# Proposal Cover Sheet

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Clark State/Avetec Internship Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Location/s</td>
<td>Springfield, OH</td>
</tr>
<tr>
<td>Project Start Date</td>
<td>12/4/12</td>
</tr>
<tr>
<td>Interns/Co-ops Start Date</td>
<td>June 2013</td>
</tr>
<tr>
<td>Lead Applicant - Must be public higher education agency</td>
<td>Name and Address of Postsecondary Institution</td>
</tr>
<tr>
<td></td>
<td>Clark State Community College</td>
</tr>
<tr>
<td></td>
<td>570 East Leffel Lane</td>
</tr>
<tr>
<td></td>
<td>Springfield, OH 45501-0570</td>
</tr>
<tr>
<td>Chief Contact Individual must be authorized to sign agency grant contract and legally responsible as agency representative.</td>
<td>Name/Title of legal representative Address, Telephone, FAX, and E-Mail</td>
</tr>
<tr>
<td></td>
<td>Karen E. Rafinski, Ph.D.</td>
</tr>
<tr>
<td></td>
<td>President</td>
</tr>
<tr>
<td></td>
<td>Clark State Community College</td>
</tr>
<tr>
<td></td>
<td>937-328-6001 (phone)</td>
</tr>
<tr>
<td></td>
<td>937-328-6142 (fax)</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:rafinskik@clarkstate.edu">rafinskik@clarkstate.edu</a></td>
</tr>
<tr>
<td>Project Director(s)- Key Personnel(s)</td>
<td>Name/Title, Address, Telephone, FAX, and E-Mail</td>
</tr>
<tr>
<td></td>
<td>Theresa Felder</td>
</tr>
<tr>
<td></td>
<td>Dean, Greene Center Campus</td>
</tr>
<tr>
<td></td>
<td>Clark State Community College</td>
</tr>
<tr>
<td></td>
<td>3775 Pentagon Blvd.</td>
</tr>
<tr>
<td></td>
<td>Beavercreek, OH 45431</td>
</tr>
<tr>
<td></td>
<td>(937) 429-8922</td>
</tr>
<tr>
<td>Amount of state money requested</td>
<td>$105,920</td>
</tr>
<tr>
<td>Match money committed</td>
<td>$168,430</td>
</tr>
<tr>
<td>Number of internships/co-ops proposed</td>
<td>20</td>
</tr>
</tbody>
</table>
Legal Applicant

Name: Clark State Community College

Address: 570 East Leffel Lane

City: Springfield Zip: 45501-0570

Phone: 937-325-0691 Fax: 937-328-6142 E-Mail: rafinskik@clarkstate.edu

CEO Name: Karen E. Rafinski, Ph.D.

1) Certification by Authorized Official:
To the best of my knowledge and belief, data contained in this application are true and correct. The document has been duly authorized to comply with the required assurances.

Signature of Authorized Official: [Signature]

Typed Name and Title: Karen E. Rafinski, Ph.D., President

Date: 10/12/13

2) Administering Entity
Agency Name: (same as above)

Address: ____________________________

City: __________________ Zip: __________ Phone: ________________

Fax: _______________ Contact Person: ______________________

Title: __________________ E-Mail: __________________________

3) Business Partners (please submit separate information for each partner)
Company Name: Avetec

Address: 4170 Allium Court

City: Springfield, OH Zip: 45505 Phone: 937-322-5000

Fax: 937-325-6284 Contact Person: Cathy Balas

Title: Executive Director, Educational Programs E-Mail: cbalas@avetec.org

5) Educational Partners (please submit separate information for each partner)
ABSTRACT

Clark State Community College will partner with Avetec in Springfield, Ohio, to provide 20 high-quality internships for Information Technology (IT) students that will lead to employment in small, mid-sized, and large businesses in Ohio. This model will embed faculty along with technology staff so that building and delivering curriculum is a collaborative process and results in meaningful and relevant teaching and learning.

The Clark State/Avetec model allows those small and mid-sized companies to bring their technological challenges to the students, share ideas for learning, give input to the curriculum, offer mentoring, host field trips, and recruit and hire from the pool of IT students that have worked in the rigorous ten-week program.
Clark State Community College/Avetec Internship Program

Since 2010, Clark State Community College has partnered with Avetec in Springfield, Ohio, to provide high-quality internships for Information Technology (IT) students that have led to employment in small, mid-sized, and large businesses in Ohio. During the past three summers, a total of 28 students have participated in the project, stayed in Ohio, and most are either working in IT occupations or advancing their IT education.

The Clark State/Avetec model has had important advantages for the Dayton/Springfield community. First, it embeds faculty along with technology staff so that building and delivering curriculum is a collaborative process and results in meaningful and relevant teaching and learning.

Yet equally as important is the centralized nature of the program itself. Small and mid-sized IT companies do not usually have the capacity to work with faculty and student teams in such a direct and meaningful way. The region’s largest employer of IT workers, Wright Patterson Air Force Base (WPAFB), has challenges working directly with students due to security constraints.

The Clark State/Avetec model allows those small and mid-sized companies to bring their technological challenges to the students, share ideas for learning, give input to the curriculum, offer mentoring, host field trips, and recruit and hire from the pool of IT students that have worked in the rigorous ten-week program. The outcomes and support letters indicate that this program has had a great impact on the regional IT industry. The CEO of NetGain stated, “We’ll help you promote the process any way possible!” With OBR funding, the program will greatly expand its enrollment and engage even more employers to connect with this important talent pipeline.

