus Mayor Coleman’s 2012 initiatives. These anchors and community centers are established program providers that are not being established specifically with these funds for this purpose. The project therefore taps into existing community structure.

However growth also needs to be sustained through specific funding. We plan to approach businesses to sponsor the program through funding contributions and fees. We also will explore the micro-financing of the micro-projects. An example is that a small business might fund and sponsor a team to put up a web site. A small percent of the amount would go towards sustaining the program. Using software as a service we can eventually provide the mentor matching services to other organizations for a fee. TechColumbus is the catalyst for technology-driven economic growth in Central Ohio. Their mission of helping to promote and attract the next generation of high-wage/high-growth industry sectors. They will help tie-in the business side to help the students learn, solve their micro-projects and help sustain the program.

Matching Funds	
Applicant is providing matching funds of at least 20% towards the total eligible project costs?	Yes
Describe the matching contributions	In-kind match is for 1) development, 2) operations, and 3) training and outreach as follows. 1) Development is through OSU Faculty time in methodology integration of successful K-12 and university mentoring methods, teaching pilot service courses over three years. This is estimated



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based on 16 courses over three years. In addition we have identified ongoing CETI graduate students working on industry sponsored projects (e.g. mobile applicaitons for local startups). This time designs and modifies current curriculum to develop the project mentoring scaffolding and training requirements, pilot the methodology, evaluate performance, get feedback and improve the service learning. In addition two CETI graduate students sponsored by industry funds will identify micro-projects requirements and canidates that can be contributed to the project data base. The benefit to faculty and graduate students is research into community's technology requirements, interaction with industry on industry sponsored problems and more relevant context for in-class teaching. 2) Operational costs are provided by DataCenter101 that is committing data center computing including server capacity, space, bandwidth, staffing, and related cable and networking expenses. This includes related operating software license costs. The benefit to DataCenter101 is an understanding of future cloud computing requirements and business growth opportunities. 3) TechCorps is showing in-kind as on-going mentoring support for undergraduate mentors, organize/supervise upgrade of public computing centers by undergraduate students (covered by this project), ongoing community tech support program to maintain 24 Centers for two years and thus training 240 middle and high school students trained. Benefit to them is the growth of an existing program and not-for profit organization. This is in addition to facilites and administration in kind. 4) Training and outreach community partners provide in-kind over two years as follows. AAAS-CEC in kind is based on a graduate student resource and space, 4H project supervision in-kind time is in program supervision. Together this is and the benefit for these programs is the expansion of the programs using existing infrastructure. 5) CICJ and WOSU are together contributing an in-kind of training, mentoring, space etc. The benefit to them is getting students engaged in media. 6) OSU Service learning will take the developed methods to a engage faculty more widely in service learning. The in kind is coordination time. Their goal is to meet OSU presidents goals in service learning.



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	7) MORPC in kind is in guiding and assisting the formulation of the advisory board for the Power3. The Mid-Ohio Regional Planning Commission (MORPC) will be the regional voice and a catalyst for sustainability and economic prosperity in order to secure a competitive advantage for central Ohio. 8) Other in kind commitments have been made that are key to sustainability include the City of Columbus for center capacity (pending council approval and thus not counted). Proposal writing time is estimated at 5%.
Unjust enrichment	
Disclosure of federal and/or state funding sources	

Budget Narrative	
Budget narrative	<p>Development: The integration of existing best practices into an organizational and CI-based scaffolding requires four graduate students at 50% time, technology expertise provided by Drs. Jay Ramanathan, Bob Horton, Rajiv Ramanth and Ola Ahlqvist. Funds are for requirements gathering, identification of strategies and benefits of incorporating mentoring into service learning, review of pilot progress and feedback, and continuous improvement. The cost of such vendor software was determined to be about \$350k for a limited number of licenses and with additional limitations of a closed environment. This limits future expansion as well. Thus we determined that taking an open source approach will make the benefits of government investment not only available to other institutions, but also become a source of innovation that is made available to communities that are typically economically disadvantaged.</p> <p>Operations: This requires \$150,000 to enhance poorly equipped Public Computing Centers as follows. For each of the existing 20 sites we wish to purchase 10 computers at \$500 and provide broadband service at \$100 per month for 2 years. From a public computing perspective, we have telephoned and determined that there are 200 computers in public centers (and another 200 in libraries etc. that are</p>