Programmatic – 40 points

1. Business attraction & retention: Helps attract businesses to Ohio and/or retain them by closing skills gap, aligning curriculum, and providing talent pipeline

The field of Information Technology cuts across all major industries in Ohio and is also a target industry for the economic development efforts from the State of Ohio and JobsOhio. Although IT is a critical industry in Ohio, data indicates that Ohio’s colleges and universities are not preparing enough IT graduates to meet the job demand. The graph below shows the Dayton Region’s gap between annual computer systems openings and graduates.
For Ohio to attract and retain the industries that will drive the regional and state economy, the talent pipeline for IT workers must be strengthened and the gap closed between supply and demand. In addition, a large percentage of the IT jobs in the Dayton/Springfield region are connected to work with Wright-Patterson Air Force Base, including civilian and contractor positions at the Air Force Research Laboratory, the National Air and Space Intelligence Center, and other installations.¹

The Clark State/Avetec internship program is helping to close the gap between supply and demand and help employers find the IT talent they need for jobs in fields such as cyber security, computer programming, Geographic Information Systems (GIS), and Java. The project will combine the resources and experiences of Clark State Community College, its business partner Avetec, and other business partners to provide IT internships.

The Clark State/Avetec internship program builds on the internship program that Clark State and Avetec has held for the last three summers (2010, 2011, and 2012). The ten-week program embeds Clark State faculty along with Avetec employees so that students are solving hands-on IT challenges that Avetec and other IT companies face. While in the program, students conduct undergraduate research around topic areas that are relevant to Avetec and the other IT businesses that participate in the program. Through this opportunity, some Clark State students have traveled to the Pacific Northwest National Laboratory (PNNL) in Washington State to get experience in a national laboratory. Between the Avetec and the PNNL programs, 28 Clark State and Central State students have participated in the internship program.²

The internships take place during regular business hours in the summer, Monday through Friday, 40 hours per week, totaling 400 hours. Past projects and research topics have included

¹ Of the current job listings for IT workers on Ohio Means Jobs, 25 percent state that a security clearance is required.
² Central State University students are planning to participate in the 2013 program as well, though they will be funded through federal funds and therefore no OBR funds are requested for their participation.
high performance computing security, cyber security, convergence technologies, and high performance computing systems and system administration. In 2012, the program concentrated on cyber security. At the end of the program, students prepared for a “hackfest,” where teams conducted hacking attacks while other teams had to develop defenses and keep the system from any interruptions. This experience gave students real-time application for the technologies and skills they had learned to protect and secure computer systems during the internship program.

The 2013 program will continue the partnership with PNNL, but will create an expanded program in Springfield, Ohio. While 8 Clark State students will travel to Washington State to participate in the program on grant funds provided by PNNL, 20 additional Clark State students will be placed in internships within Ohio. Projects will focus on cyber security, high performance computing (HPC), system support for biotechnology HPC, “green” HPC, and other topic areas. In addition, another “hackfest” is planned for teams of students to participate. OBR support is requested only for the 20 students in Ohio.

The Ohio internship program will give local students both the hands-on experience with the Avetec work environment as well as the virtual connection to a national laboratory. With faculty working directly with students and Avetec employees in Springfield, and additional faculty with students and PNNL employees in Washington, the internship experience will provide students with professional business experience using a broad variety of software packages, technology platforms, and virtual testing environments, while making use of the most advanced computation systems in the US.

2. Student attraction/retention/completion: Helps attract students to higher education & Ohio and/or retain them to postsecondary credential.

National research has shown that students who engage in internships during their college experience perform better in their classes, take less time to finish their degrees, and have higher completion rates than students who do not participate in internship opportunities.

Clark State’s institutional research shows a similar pattern as the national data. An internal study of students from academic year 2007-2008 through academic year 2011-2012 shows that the students enrolled in Clark State’s IT degree program who had also participated in the Clark State/Avetec internship program had double the graduation rate than the students who were enrolled in the academic program but did not take part in the internship opportunity.

In addition to the improved graduation rates, the internship opportunities themselves have increased interest in IT programs. Since 2006, enrollment in IT programs has doubled at Clark State. In 2006, only a few individuals were interested in internship opportunities. Currently, at least one-third of the IT students have come to information sessions regarding internships and co-ops.

3. **Student post-credential employment: Helps students become employed in Ohio.**

In addition to improving academic performance, internships also help students get employed. According to a survey by the National Association of Colleges and Employers, more than 61 percent of college students who undertook a paid internship had a job offer at the time of graduation, while just 37 percent of those who did an unpaid internship had a job offer.⁴

The interns who have participated in Clark State/Avetec internship program have been hired by Ohio employers. As the table below illustrates, the program’s interns who completed their degree programs were hired by Ohio employers.⁵

<table>
<thead>
<tr>
<th>Student</th>
<th>Internship Experience (location, years in internships)</th>
<th>Current Employment Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>MW</td>
<td>PNNL, 1</td>
<td>IT technician, American Pan Company, Urbana, OH</td>
</tr>
<tr>
<td>TS</td>
<td>PNNL, 1</td>
<td>IT support, Honda Research, Marysville, OH</td>
</tr>
<tr>
<td>CD</td>
<td>Avetec, 1</td>
<td>IT software support, Natl Air and Space Intelligence Center (NASIC), Dayton, OH</td>
</tr>
<tr>
<td>BS</td>
<td>Avetec, 1; PNNL, 1</td>
<td>IT support, Forward Edge, Cincinnati, OH</td>
</tr>
<tr>
<td>KE</td>
<td>Avetec, 1; PNNL, 1</td>
<td>Master’s degree program in computer science at University of Dayton</td>
</tr>
<tr>
<td>RB</td>
<td>PNNL, 1</td>
<td>Instructor, Clark State Community College, Springfield, OH</td>
</tr>
<tr>
<td>TH</td>
<td>PNNL, 1</td>
<td>High Performance Computing systems monitor, Lockheed Martin, Dayton, OH</td>
</tr>
<tr>
<td>CG</td>
<td>Avetec, 1</td>
<td>Completed Associate degree, Enrolled in Bachelor’s program at DeVry</td>
</tr>
<tr>
<td>DL</td>
<td>Avetec, 1</td>
<td>Bachelor’s degree program at Central State, Wilberforce, OH</td>
</tr>
<tr>
<td>CD</td>
<td>Avetec, 1; WPAFB, 2; Alabama, 1</td>
<td>Math teacher, Springfield City Schools, Springfield, OH</td>
</tr>
<tr>
<td>DW</td>
<td>Avetec, 2</td>
<td>IT quality control, Navistar International, Springfield, OH</td>
</tr>
<tr>
<td>DS</td>
<td>Avetec, 1</td>
<td>WPAFB Medical Center</td>
</tr>
<tr>
<td>MA</td>
<td>Avetec, 1</td>
<td>Mfg, Troy, OH</td>
</tr>
<tr>
<td>SM</td>
<td>Avetec, 1</td>
<td>IT position, Cincinnati, OH</td>
</tr>
<tr>
<td>EB</td>
<td>Avetec, 1</td>
<td>Enrolled in Associate degree program at Clark State and employed part-time at Clark State in IT</td>
</tr>
<tr>
<td>JS</td>
<td>Avetec, 1; PNNL, 1</td>
<td>Bachelor’s degree program at Ohio University</td>
</tr>
<tr>
<td>SS</td>
<td>Avetec, 1</td>
<td>Internet Technician, CT Communications, Urbana, OH</td>
</tr>
<tr>
<td>JV</td>
<td>Avetec, 1</td>
<td>Completing Associate degree at Clark State; Plans to obtain Bachelor’s upon completion</td>
</tr>
<tr>
<td>AB</td>
<td>Avetec, 1</td>
<td>Hollywood Casino, Columbus, OH</td>
</tr>
<tr>
<td>AS</td>
<td>Avetec, 1</td>
<td>Admissions Office, Central State University</td>
</tr>
<tr>
<td>MC</td>
<td>Avetec, 1</td>
<td>Sears, Springfield, OH</td>
</tr>
<tr>
<td>AL</td>
<td>Avetec, 1</td>
<td>Enrolled in Associate degree program at Clark State, working PT at Avetec in IT</td>
</tr>
<tr>
<td>RD</td>
<td>Avetec, 1</td>
<td>Enrolled in Associate degree program at Clark State, working PT at Avetec in IT</td>
</tr>
<tr>
<td>MH</td>
<td>Avetec, 3</td>
<td>Completed Associate degree at Clark State, enrolled in Bachelor’s degree at Wright State, working part-time at Avetec in engineering technology</td>
</tr>
</tbody>
</table>

4. **Plans & budgets for sustaining the program beyond state money**

The Avetec/Clark State internship program has been sustainable for the past three years with grant funding from the National Science Foundation and the Pacific Northwest National Laboratory, an employer contribution from Avetec, and support from Clark State Community College and Central State University. Additional in-kind contributions have been provided by other IT companies who have provided mentoring, career assistance, and other professional

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⁵ Tracks 24 of the 28 students who went through the program. The status of the remaining 4 students is unknown.
development services for the interns. Funding from NSF paid for the development of curriculum in cyber security and high performance computing, both of which will continue to be elements of the internship curriculum.

The additional funding from the Ohio Board of Regents will allow the program to grow, offering additional internship positions to the students based in Springfield, Ohio. The expanded program will offer more opportunities for regional IT employers to engage in the program, an important component for the internship program’s sustainability. Please see attached letters of commitment for match and for hiring students after graduation.

5. Includes financial & performance metrics reporting system to Regents – see section 9

The Clark State/Avetec internship program will serve a total of 28 Clark State students during summer 2013. Of those 28 students, 20 will be located at Avetec in Springfield, Ohio, and the remaining 8 will be traveling to PNNL in Washington State. Although no budget funds are requested for the students performing their internship at PNNL, their numbers will be included in the overall data collection and report, as the two programs will have shared instruction and curriculum. Metrics for the program include the following:

- 28 Clark State students will be placed into internships, 20 more than the baseline.
- Of the 28 students, all will be undergraduate, in-state students.
- Of the 28 students, 4 will be from the Geographical Information Systems (GIS) program, while the remaining 24 will be enrolled in Information Technology (IT), Computer Systems Development, and other computer science related programs.
- Avetec in Springfield, OH will be the lead business with support from PNNL in Richland, WA and Woolpert for the GIS students.
- Students will work 40 hours per week for 10 weeks, totaling 400 hours.
- 28 students will be paid at a minimum rate of $10 per hour, earning a minimum salary of $4,000 (8 students at PNNL and 2 additional students at Avetec will be paid at a higher rate, based on internal organizational rates).
- All 28 students will complete their internship program.
- Of the 28 students who complete the program, at least half are expected to gain employment in IT occupations, while the remaining students are expected to continue their education and/or gain employment in non-IT occupations.
- Of the 28 students who complete the program, more than 90 percent are expected to remain in Ohio for employment or educational opportunities, or at least 26 of the 28 students.

All data collection and reporting to OBR will be conducted primarily by Clark State Community College with assistance in tracking employment from Avetec.
6. **Includes logical and prudent budget that provides high and immediate ROI**

The Clark State/Avetec internship program has proven to be a high-return investment, given that the program’s past participants have stayed in Ohio, and more than 80 percent of them have become employed in IT occupations or are advancing their education. The Ohio Board of Regents’ funding for the program in 2013 will be used for direct support to students in the form of instructional costs and direct intern salary support along with minimal faculty and staff support. With Avetec’s contributions of computers and high-speed fiber, personnel, and space, costs to OBR are minimal.