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	<p>being enhanced as part of another proposal). Thus with this upgrade there will be 5 youth using each computer over a period of a year. Tech Corps will train youth to upgrade and maintain these facilities with their in-kind. We have also identified 16 undergraduate OSU students that will be selected to gain momentum in the mentoring program initially. Training and outreach: funds are requested to integrated and re-structure existing programs to include the mentoring practice from K-12 through university students, identify the target individuals based on background and interests, conduct pilots and provide feedback. The pilot ensures feedback that is incorporated will make the scaffolding is more likely to be successful. In addition funds are required for program management and coordination into the third year to ensure sustainability. A small amount is included for promotions.</p>
Budget reasonableness	<p>The total estimated cost for for Power3 is approximately \$3.47 million. This includes a sponsor cost of \$ 1.95 million. The project includes a match of 43% percent. The goal of the project is to have direct impact on 5,000 youth in the neighborhoods near the Ohio State University and northeastern Columbus, Ohio. These youth are are characterized as part of a vulnerable population due to their economic status and the high unemployment in their neighborhoods. Through the Power3 program, the benefits gained to each youth be gained at per capita cost of approximately \$390.00, less than the cost of purchasing a netbook computer.</p> <p>In addition, the greater community of 222,000 people gain access to 200 state of the art collaborative computer applications. While the per capita benefit is low (1 computer per 1,000 people), it only accounts for new computers in public computing centers. There are an additional 193 computers available to the public in the six library branches that are in the targeted area. The computers in the libraries are part of another ARRA broadband request.</p> <p>The in-kind contributions include participation from a broad variety of partners including institutional, business, non-profit and government sources. In addition, the Power3 proposal has immediate impact on 1,400 college students. By participating in the program, these students</p>



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	<p>gain the benefit of leadership skills, project management, and the potential for introduction into real world experience with technical companies through the involvement of TechColumbus. The module of "e11", which is also included in this proposal will result in a tool for registering community service projects. This project, which includes e11 and mentoring matches between college students and youth, upgrades and expansion of public computer access, and a measurable purpose for accessing the computer, can be replicated across the country to advance the readiness of a new, high skill workforce.</p>
Demonstration of need	<p>The collaborative and comprehensive nature of this project limits the potential funding opportunities to the ARRA as a source for immediate implementation. As discussed in the collaborative section of this application, Power3 is consistent with objectives outlined in many other policies. However, none of them comprehensively address the elements of this proposal that include the development of "e11", the training and outreach efforts associated with deploying the mentoring program, or upgrading computing needs in non-profit computing centers. All of these elements are required to support the goal of Power3 of introducing youth, especially vulnerable youth to real world applications of technology in this innovative way of linking them with college students in a way that the concept can be carried forward into the future. Many of the available funding sources are specifically dedicated either to business or else to technology, not a community program and infrastructure. Many of the benefits associated with Power3 will be realized over a long period of time as leadership skills and technology skills are integrated into the American workforce. In addition, the value of replicating the program into other communities has incredible potential, but is not readily recognizable and most grants do not consider these long term return on investments in successful applications. Power3 is clearly aligned with the purpose of the Sustainable Broadband Adoption Program with regards to providing education awareness, training, access, equipment and support to vulnerable populations. Moreover, although many of the partners identified in this proposal have established programs, they have not had the resources to collaborate in such a timely fashion. The</p>



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	immediacy of ARRA has ignited these institutions to work together because they each recognize they individually bring value to a project that has outcomes greater than they can achieve independently.
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Funds to States/Territories

States	Amount of Federal Grant Request
Ohio	1,953,292

Funds to States/Territories Total: \$1,953,292

H. Historical Financials

Matching Funds			
	2007	2008	2009
Revenue	599,290,000	594,141,000	673,590,000
Expenditures	720,206,000	702,592,000	0
Net Assets	93,742,000	101,173,000	0
Change in Net Assets from Prior Year	-70,832	202,314	0
Bond Rating (if applicable)			

I. Program Benefits

Jobs	
How many direct jobs-years will be created from this project?	20
How many indirect jobs will be created from this project?	10
How many jobs will be induced from this project?	5