7. **Includes feedback loop among employers, educators & students**

The design of the Clark State/Avetec internship program is that it connects employers, educators, and students throughout the internship experience. The curriculum for the program is designed jointly by the employer (Avetec) with input from other business partners (PNNL and other businesses) and the Clark State faculty members. During the internship, both employers and educators are with the students, providing feedback on the projects themselves. In addition, this gives the educators the opportunity to connect with the employers on the curriculum and the workforce needs of the industry. This enables the educators to bring this experience back to the classroom after the ten-week internship period, thus providing an “externship” experience for the faculty members. This expands the impact of the project beyond the students who directly participate by bringing it back to the classroom for other students.

The feedback loop also includes an evaluation component. All students of the program provide an evaluation of the program to Clark State faculty and Avetec staff that allows them to self-assess the areas on which they improved, but they also identify how they best learned materials – asking questions, working with other students, self-directing their research, etc. Based on this feedback, faculty and staff adapt the program to better serve the learning needs of the students. Employers are also asked to evaluate the students’ performances. These evaluations are shared with students so that they understand which professional areas need to be improved. Examples of these evaluation forms are included in the Exhibits.

8. **Demonstrates positive impact to key industry and the local, regional or state economy**

As shown in the table on page 4, past graduates have had a positive influence on the local, regional, and state economy by gaining employment in high-demand occupational areas in businesses that drive the economy. Of the 28 students that participated in the program over the last three years, faculty and staff have remained in contact with 24 of them, while the status of the remaining 4 is unknown. Of the 24 students who continue to be tracked, all but 4 of them have either obtained employment in an IT field or are continuing their IT education. Of all the students who gained employment after completing the program – including the 4 in non-IT positions, 100 percent have stayed in Ohio. All of the students who are continuing their education in Bachelor’s or Master’s degree programs are also enrolled in Ohio institutions.
Employer – 25 points

1. Capacity: Businesses have capacity to meet proposed program requirements for students, Provides substantial meaningful educators, & partners

Avetec is a non-profit research business in Springfield, with a mission to solve complex challenges critical to American innovation in defense systems, modeling and simulation, data-intensive computing, energy, cyber security, and workforce development, helping their clients to compete in the global market.

Knowing that the talent pipeline is one of the greatest barriers to growing and sustaining its work, Avetec has invested heavily in educational programs. They have developed relationships with educational partners at both the K-12 and postsecondary levels to promote STEM education and to provide hands-on challenges for students to solve at their facility in Springfield, OH. In addition, Avetec has partnered with Clark State on several National Science Foundation (NSF) grants to develop the faculty and student team internship model and new associate-degree curriculum in cyber security and high performance computing.

Avetec has also served as an employer for students participating in the internship program. Three students who participated in the internship program in 2013 are currently working for Avetec. For this year’s internship program, Avetec has committed the time of its Executive Director of Educational Programs and other Avetec staff time, a cash contribution, and potential positions for future participants in the internship program. Moreover, Avetec and Clark State have built a network with other regional technology employers who hire students after completion. Please see attached letters.

2. Provides substantial, meaning work assignments that aligns to a JobsOhio industry cluster

Students participating in the Clark State/Avetec internship program will be qualified for positions within the IT industry, which is a JobsOhio targeted industry. The cross-cutting nature of IT demands means that other important industries may also be impacted. As past participants have demonstrated, students may also be hired by the automotive manufacturing industry in research, IT, and quality controls, or programming. Another important industry for IT graduates is the aerospace industry. Past participants have secured employment at WPAFB, NASIC, and aerospace contractors such as Lockheed Martin.

Mentoring will be provided by Avetec, PNNL, Woolpert (specifically for GIS students) and other regional IT employers. Past programs have included mentoring from the CEO and VP of Peerless Technologies, and professionals from CyrusOne, Cincinnati Bell, the Defense Share Resource Center at WPAFB, and Newport Spectraphysics.

3. Positions are paid

All students will be paid a minimum $10/hour for their time working with the internship program for 40/hours per week for the ten-week program, for a total of at least $4,000. Students will also
receive a 3-hour academic credit with a value of $398 per student for the scholarship granted by Clark State.

4. Include positions in more than 1 functional area in the workplace

As past experience indicates, participants of the programs have secured employment as programmers, technicians, cyber security, computer support, and other IT areas. Participants of the 2013 Clark State/Avetec internship program will be expected to gain employment in areas such as GIS, cyber security, programming, Java, and other IT areas. With the breadth of experience provided by the academic instruction, the Avetec experience, and the connection to the national laboratory, students will be provided with many skills and practical experiences that can lead them down the IT pathway of their choice.

5. Demonstrates and documents demand for talent in industry

An EMSI analysis for the JobsOhio West Region, which includes both the Dayton and Springfield MSAs shows that IT jobs are growing at a fast pace and offer high wages for workers (includes SOC codes 15-11, 11-3021, and 17-2061).

<table>
<thead>
<tr>
<th>JobsOhio Dayton Region IT Occupational Demand</th>
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</tr>
</thead>
<tbody>
<tr>
<td>14,453 Jobs (2012)</td>
<td>7.1%</td>
</tr>
<tr>
<td>Annual Openings Estimate: 483</td>
<td>% Change (2012-2017): 1,033</td>
</tr>
<tr>
<td>$34.22/hr Median Earnings</td>
<td>National: $38.28/hr</td>
</tr>
</tbody>
</table>

Real-time job demand data suggests that the annual openings for IT workers may even be greater than the estimates provided through Labor Market Information. A search of current jobs posted to the Ohio Means Jobs web site indicate that in the Dayton and Springfield Metropolitan Statistical Areas (MSAs), almost 1,000 jobs are currently posted for IT workers, as illustrated in the table below.

<table>
<thead>
<tr>
<th>IT Jobs Currently Available in Dayton and Springfield MSAs</th>
</tr>
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<tbody>
<tr>
<td>SOC and Occupation Description</td>
</tr>
<tr>
<td>11-3021 Computer and Information Systems Managers</td>
</tr>
<tr>
<td>15-1021 Computer Programmers</td>
</tr>
<tr>
<td>15-1031 Computer Software Engineers Applications</td>
</tr>
<tr>
<td>15-1032 Computer Software Engineers Systems Software</td>
</tr>
<tr>
<td>15-1041 Computer Support Specialists</td>
</tr>
<tr>
<td>15-1051 Computer Systems Analysts</td>
</tr>
<tr>
<td>15-1061 Database Administrators</td>
</tr>
<tr>
<td>15-1071 Network and Computer Systems Administrators</td>
</tr>
<tr>
<td>15-1081 Network Systems and Data Communications Analysts</td>
</tr>
<tr>
<td>15-1099 Computer Specialists all other</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>

Source: EMSI [www.economicmodeling.com](http://www.economicmodeling.com)


Of the jobs listed on Ohio Means Jobs, 569 require a bachelor’s degree, 298 require an associate degree, and the remaining requires a mix of degree and experience. This program
gives associate degree students a leg up by allowing them to graduate with significant professional work experience to add to their resume.

**Institutions of Higher education – 30 points**

1. **Capacity: Institutions have capacity to meet proposed program requirements for employers, partners & students**

Clark State Community College in Springfield, Ohio offers IT degrees in computer networking, computer software development, cyber security, and geographic information systems (GIS). Through its partnerships with NSF, it has created a curriculum in high performance computing and cyber security and has provided its students with hands-on experience solving IT problems. The program’s lead faculty Dan Heighton has also worked directly with PNNL in “externships”—working with PNNL staff to understand IT challenges and bringing those experiences back to the other IT faculty and to the classroom.

The IT programs at Clark State enroll over 200 students. However, not all students are selected for the internship program. Students must apply to the program by completing an application form and submitting a resume with references. Students must also participate in a formal interview, perform a written assignment, prepare a short presentation, and complete a group interview and presentation. In addition, students must have a grade point average of 2.5 or higher. This rigorous process prepares students for the type of work they will be doing during the internship and identifies those that are most likely to succeed in the rigorous internship environment.

2. **Positions are transcripted or available for credit**

The internship program at Clark State will result in three semester hours of credit for participating students who complete the 400 hours of work.

3. **Includes outreach to populations traditionally underrepresented in the proposed area/s of co-op and internship program**

Participants in the Clark State/Avetec internship program reflect the community college population. During the past three summers, participants have been in the age range of 18-60. All of the students have been first-generation college students and have included dislocated workers, returning veterans, women, and minorities. Community colleges students are traditionally wedded to their local communities, thus these students have a very high retention rate for remaining in Ohio for their professional careers.

A team of Clark State students participating in the summer internship with Avetec were filmed for a show produced by Boston Public television state WGBH-TV. The story was featured in the Springfield News-Sun [http://www.springfieldnewssun.com/news/news/local/avetec-interns-filmed-by-boston-public-tv/nNnhB]. That interview resulted in this video clip featuring one of the internship’s participants, a first-generation college student from Springfield: [http://www.avetec.org/education/images/KristenEdwards.mp4].

4. Includes improvement to existing or creation of new high quality academic programs with a cooperative education or internship component

The Clark State/Avetec internship program has been based on continuous improvement. The nature of information technology requires its faculty to constantly be learning new software, technology platforms, and threats that make those systems vulnerable. The grant-funded work with the National Science Foundation has resulted in an effective curriculum that documents learning outcomes. Another NSF grant has been submitted to develop curriculum for high performance computing security, but Clark State has not yet been notified regarding the funding status.

5. Includes plan to connect employers and students via web, communications & marketing

Students and employers will be connected as part of the internship program. In addition to students' working at Avetec during the program, IT businesses across the region have offered to either host tours of their facilities as part of the program or come visit Avetec to mentor students. Based on this experience, employers have met with the students, accepted resumes, and made hiring decisions. At the end of the program – whether it be the “hackfest” or a technology demonstration – IT employers are invited to attend the events, where students are ready for impromptu questions and requests for resumes.

6. Program provides opportunities to students with small, mid-size and large business enterprises

Avetec and the other businesses that have engaged in the internship program have all been small- and mid-sized businesses, reflecting the composition of the IT companies in the Dayton/Springfield region. However, the largest IT employer in the region – Wright Patterson Air Force Base – has also engaged in the program by providing mentoring and by hiring students who have participated in the program. Please review the letters of commitment from small, mid-size, and large business enterprises.
<table>
<thead>
<tr>
<th>Activity</th>
<th>Total</th>
<th>Regents Funds</th>
<th>Private Funds</th>
<th>Applicant Funds</th>
<th>Education Partners</th>
<th>Other</th>
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<tr>
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<td>650000</td>
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</tr>
</tbody>
</table>

Add more rows at bottom.
Budget Narrative – Clark State/Avetec Internship Program

**Personnel.** Personnel costs include the cost of 3 adjunct faculty for the summer (estimated at $5,000/per faculty member) for $15,000, as well as additional administrative support to Clark State at $10,000. Match on personnel includes $25,000 from the grant funding from PNNL for two faculty who will assist with curriculum development and delivery. PNNL staff will offer mentoring and career services to students at an in-kind value of $6,000. Also included is $60,000 from Avetec for the time of its staff for planning, curriculum development, and coordination of the program as well as the evaluation and tracking.