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Methodology used to estimate jobs:

Some jobs will come back, when the economy recovers. Robert B. Reich: "But the reality that no one wants to talk about is a structural change in the economy that's been going on for years but which the Great Recession has dramatically accelerated." Senator Brownback: "Consequently, the three million jobs saved or created is a useless and unverifiable metric against which to measure the success or failure of stimulus." Michael Woodford, explained "A large multiplier is especially plausible when monetary policy is constrained by the zero lower bound on nominal interest rates;and a multiplier well in excess of 1 is possible." The CEA "it takes approximately \$92,000 of spending to create one job-year" and that the results of their simulation "show that a dollar of government spending creates roughly 1.6 times as many job-years as a dollar of tax cuts and 1.3 times as many job-years as a dollar of state fiscal relief." Evaluating macroeconomic literature regarding the effect of the stimulus upon job creation, we used the CEA methodology to calculate a range between 2 and 30 potential direct-job years that can be expected through federal funding of \$1.9 million for Ohio State University's SBA proposal. [$\$1.9 \text{ million} / \$92,000 = 20 \text{ job-years}$] (Note: see City of Columbus broadband infrastructure mid-mile proposal: if both projects are funded there is a high probability of an exponential, long-term increase in the creation of "Knowledge" jobs).

Adoption Metrics	
How many total new home subscribers (household accounts) to broadband do you expect to generate through use of BTOP funds over the entire life of the program funded?	5000
How many total new business and/or institutional subscribers to broadband do you expect to generate through use of BTOP funds over the entire life of the program funded?	0
How many total users of broadband in public computer centers or users of broadband outside the home (e.g., in a community college) do you expect to generate through use of BTOP funds over the entire life of the program funded?	5000
What is the total cost of your project per new subscriber (household, individual, or institutional) or new end-user?	\$640.00

Measuring Adoption Impact:



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The program goal is to impact 7,500 people. Of these, 5,000 are youth that will be working directly with their college mentors through technological methods. In addition, it is our goal that each student has a positive impact on at least 1 other people in the targeted area. To measure this, each student will complete a questionnaire to establish a baseline measure of their level of technical expertise, and experience using computing systems across broadband infrastructure. The students will complete a questionnaire at the conclusion of their project to ascertain the impact that Power3 had on their knowledge, and what impact their experience had on non-participants.

Baseline use at the computing centers will be collected before the project begins, and they will be monitored quarterly to deduce the increase in usage that might be attributable to the Power3 project.

Measurements of OSU mentors participation levels will be monitored by university class participation levels. As this is expected to be a required 1 credit hour project, the students will be held accountable and monitored for their participation.

Benefits of the program will also be ascertained through the quality of the projects that that youth and their mentors developed. Details of this review are still to be determined, but it is anticipated that partners, including representatives from the training constituency, the academic constituency, student peers, and others such as business representatives, the client for whom the project was developed, etc.

Finally, the program will be measured based on the success of the number of proposed projects submitted to the repository via e11.

Required reporting will be submitted as required by grant approval. In addition, the findings from the pilot will be summarized and presented to the project partners and potential expansion areas.

Broadband Training Programs	
If you intend to provide training or education, how many people in total will your program(s) reach?	5000
How many hours of training do you expect to provide per person on average for each participant in your training program(s), through completion of training for that individual?	30
How many Full time employee (FTEs) instructors or facilitators will you employ for broadband and digital literacy training purposes?	75



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Describe their qualifications (training and experience):