**Supplies.** Supplies are calculated at $100/per students at 20 students, totaling $2,000. Costs only include consumable supplies. All computers and technology equipment will be provided in-kind by Avetec.

**Purchased Services.** Purchased services are budgeted at $10,000. This represents the cost of an adjunct faculty from a local career technical center who will provide support and be exposed to an "externship" opportunity to bring back his/her experience to the IT students enrolled in the CTC program.

**Travel.** No travel costs are included.

**Scholarships.** Clark State will provide a 3-hour credit for the students who participate in the program. Cost for the credit is $398.25 for 20 students, totaling $7,965.

**Employer Salaries.** This amount is the cost of the salaries to the students. The PNNL salaries will cover the 8 students at a rate consistent with their internal pay scale, totaling $34,000. Avetec will also pay 2 students at a rate consistent with their internal pay scale, totaling $14,565. The remaining 18 students will be paid at a rate of $10/hour for the 400 hours of the program, totaling a cost of $72,000. Woolpert will provide $14,400 for a partial cost, while the remaining $57,600 is requested in OBR funding.

**Other Employer Contributions.** Avetec will share the cost of the space for the internship program. Based on an established state rate, 150 square feet will be used at a cost of $16/square foot per month for 2.5 months. This cost of $6,000 will be shared by Avetec for $3,000 and charged to the cost of the program for $3,000.

**Indirect:** An 8 percent indirect cost rate is charged to the project for a total of $8,320.

**Total:** Total project costs are calculated at $239,341. Of this total cost, $105,920 is requested from OBR, $95,465 will be matched by private employers. Clark State will cover $7,965 of the project costs, and the remaining $65,000 will be provided through grant funds from the Pacific Northwest National Laboratory.
MEMORANDUM FOR Zach Waymer  
Director, Experiential Learning & Outreach  
Ohio Board of Regents  
30 East Broad Street, 36th Floor  
Columbus, OH 43215-3414  

FROM: AFRL/RCM  
2435 Fifth Street  
Wright-Patterson AFB OH 45433-7802  

SUBJECT: Clark State Cybersecurity Internship  

Dear Mr. Waymer  

We strongly support the “Ohio Means Internships & Co-ops” proposal that is being submitted by Clark State Community College for its Information Technology Cybersecurity internship program with Avetec.  

The Clark State/Avetec internship program provides students with hands-on experience that enhances their traditional instruction and prepares them for careers in IT. Students gain exposure to a professional work environment and the hands-on technical IT and business skills far beyond what could be learned in a classroom alone. We have had the opportunity to host students at our facility for informational tours and to sponsor internships and know that the experience is invaluable, especially in the very specialized field of high performance computing for Wright-Patterson Air Force Base.  

We need skilled and experienced employees who can meet the high expectations for in computing and IT fields. The students who participate in the Clark State/Avetec internship program are a great source of talent, and are of interest to us as potential employees for vacancies which we may have after they graduate.  

Sincerely,  

LLOYD W. SLONAKER, JR.  
Chief, Advanced Technologies Section  
AFRL DOD Supercomputing Resource Center
October 10, 2012

Mr. Zach Waymer, Director
Experiential Learning & Outreach
Ohio Board of Regents
30 East Broad Street, 36th Floor
Columbus, OH 43215-3414

Re: Avetec – Clark State Community College Internship Program

Dear Mr. Waymer:

NetGain is pleased to support the "Ohio Means Internships & Co-ops" proposal that is being submitted by Clark State Community College for an Information Technology internship program with Avetec.

The Clark State/Avetec internship program provides students with hands-on experience that enhances their traditional instruction and prepares them for careers in IT. Students gain exposure to a professional work environment and the hands-on technical IT and business skills far beyond what could be learned in a classroom alone.

Scott Eckard is a NetGain associate who graduated from the Avetec Internship program. We need more skilled and experienced employees in IT related fields, such as Scott.

The students who participate in the Clark State/Avetec internship program are a great source of talent; we will continue to consider them as potential employees after graduation for vacancies which we may have in IT, such as Desktop Technicians, Network Engineers and related positions.

Therefore, we unequivocally support the Clark State – Avetec internship program proposal as a wise investment by the state of Ohio.

Sincerely,

Michael G. Minnick
CEO
October 10, 2012

Zach Waymer
Director, Experiential Learning & Outreach
Ohio Board of Regents
30 East Broad Street, 36th Floor
Columbus, OH 43215-3414

SUBJECT: Peerless Endorsement of the Clark State/Avetec Internship Program

Dear Mr. Waymer,

Peerless Technologies Corporation (Peerless) supports the “Ohio Means Internships & Co-Ops” proposal that Clark State Community College is submitting for an Information Technology (IT) Cyber Security internship program with Avetec. We believe the program provides students with hands-on experience that enhances their traditional instruction and prepares them for careers in IT.

This past summer Peerless hosted the internship team for a day of learning about our company and our business requirements. We found that students in the program gain exposure to a professional work environment and learn technical IT and business skills far beyond what a classroom can provide. In addition, we know that programs allowing students to see and understand real-world corporate operations are vital—such programs ensure that the best and brightest students in Ohio remain here as they graduate and begin their careers.

Peerless needs skilled and experienced employees in computing, cyber security, and other IT fields. We believe that Clark State/Avetec internship program participants are a great source of talent, and we see them as potential employees upon their graduation.

Sincerely,

Jerry Tittle
Vice President, Business Development
October 11, 2012

Zach Waymer  
Director, Experiential Learning & Outreach  
Ohio Board of Regents  
30 East Broad Street, 36th Floor  
Columbus, OH 43215-3414

Dear Mr. Waymer:

The Cascade Corporation is pleased to support the "Ohio Means Internships & Co-ops" proposal that is being submitted by Clark State Community College for an Information Technology internship program with Avetec.

Cascade has worked with the Clark State/Avetec internship program in the past and has provided tours of our operations and discussions with our executives about corporate requirements of our company. The program provides students with hands-on experience that enhances their traditional instruction and prepares them for careers here in Springfield. Students gain exposure to a professional work environment and the hands-on technical IT and business skills far beyond what could be learned in a classroom alone.

We need skilled and experienced employees in IT and related computer support fields. We will consider Clark State graduates for vacancies which we may have.

Sincerely,

Darlene Carpenter  
Human Resources Manager
October 10, 2012

Zach Waymer
Director, Experiential Learning & Outreach
Ohio Board of Regents
30 East Broad Street, 36th Floor
Columbus, OH 43215-3414

Dear Mr. Waymer,

The Dayton Development Coalition supports the Ohio Means Internships & Co-ops proposal that is being submitted by Clark State Community College for its IT internship program with Avetec. Filling the gap for skilled IT workers is critical to the growth and development of the Dayton Region and the industries that drive its economy.

The expansion of this program to include more students will mean that more of the Dayton Region's employers will need to know about the talent pipeline that Clark State and Avetec are filling and be engaged in supporting the program so that it can be sustainable in future years.

With the DDC's connection to area businesses, start-up companies, and new businesses that may be recruited to the area, we will help the internship program build a bridge to IT companies that will benefit from and support this effort as it continues to grow and be sustained by private sources.

We look forward to this opportunity.

Sincerely,

Jeff Hoagland
President and CEO
October 12, 2012

Zach Waymer
Director, Experiential Learning & Outreach
Ohio Board of Regents
30 East Broad Street, 36th Floor
Columbus, OH 43215-3414

Dear Mr. Waymer,

Avetec will serve as the business lead partner for the Clark State/Avetec Internship Program. In that role, Avetec will collaborate with Clark State to engage with other IT business to identify internship projects, develop curriculum, identify and recruit participants, and follow-up with all evaluation, placement of students, and tracking of outcomes. For those activities, Avetec will provide the services of Cathy Balas, the executive director of educational programs, as an in-kind match of $60,000.

In addition to this contribution, Avetec will also fully support the salary for two interns during the ten-week project, using the internal pay scale, which totals $14,565.

Internship activities will be conducted at Avetec in Springfield, using computers, fiber, servers, and many other technological equipment. Cost for the space during the internship period is estimated at $3,000. Avetec will share the cost of the space, at an in-kind match of 3,000. This is based on a rate previously established with the Ohio Department of Administrative Services.

In addition to its role as an educational collaborator, Avetec has also employed internship participants. Avetec will look to the internship talent pool to fill any IT staffing needs that it may have on future projects.

We look forwarding to working on this important project.

Sincerely,

[Signature]

James Mainord
Avetec Director of Business Development and Contracts
October 12, 2012

Zach Waymer  
Director, Experiential Learning & Outreach  
Ohio Board of Regents  
30 East Broad Street, 36th Floor  
Columbus, OH 43215-3414

Dear Mr. Waymer

Staffmark is pleased to support the "Ohio Means Internships & Co-ops" proposal that is being submitted by Clark State Community College for an Information Technology internship program with Avetec.

The Clark State/Avetec internship program provides students with hands-on experience that enhances their traditional instruction and prepares them for careers in IT. Students gain exposure to a professional work environment and the hands-on technical IT and business skills far beyond what could be learned in a classroom alone.

We need skilled and experienced employees in communications, IT, and related fields. We will consider Clark State potential employees after graduation for placement into vacancies with Springfield/Dayton area companies in IT related positions.

Sincerely,

Cindy K. Anderson  
Staffmark  
Professional Services Division  
(937) 903-4693
October 11, 2012

Ohio Means Internships and Co-Ops  
University System of Ohio  
Board of Regents  
30 East Broad Street, 36th Floor  
Columbus, Ohio 43215-3414

Dear Ohio Means Internships and Co-Ops Staff:

Woolpert is pleased to commit matching funds from non-state resources for Clark State Community College proposal for the Ohio Means Internships and Co-Ops that is being funded in part by the State of Ohio. Established in 1911, Woolpert is a design, geospatial and infrastructure management firm that integrates services and applies technologies to benefit its federal, local/state and private sector clients.

Woolpert is committed to a cost-share match of $14,400.00 and $3,500.00 in soft funds. We have in the past hired Co-Op students from Clark State’s Geospatial Program and feel that it is a very important aspect on a student’s education and close the skills gap that might exist and give the students a competitive edge when they reach the job market. In fact, since we started the program two years ago, we have hired the Clark State Co-Op students as full-time staff at Woolpert.

We look forward to continue and grow our existing relationship with Clark State Community College.

Sincerely,

Jeff S. Lovin, CP  
Senior Vice President and Director, Geospatial Services
October 11, 2012

Zach Waymer
Director, Experiential Learning & Outreach
Ohio Board of Regents
30 East Broad Street, 36th Floor
Columbus, OH 43215-3414

Dear Mr. Waymer

The Greater Springfield Chamber of Commerce is pleased to support the “Ohio Means Internships & Co-ops” proposal that is being submitted by Clark State Community College for an Information Technology internship program with Avetec.

The Chamber is fully dedicated to increasing the number of technology jobs we have in our region and we know how important it is to have a skilled workforce to attain that goal. The Clark State/Avetec internship program is a perfect example of the public/private partnership that is needed to assure that our students in Clark County gain the skills needed to help technology businesses grow and thrive in the community. The program provides students with hands-on experience that enhances their traditional instruction and prepares them for careers by putting them into a professional work environment, giving them hands-on technical IT and business skills far beyond what could be learned in a college classroom.