TechCorps Ohio has success developing informal education youth technology programs and then sustaining the programs through local corporate and foundation underwriting. TechCorps received its charter in 1999, and since that time has recruited, placed and supported more than 500 technology volunteers who have shared their time and talents assisting students and teachers in more than 300 Ohio schools and nonprofit organizations. TechCorps programs have impacted nearly 10,000 K-12 students in 23 Ohio counties. In 2003, with support from the US Department of Education developed and piloted the Student TechCorps program to recruit, train and support technology industry volunteers mentoring middle and high school students and supporting schools. In 2005, TechCorps with support from The Ohio State University and The Women's Fund of Central Ohio used the same proven strategy to develop and pilot Girl TechCorps, a program targeting young girls and aimed at cultivating their interest in technology education and career pathways. In 2005, TechCorps with support from Franklin County Department of Job and Family Services, along with our partner City of Columbus; Mayor's Office of Education. TechCorps co-developed City Student TechCorps to prepare Columbus youth for summer employment. The program addressed the underrepresented ethnic minorities and low-income youth in technology focused programs. In 2008, TechCorps with support from the AEP Foundation to address the needs of elementary students shying away from STEM careers early on. TechCorps developed and is piloting TECHie Club, which provides a deep exposure of different technological skills and careers to elementary students, lead by a team of industry technology volunteers from the community. The Community Extension Center (AAAS-CES) is located in the historic Mount Vernon area in near east Columbus. It provides community outreach and education to enhance the educational opportunities of students and improve the quality of life for people who live and work in the neighborhoods near and around the center and Columbus's urban and minority communities. AAAS-CEC has worked with 150 students on math science program over the last six years. Their technology training program has impacted over 1,700 students over nine years.

Ohio Extension 4-H Science, Engineering and Technology for Youth program is a non-formal educational, youth development program. Youth are involved in hands-on, experiential learning that allows learning by doing. All 4-H programs focus on active involvement and quality experiences which stimulate lifelong learning of values and skills. With support from Ohio Department of Education since 2006, they have worked with 200 students and 160 volunteers. Participation in the Power3 project will integrate programs to meet K-12 to university student needs. We will apply demonstrated model of financial sustainability to this proposed project.



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Equipment Affordability Programs	
What is the total up-front cost of this equipment?	\$150,000.00
If you are providing an equipment purchase or loan program, for how many households, businesses and/or institutions do you expect to provide equipment or computers?	0 Households
	0 Businesses
	24 Institutions
If you are employing a loan program for purchases of service or equipment, what will be the total cost to the typical customer you assist over the life of the loan, including all interest and fees?	\$0.00
How many broadband-related equipment units (e.g. computers, wireless devices) do you intend to purchase overall?	200

Broadband Awareness Programs	
If you are conducting an awareness campaign, how many people do you expect your campaign will reach in total per year?	150000

Awareness Campaign Methods: Briefly describe the targeting, media, and messaging strategies your awareness campaign will employ.

The Power3 project is targeted to youth of the greater metropolitan area, especially around the OSU campus, the near east side neighborhoods and neighborhoods in the northeast. By generating an interest in utilizing technology and Internet these students will be encouraged to seek access to high speed Internet at home. Parents then also are targets for program marketing. The project will use local public media to promote, advertise and develop human interest features that will help to further the goals. The City of Columbus cable access channels (public educational and government) and WOSU Public Media are committed to airing the programming created and mentoring students in media production of television, radio and web public service spots or features. The Contemporary Institute for Community Journalism which operates both a CTC and Media Center will also participate. In addition, programming will be made available to the City of Westerville cable access channel and local commercial television and radio stations. Media partner websites as well as websites for all of the participating partners on Power3 will be



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available for promotional information. The media campaign will also tap into popular social media avenues to connect with youth and begin a conversation about the benefits of broadband technology. The campaign will reach out to community centers, churches, schools, libraries, social service agencies, the YWCA, YMCA, Urban League the 4-H club network, Upward Bound as well as other clubs, such as Girl Scouts, Boy Scouts, Boys and Girls Clubs, Campfire girls and others to enlist their help in advertising through newsletters, bulletin boards, brochures, fliers, etc. The City of Columbus can also include inserts in water bill mailings which will reach almost all residents in the targeted areas.

It is important that we recognize that the youth population target is not likely to have cable access or Internet at home, so utilizing existing community networks must be leveraged to get the Power3 message out. These will include sending information home with students from schools in the area, advertising with brochures, posters, fliers, etc. at local supermarkets, grocery store, Laundromats, community centers, churches, etc. as well as community papers and advertisers, newspapers and word of mouth. While the access to media is an important opportunity to promote Power3 program and broadband technology benefits, the partner agencies such as Tech Corps, already have extensive marketing and outreach programs developed to foster awareness in the disadvantaged communities that the program will serve. Tech Columbus has agreed to play a critical role in promoting the program to industry and to business by enlisting sponsors and support. OSU's e11 services will alert student populations to service programs and match them with local school students. The success of this can easily be monitored as the university requires a community service credit.