We need skilled and experienced employees in IT and related computer support fields. We will consider Clark State potential employees after graduation for vacancies which we may have and we will assist Clark State and Avetec in making connections with current and future businesses needing these skilled employees.

Sincerely,

Michael J. McDorman
President and CEO
Cybersecurity Intern

Summary: The internship will take place at Avetec, 4170 Allium Court, Springfield, Ohio 45505. Some projects may take place at its Dayton office located near or on Wright Patterson Air Force Base. The internship projects will be unclassified projects involving research and hands-on cybersecurity networking and information systems management.

Depending on the projects assigned, some interns may be focused on using, supporting, developing applications for, and instructing others on a specialized software package called Palantir, using Java and other programming languages.

Skills/ background desired:

- Major or minor in computer networking, cyber-security, computer programming, computer science or a related field; students with other majors who have strong writing and computer/internet research skills and interest in the project may be considered.
- Interested in exploring careers in an IT fields.
- Ability to quickly learn to develop and analyze a complex database.
- Ability to use standard computer equipment and software tools
- Ability to quickly learn new software applications including Palantir and other specialized solutions (please see https://analyzetech.us/ and https://www.optradestop.com/welcome/ to get a preview of Palantir)
- Savvy on use of the internet and other open sources for research
- Able to work with minimal supervision as a team member to research, collect data and analyze complex problems
- Outstanding skills and interest in documenting work and preparing complex written analytical and technical reports
- Ability to make oral presentations
- Must be highly motivated and interested in information technology
- For some projects, Java or other programming is preferred

Other requirements:

- must be available 10 to 20 hours per week in the school year or from 8:00-5:00 daily during the summer and have some flexibility for other hours as needed
- must have outstanding attendance and time management skills
- must have reliable means of transportation to Avetec
- must submit a college transcript and a sample of a written work.
- prefer a minimum of 3.00 GPA; others considered based on circumstances.
Avetec Intern Performance Evaluation Form

Student Name: ____________________________

Review Date: ____________________________

Rating System:

U= Unsatisfactory/Needs to be addressed
ME= Meets expectations
EE= Above and beyond/extraordinary event
N/A= Not applicable
NOTE: A "ME" rating is considered to be the norm.

_____ Punctuality
_____ Resourcefulness
_____ Maturity
_____ Communication
_____ Willingness to learn
_____ Organization / Appearance

_____ Quality independent work
_____ Adherence to deadlines
_____ Completion of assigned team goals
_____ Acceptance of criticism
_____ Effective / quality work with others
_____ Seeks and uses feedback

Explain in detail any areas where improvement is needed or any areas of extraordinary performance:

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

Review any other things beyond those mentioned above that the intern should work on to change or improve.

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

Is there anything the intern identifies that needs attention regarding the team or project?

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________
Identify anything “above and beyond” and explain what occurred:


Intern’s signature and date


Mentor’s signature and date
Effort Evaluation Descriptors

Student: ____________________________  Work Being Evaluated: ____________________________  (project or assessment period)

Personal Product Quality

- 7. My product(s) for this evaluation is/are of Top Quality for me.
- 5. My product(s) for this evaluation is/are of Very Good Quality for me.
- 3. My product(s) for this evaluation is/are of Good Quality for me.
- 1. My product(s) for this evaluation is/are of Fair Quality for me.
- 0. My product(s) for this evaluation is/are of Unacceptable Quality for me.

How Much I Challenged My Abilities

- 7. I greatly challenged my limits and lifted my skills to a new level.
- 5. I pushed my limits and extended my skills quite a bit.
- 3. I pushed my limits some and extended my skills some.
- 1. I worked within my limits and extended my skills a little.
- 0. I worked completely within my limits and showed no growth in my skills.

Learner Rating

- 7. I learned by being self-directed, asking and/or pursuing my own questions, and went beyond the task requirements.
- 5. I learned independently, frequently asking questions of teacher/peers and seeking out resources, and met all the task requirements.
- 3. I learned partly on my own, occasionally asking questions of teachers/peers and seeking out resources, and met most task requirements.
- 1. I learned mostly when I was being assisted, rarely asking questions of teachers/peers or seeking out resources, and met few of the task requirements.
- 0. I learned only when assisted, never asking questions of teachers/peers or seeking out resources, and met few of the task requirements.

Preparedness to Learn

- 7. I was consistently on task and had necessary materials for class, was a leader in discussions and in group/class tasks, and displayed an exemplary attitude.
- 5. I was consistently on task and had necessary materials for class, frequently participated in discussions and shared fairly in group/class tasks, and displayed a cooperative, hard working attitude.
3. I usually was on task and had necessary materials for class, occasionally participated in discussions, and sometimes contributed to group/class tasks, and displayed a generally cooperative but not very hard working attitude.

1. I was rarely on task and seldom had necessary materials for class, participated little in discussions, and did not contribute to group/class tasks, displaying an uncooperative attitude.

0. I was not on task and did not have the necessary materials for class, did not participate in discussions, and did not contribute to group/class tasks, displaying a negative attitude.

Acceptance of Responsibility

7. I did all of my work and handed it in on time, and showed excellent self-management of my behavior.

5. I did all of my work on time, and handed most of it in on time, and showed good self-management of my behavior.

3. I did most of my work on time, and handed most of it in on time, and showed fair self-management of my behavior.

1. I did some of my work on time, and handed some of it in on time, showed poor self-management of my behavior.

0. I did none of my work on time, did not hand it in on time, and did not self-manage my behavior.