Measuring Campaign Impact: Describe how you will measure the impact of the awareness campaign.

The impact of the program can be measured by the response that the program receives from interested participants, but ultimately the program's impact must be measured by the broadband adoption rates exhibited among Power3 participant youth and families. We will track baselines on not only on the effectiveness of various awareness vehicles but also on broadband usage among participants. We will ask how the student became aware of the program and will ask for information on whether there is a broadband connection in the home,-- what type and what speed. These same questions will be asked in one year or at the time a participant leaves the program.

According to the Pew Internet and American Life project the current broadband adoption rate for households with an income of twenty thousand or less is 35 percent; for those with income of \$30-\$40,000 it is 54 percent and for \$40-50,000 income households it is 71 percent. Based on the



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socio-economic characteristics in this area, we assume the adoption rate in this area to be approximately 40 percent, meaning approximately 133,000 of the target area population have insufficient broadband exposure. Upon reaching the goal of engaging 5,000 youth, and assuming a comparable adoption rate to the full target area population, we estimate that the adoption rate in this area could be increased by 2 percent in the target area. If each child were to engage even 1 additional person, a parent, a friend, or a sibling, the participation rate in the target area would increase by 4 percent. The goal of the program is to directly engage 5,000 youth and indirectly impact the increased broadband adoption of 2,500 additional people. As a result, we hope to increase broadband awareness of 4 percent of the target population.

The impact from this program is based on youth participation and extent of additional broadband knowledge the program provided. To assess the program, which is a direct result of the outreach campaign, each participant will complete a questionnaire that measures their baseline knowledge level. Upon completion of their project, the students will be reassessed to measure the change in their knowledge level, and to assess whether other non-participants were affected.

J. Project Readiness

Licenses and Regulatory Approvals

There are no licenses or regulatory approvals need.

Organizational Readiness

For the pilot twenty students will be drawn from each of the community partners. Tech Corps, AAAS-CEC and 4-H, participation in the Power 3 project will be the latest in a continuing commitment to deliver meaningful, timely programs to meet K-12 students' needs. They each have a successful record of developing informal education youth technology programs and then sustaining the programs through local corporate and foundation underwriting. They also have staff currently coordinating similar programs, space and facilities. In each case the community partner will be recruiting from ongoing efforts for the pilot. This will begin immediately upon award. Tech Corps can recruit students immediately to help upgrade the computing facilities. 4H can recruit at least 60 youth from other on-going programs. For example, they will be recruiting youth from the City of Columbus Summer Youth Works program. They are required to put in a maximum of 20 hours per week for 6 weeks during the summer months. Finally 4H located in the historic Mount Vernon area in near east Columbus, the Community Extension Center provides community outreach and education programs designed to enhance the



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educational opportunities of students and improve the quality of life for people who live and work in the neighborhoods near and around the center and Columbus's urban and minority communities. With support from Ohio Department of Education since 2006, they have worked with students and volunteers. AAAS-CEC has worked with 150 students on math science program over the last six years. They also have a technology training program which impacted over 1,700 students over nine years. The e11 development will begin in parallel using existing CETI experience and prototypes in collaborative software and content management systems. We can therefore have a first version of e11 ready in six months. Project sponsors at the 'peak' of the pyramid and scaffolding will be drawn from Principal Investigators, Student Life and Students Services, Columbus State Community College, CICJ, ongoing CETI students and other supporting partners.

Project Timeline and Challenges

The three years of the proposed project are divided into three main phases, each with quarters(qtr). PHASE 1) Build capacity and pilot (qtr 1, qtr 2): After the kick-off, in the first this phase the public computing centers are made suitable. This will be accomplished by TechCorps and mentored students. 150k will be spent to purchase equipment etc. For each of the existing 20 sites we wish to purchase 10 computers at \$500 and provide broadband service at \$100 per month for 2 years. In parallel, the development team will meet with the users to define the Power3 mentoring and matching methods, background check and related requirements. At the same time the mentor training curriculum will be developed by TechCorps and reviewed by the team. Many aspects will also be supported by the e11. The Power3 methodology and the software will be piloted in the during the second qtr with three target computing centers. The pilot will be with 60 students. This phase ensures that when feedback is incorporated, the scaffolding is more likely to be successful. In this phase we will also engage two or three youth teams from different organizations to develop videos in technology projects that showcase Power3 success in the Media (WOSU and TV channel) to help youth enroll oher youth. The risks are to synchronize with the university calendar to ensure the enrollment of sudents for the next rollout phase. So we will start early and implement strategies where students help enroll others. PHASE 2) Initial rollout (qtr 3, qtr 4, qtr 5, qtr 6): Community partners expand to 2,100 target students, enhance Power 3 method and e11; test scalability. This will be accomplished by the service learning courses taking on sponsored projects. These projects will be assigned to undergraduate, high-school and middle school students along with mentees. In parallel to ensuring that the rollout is successful, the Program leaders will also begin to expand relationships that sustain the program. Community partners are now fully engaged and equipped



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to use e11 for mentoring and project selection. The four funded undergraduate students will undertake expert mentor roles to ensure that the rollout is successful. The program management team will be very engaged in helping other faculty to use the mentoring approach in service learning courses. The risks here are to ensure that enough faculty get interested in service. To address this we have budgeted for faculty incentives.

Sustaining program (qtr 7, qtr 8, qtrs 9-12): Sustaining program, expand to an additional target 2,100 plus students. In this phase we will introduce pilots in new regions like Delaware. The rollout is expected to be an simple consequence of the mentoring schemes where students will be asked to engage friends. The risk here is to find alternate sources of funding the program. Some sources are student fees, institutional sponsorship and so on.

SPIN Number

K. Environmental Questionnaire

Does the proposed action involve the procurement of materials? If so, will the materials be installed, stored or operated in an existing building or structure? If yes, please click "Add" to include the list of equipment and peripherals to be procured.

Yes

200 thin client or netbook computers that has sufficient capacity to access open-source software via cloud distribution.

Does the proposed action involve procurement of electronic equipment? If yes, will the equipment be disposed of in an environmentally sound manner at the end of its useful life?

Yes

Does the proposed action involve construction, remodeling, or renovation? If so, will these activities be limited to only minor interior renovations to a structure, facility, or installation? If yes, click "Add" to include a description of the proposed renovations with your project summary.

No



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Does the proposed action involve the production and/or distribution of informational materials, brochures, or newsletter?

Yes

Does the proposed action involve training, teaching, or meeting facilitation at an existing facility or structure? If yes, click "Add" to explain.

Yes

Some training will occur within existing OSU classrooms for the purpose of advising the OSU students on their mentoring responsibilities. In addition, technical training may occur at locations of the existing public computing centers or within public school facilities.

Does the proposed action involve ground or surface disturbance to accommodate new fiber optic cable? If yes, please click "Add" to include a description of the extent of service upgrade, a list of the permits required, and linear footage of underground fiber optic cabling required.

No

Does the proposed action involve an upgrade of broadband service to an existing facility or structure? If yes, please include a description of the extent of service upgrade, a list of the permits required, and linear footage of underground fiber optic cabling required?

No



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Uploads

The following pages contain the following uploads provided by the applicant:

Upload Name	File Name	Uploaded By	Uploaded Date
Management Team Resumes and Organization Chart	CETI Resume Jay Ramanathan.doc	Ramanathan, Jayashree	03/14/2010
Management Team Resumes and Organization Chart	City Resume_marynordstrom.pdf	Ramanathan, Jayashree	03/14/2010
Management Team Resumes and Organization Chart	City-Resume-Gary Cavin.pdf	Ramanathan, Jayashree	03/14/2010
Management Team Resumes and Organization Chart	Data center 101 - Chuck Maynard.pdf	Ramanathan, Jayashree	03/14/2010
Management Team Resumes and Organization Chart	Data center overview - resume.pdf	Ramanathan, Jayashree	03/14/2010
Management Team Resumes and Organization Chart	MORPC - Brad Cavener.pdf	Ramanathan, Jayashree	03/14/2010
Management Team Resumes and Organization Chart	OSU - Rajiv Ramnath.doc	Ramanathan, Jayashree	03/14/2010



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Management Team Resumes and Organization Chart	OSU Extension - HORTON.doc	Ramanathan, Jayashree	03/14/2010
Management Team Resumes and Organization Chart	OSU Extension - Robin Green Resume.doc	Ramanathan, Jayashree	03/14/2010
Management Team Resumes and Organization Chart	SBS Resume Alhlqvist.doc	Ramanathan, Jayashree	03/14/2010
Management Team Resumes and Organization Chart	TECH_CORPS_Resume_Aung_Nay.doc	Ramanathan, Jayashree	03/14/2010
Management Team Resumes and Organization Chart	TECH_CORPS_Resume_Lisa_Chambers.doc	Ramanathan, Jayashree	03/14/2010
Management Team Resumes and Organization Chart	WOSU_Resume_Thomas Rieland.doc	Ramanathan, Jayashree	03/14/2010
Management Team Resumes and Organization Chart	SBA Management and Team.doc	Ramanathan, Jayashree	03/14/2010
Management Team Resumes and Organization Chart	OSU Extension - Resume Susan Colbert.pdf	Ramanathan, Jayashree	03/15/2010



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Government and Key Partnerships	Other Letter of Support - Columbus State.pdf	Ramanathan, Jayashree	03/15/2010
Government and Key Partnerships	Other Letter of Support - InfoOhio.doc	Ramanathan, Jayashree	03/15/2010
Government and Key Partnerships	Letter of Support-OSU extension.pdf	Ramanathan, Jayashree	03/14/2010
Government and Key Partnerships	Letter of Support- TechColumbus for Power3.pdf	Ramanathan, Jayashree	03/13/2010
Government and Key Partnerships	Letter of Support- OSU extension 2.pdf	Ramanathan, Jayashree	03/13/2010
Government and Key Partnerships	Letter of support - WOSU Media City of Columbus - a.gif	Ramanathan, Jayashree	03/13/2010
Government and Key Partnerships	Letter of support - WOSU Media City of Columbus - b.gif	Ramanathan, Jayashree	03/13/2010
Government and Key Partnerships	Letter of Support - TECH CORPS.pdf	Ramanathan, Jayashree	03/13/2010
Government and Key Partnerships	Letter of Support - Service Learning.pdf	Ramanathan, Jayashree	03/13/2010
Government and Key Partnerships	Letter of Support - OSU service learning and outreach.pdf	Ramanathan, Jayashree	03/13/2010



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Government and Key Partnerships	Letter of Support - OSU Extension.doc	Ramanathan, Jayashree	03/13/2010
Government and Key Partnerships	Letter of support - MORPC Power3 SBA appl.pdf	Ramanathan, Jayashree	03/13/2010
Government and Key Partnerships	Letter of support - DC101.pdf	Ramanathan, Jayashree	03/13/2010
Government and Key Partnerships	Letter of Support - City of Columbus.gif	Ramanathan, Jayashree	03/13/2010
Government and Key Partnerships	Letter of Support - AAAS-CEC.pdf	Ramanathan, Jayashree	03/13/2010
Government and Key Partnerships	Letter of support - OSU SBS Ahlqvist.pdf	Ramanathan, Jayashree	03/14/2010
Government and Key Partnerships	Letter of Support - CICJ.pdf	Ramanathan, Jayashree	03/14/2010
Government and Key Partnerships	Other Letter of Support - City of Delaware.pdf	Ramanathan, Jayashree	03/14/2010
Government and Key Partnerships	Other Letter of Support - IBM.pdf	Ramanathan, Jayashree	03/14/2010
Government and Key Partnerships	Other Letter of Support - Student Health Services - John Vaughn.docx	Ramanathan, Jayashree	03/14/2010



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Historical Financial Statements	FinancialStatement.pdf	Ramanathan, Jayashree	03/15/2010
Community Anchor Institutions Detail	publiccomputingcenters.xlsx	Ramanathan, Jayashree	03/15/2010
BTOP Certifications	Ramanathan_031510.pdf	Ramanathan, Jayashree	03/15/2010
SF424 A Budget	pgUploadSrcReader.pdf	Ramanathan, Jayashree	03/15/2010
SF424 A Budget	detailed_budget.pdf	Ramanathan, Jayashree	03/15/2010
SF424 B Assurances - Non-Construction	sf424b.pdf	Ramanathan, Jayashree	03/15/2010