## Proposal Cover Sheet

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Integrating Kent State University Learning Experiences and Business Work Experiences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Location/s</td>
<td>Kent State University and Northeast Ohio</td>
</tr>
<tr>
<td>Project Start Date</td>
<td>01/01/2013</td>
</tr>
<tr>
<td>Interns/Co-ops Start Date</td>
<td>01/22/2013</td>
</tr>
<tr>
<td>Lead Applicant</td>
<td>Name and Address of Postsecondary Institution</td>
</tr>
<tr>
<td></td>
<td>Kent State University</td>
</tr>
<tr>
<td></td>
<td>P.O. Box 5190</td>
</tr>
<tr>
<td></td>
<td>134 Cartwright Hall</td>
</tr>
<tr>
<td></td>
<td>Kent, OH 44242-0001</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>Lori Burchard, Director Sponsored Programs</td>
</tr>
<tr>
<td></td>
<td>P.O. Box 5190</td>
</tr>
<tr>
<td></td>
<td>134 Cartwright Hall</td>
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<td></td>
<td>Kent, OH 44242-0001</td>
</tr>
<tr>
<td></td>
<td>Tele: 330-672-2070</td>
</tr>
<tr>
<td></td>
<td>FAX: 330-672-7991</td>
</tr>
<tr>
<td></td>
<td>Email: <a href="mailto:lburchar@kent.edu">lburchar@kent.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>Austin C. Melton</td>
</tr>
<tr>
<td></td>
<td>P.O. Box 5190</td>
</tr>
<tr>
<td></td>
<td>Mathematics and Computer Science Building</td>
</tr>
<tr>
<td></td>
<td>Kent, OH 44242-0001</td>
</tr>
<tr>
<td>Amount of state money requested</td>
<td>$932,500</td>
</tr>
<tr>
<td>Match money committed</td>
<td>$946,750</td>
</tr>
<tr>
<td>Number of internships/co-ops proposed</td>
<td>288</td>
</tr>
<tr>
<td>JobsOhio key industry/ies impacted</td>
<td>Advanced Manufacturing, Aerospace, Financial Services, Information Technology, Polymers</td>
</tr>
<tr>
<td>Are any of the applicants represented by a member of the</td>
<td>No</td>
</tr>
</tbody>
</table>
Advisory Committee?

Legal Applicant

Name: Kent State University

Address: P.O. Box 5190, 134 Cartwright Hall

City: Kent Zip: 44242-0001

Phone: 330-672-2070 Fax: 330-672-7991 E-Mail: leffon@kent.edu

CEO Name: President Lester Leffon

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: 

Name and Title: Lori Burchard, Director Sponsored Programs

Date: 10/12/2012

2) Administering Entity
Agency Name: Kent State University

Address: P.O. Box 5190, 134 Cartwright Hall

City: Kent Zip: 44242-0001 Phone: 3330-672-2070

Fax: 330-672-7991 Contact Person: Lori Burchard

Title: Director, Sponsored Programs E-Mail: lburchar@kent.edu

3) Business Partners (please submit separate information for each partner)
Company Name: See attached pages for Business Partner list

Address:

City: Zip: Phone:

Fax: Contact Person:

Title: E-Mail:

5) Educational Partners (please submit separate information for each partner)
Name: N/A

Address:

City: Zip: Phone:
Business Partners (please submit separate information for each partner)
Company Name: Akron Polymer Systems, Inc
Address: 62 North Summit Street
City: Akron, Ohio Zip: 44308-1941 Phone: (234) 678-8696
Fax: (234) 678-8593 Contact Person: Matthew J. Graham
Title: VP of Business Development E-Mail: info@akronpolysys.com

Business Partners (please submit separate information for each partner)
Company Name: Alphamicron Inc
Address: 1950 State Route 59
City: Kent, Ohio Zip: 44240-2628 Phone: (330) 676-0648
Fax: (330) 676-0649 Contact Person: Bahman Taheri
Title: Chief Executive Officer E-Mail: bahman@alphamicron.com

Business Partners (please submit separate information for each partner)
Company Name: Assurance Investment Management, LLC
Address: 1920 Georgetown Road
City: Hudson, OH Zip: 44236 Phone: (330) 650-1750
Fax: () Contact Person: Albert LaCava
Title: President E-Mail: albert.laca@assureim.com

Business Partners (please submit separate information for each partner)
Company Name: AtNetPlus
Address: 1000 Campus Drive, Suite 700
City: Stow, OH Zip: 44224 Phone: (330) 945-5685
Fax: (330) 945-5684 Contact Person: Jay Mellon
Title: Partner E-Mail:

Business Partners (please submit separate information for each partner)
Company Name: Bialosky & Partners
Address: 2275 South Moreland Blvd Shaker Square
City: Cleveland, OH Zip: 44120 Phone: (216) 752-8750
Fax: (216) 752-9437 Contact Person: Jack A. Bialosky, Jr.
Title: Senior Principal E-Mail:
Business Partners (please submit separate information for each partner)
Company Name: Bostwick Design Partnership
Address: 2729 Prospect Ave
City: Cleveland, OH Zip: 44115 Phone: (216) 621-7900
Fax: (216) 621-4632 Contact Person: Robert Bostwick
Title: President and Director of Design E-Mail:

Business Partners (please submit separate information for each partner)
Company Name: Richard L. Bowen Associates, Inc.
Address: 13000 Shaker Blvd
City: Cleveland, OH Zip: 44120 Phone: (216) 491-9300
Fax: (216) 491-8653 Contact Person: Richard L. Bowen
Title: President E-Mail:

Business Partners (please submit separate information for each partner)
Company Name: Braun & Steidl Architects
Address: 1041 West Market St
City: Akron, OH Zip: 44313 Phone: (330) 864-7755
Fax: (330) 864-3691 Contact Person: Charles L. Schreckenberger
Title: President E-Mail: cschreckenberger@bsa-net.com

Business Partners (please submit separate information for each partner)
Company Name: CBLH Design, Inc.
Address: 7850 Freeway Circle
City: Cleveland, OH Zip: 44130 Phone: (440) 243-2000
Fax: (440) 243-3305 Contact Person: Timothy S. Hunsicker
Title: Principle E-Mail: thunsicker@cblhdesign.com

Business Partners (please submit separate information for each partner)
Company Name: The Collaborative Inc.
Address: 500 Madison Avenue
City: Toledo, OH Zip: 43604 Phone: (419) 242-7405
Fax: (419) 424-7400 Contact Person: Dan J. Tabor
Title: Architect/Principle E-Mail: dtabor@thecollaborativeinc.com
Business Partners (please submit separate information for each partner)
Company Name: Crystal Diagnostics
Address: 510 Compton St., Suite 106
City: Broomfield, CO Zip: 80020 Phone: (720) 351-4900
Fax: (720) 351-4910 Contact Person: Dan Minardi
Title: CTO E-Mail:

Business Partners (please submit separate information for each partner)
Company Name: Echogen Power Systems, LLC
Address: 365 Water St
City: Akron, OH Zip: 44308 Phone: (234) 542-4379
Fax: () Contact Person: Laurie Skul
Title: Director of Finance E-Mail: lskul@echogen.com

Business Partners (please submit separate information for each partner)
Company Name: Explorys, Inc.
Address: 10000 Cedar Ave, MS 10
City: Cleveland, OH Zip: 44106 Phone: ()
Fax: (888) 688-5514 Contact Person: Doug Meil
Title: Chief Software Architect E-Mail:

Business Partners (please submit separate information for each partner)
Company Name: Richard Fleischman + Partners Architects, Inc.
Address: 1020 Huron Road Suite 101
City: Cleveland, OH Zip: 44115 Phone: (216) 771-0090
Fax: () Contact Person: Richard Fleischman
Title: President E-Mail:

Business Partners (please submit separate information for each partner)
Company Name: First Energy Corp.
Address: 76 S. Main St.
City: Akron, OH Zip: 44308 Phone: (800) 736-3402
Fax: () Contact Person: Tonya L. Horn
Title: College Recruiting Program Lead E-Mail:
Business Partners (please submit separate information for each partner)
Company Name: Graph SQL, Inc.
Address: 277 Martinel Drive, Suite 203
City: Kent, OH Zip: 44240 Phone: (614) 271-5623
Fax: () Contact Person: Jin, Ruoming
Title: CTO E-Mail:

Business Partners (please submit separate information for each partner)
Company Name: Hasenstab Architects, Inc.
Address: 190 North Union St Suite 400
City: Akron, OH Zip: 44304 Phone: (330) 434-4464
Fax: (330) 434-8546 Contact Person: Dennis M. Check
Title: President E-Mail:

Business Partners (please submit separate information for each partner)
Company Name: Hengst Streff Bajko Architects, Inc.
Address: 1250 Old River Road, Suite 201
City: Cleveland, OH Zip: 44113-1243 Phone: (216) 586-0229
Fax: () Contact Person: Robert Bajko
Title: E-Mail:

Business Partners (please submit separate information for each partner)
Company Name: Herschman Architects, Inc.
Address: 25001 Emery Road, Suite 400
City: Cleveland, OH Zip: 44128 Phone: (216) 223-3200
Fax: (216) 223-3210 Contact Person: Mike Chrislip
Title: President E-Mail:

Business Partners (please submit separate information for each partner)
Company Name: Kent Displays Incorporated
Address: 343 Portage Blvd
City: Kent, OH Zip: 44240 Phone: (330) 673-8784
Fax: (330) 673-4408 Contact Person: Albert Green
Title: Chief Executive Officer E-Mail:
Business Partners (please submit separate information for each partner)
Company Name: Kordalski Architects Inc.
Address: 2026 Murray Hill
City: Cleveland, OH Zip: 44106 Phone: (216) 229-3399
Fax: (216) 229-7181 Contact Person: Steven Kordalski
Title: E-Mail: steve@kordalskiarchitects.com

Business Partners (please submit separate information for each partner)
Company Name: Makovich & Pusti Architects, Inc.
Address: 111 Front St
City: Berea, OH Zip: 44017-1912 Phone: (440) 891-8910
Fax: (440) 891-0086 Contact Person: David J. Pusti
Title: Vice President E-Mail: dpusti@mparc.com

Business Partners (please submit separate information for each partner)
Company Name: Phillip Markwood Architects, Inc.
Address: 240 North Fifth St, Suite 140
City: Columbus, OH Zip: 43215 Phone: (614) 461-8300
Fax: (614) 461-8302 Contact Person: Phillip T. Markwood
Title: President E-Mail:

Business Partners (please submit separate information for each partner)
Company Name: Robert Maschke Architects Inc.
Address: 6421 Detroit Avenue
City: Cleveland, OH Zip: 44102-3011 Phone: (216) 281-6421
Fax: (216) 281-9200 Contact Person: Robert Maschke
Title: Principle E-Mail:

Business Partners (please submit separate information for each partner)
Company Name: Meilen Tool Company
Address: 5555 Venture Drive
City: Cleveland, OH Zip: 44130 Phone: (216) 362-4200
Fax: (216) 362-4230 Contact Person: Rob Wise
Title: HR Manager E-Mail:
Business Partners (please submit separate information for each partner)
Company Name: National Aeronautics and Space Administration
Address: John H. Glenn Research Center Lewis Field
City: Cleveland, OH Zip: 44135-3191 Phone: (216) 977-7135
Fax: () Contact Person: Robert Shaw
Title: Deputy Director, Office of technology Partnerships and Planning E-Mail: Robert.J.Shaw@nasa.gov

Business Partners (please submit separate information for each partner)
Company Name: Northeast Ohio Council on Higher Education
Address: 1422 Euclid Ave, Suite 840
City: Cleveland, OH Zip: 44115 Phone: (216) 420-9200
Fax: (216) 420-9292 Contact Person: Ann Womer Benjamin
Title: Executive Director E-Mail: awomerbenjamin@noche.org

Business Partners (please submit separate information for each partner)
Company Name: Perspectus Architecture
Address: 13212 Shaker Square, Suite 204
City: Cleveland, OH Zip: 44120 Phone: (216) 752-1800
Fax: (216) 752-3833 Contact Person: William Ayars
Title: Principle E-Mail:

Business Partners (please submit separate information for each partner)
Company Name: Price Builders & Developers
Address: 23103 Miles Rd, Suite 200
City: Cleveland, OH Zip: 44128 Phone: (216) 475-8112
Fax: (216) 475-8113 Contact Person: David Price
Title: President/CEO E-Mail:

Business Partners (please submit separate information for each partner)
Company Name: Summa Health System
Address: 525 East Market St
City: Akron, OH Zip: 44309-2090 Phone: (330) 375-3000
Fax: () Contact Person: Greg Kall
Title: System Vice President E-Mail:
<table>
<thead>
<tr>
<th>Business Partners (please submit separate information for each partner)</th>
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<tbody>
<tr>
<td><strong>Company Name:</strong> TC Architects, Inc.</td>
</tr>
<tr>
<td><strong>Address:</strong> 755 White Pond Dr, Suite 401</td>
</tr>
<tr>
<td><strong>City:</strong> Akron, OH</td>
</tr>
<tr>
<td><strong>Zip:</strong> 44320</td>
</tr>
<tr>
<td><strong>Phone:</strong> (330) 667-1093</td>
</tr>
<tr>
<td><strong>Fax:</strong> (330) 667-4198</td>
</tr>
<tr>
<td><strong>Contact Person:</strong> Robert Chordan</td>
</tr>
<tr>
<td><strong>Title:</strong> President</td>
</tr>
<tr>
<td><strong>E-Mail:</strong> <a href="mailto:rchordan@tcarchitects.com">rchordan@tcarchitects.com</a></td>
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<td><strong>Company Name:</strong> TDA Architecture</td>
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<tr>
<td><strong>Address:</strong> 4135 Erie Street</td>
</tr>
<tr>
<td><strong>City:</strong> Willoughby, OH</td>
</tr>
<tr>
<td><strong>Zip:</strong> 44094</td>
</tr>
<tr>
<td><strong>Phone:</strong> (440) 269-2266</td>
</tr>
<tr>
<td><strong>Fax:</strong> (440) 269-2277</td>
</tr>
<tr>
<td><strong>Contact Person:</strong> Robert A. Fiala</td>
</tr>
<tr>
<td><strong>Title:</strong> Managing Partner</td>
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<tbody>
<tr>
<td><strong>Company Name:</strong> Telerik, Inc.</td>
</tr>
<tr>
<td><strong>Address:</strong> 1790 Stoney Hill Drive</td>
</tr>
<tr>
<td><strong>City:</strong> Hudson, OH</td>
</tr>
<tr>
<td><strong>Zip:</strong> 44236</td>
</tr>
<tr>
<td><strong>Phone:</strong> (888) 365-2779</td>
</tr>
<tr>
<td><strong>Fax:</strong> ()</td>
</tr>
<tr>
<td><strong>Contact Person:</strong> Michelle M. Smith</td>
</tr>
<tr>
<td><strong>Title:</strong> Executive Vice President, Services</td>
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<th>Business Partners (please submit separate information for each partner)</th>
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<tr>
<td><strong>Company Name:</strong> The Timken Company</td>
</tr>
<tr>
<td><strong>Address:</strong> 1835 Dueber Ave Southwest</td>
</tr>
<tr>
<td><strong>City:</strong> Canton, OH</td>
</tr>
<tr>
<td><strong>Zip:</strong> 44706</td>
</tr>
<tr>
<td><strong>Phone:</strong> (330) 471-6406</td>
</tr>
<tr>
<td><strong>Fax:</strong> ()</td>
</tr>
<tr>
<td><strong>Contact Person:</strong> Dan Muller</td>
</tr>
<tr>
<td><strong>Title:</strong> Senior Vice President and CIO</td>
</tr>
<tr>
<td><strong>E-Mail:</strong> <a href="mailto:daniel.muller@timken.com">daniel.muller@timken.com</a></td>
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<th>Business Partners (please submit separate information for each partner)</th>
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<td><strong>Company Name:</strong> Tribute, Inc.</td>
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<tr>
<td><strong>Address:</strong> 1696 Georgetown Road</td>
</tr>
<tr>
<td><strong>City:</strong> Hudson, Ohio</td>
</tr>
<tr>
<td><strong>Zip:</strong> 44040</td>
</tr>
<tr>
<td><strong>Phone:</strong> (330) 656-3006 ext. 277</td>
</tr>
<tr>
<td><strong>Fax:</strong> ()</td>
</tr>
<tr>
<td><strong>Contact Person:</strong> Tim Reynolds</td>
</tr>
<tr>
<td><strong>Title:</strong> President</td>
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E-Mail:
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<tr>
<th>Business Partners (please submit separate information for each partner)</th>
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<tbody>
<tr>
<td>Company Name: True Wealth Advisors, LLC</td>
</tr>
<tr>
<td>Address: 84 Village Way</td>
</tr>
<tr>
<td>City: Hudson, OH Zip: 44236 Phone: (330) 714-9336 Fax: ()</td>
</tr>
<tr>
<td>Contact Person: Karin Maloney Stifler</td>
</tr>
<tr>
<td>Title: President E-Mail: <a href="mailto:Karin@truewealthadvisors.com">Karin@truewealthadvisors.com</a></td>
</tr>
</tbody>
</table>
Abstract: Integrating Kent State University Learning Experiences and Business Work Experiences

The business sector in Northeast Ohio is varied and represents most categories in the JobsOhio Key Industries listing. Kent State University has strong relationships with many of these large and small companies and through this grant funding will expand and enhance existing relationships and create new ones. The businesses that fall into the categories of Aerospace, Advanced Technology, Financial Services, Information Technology and Polymers are facing a shortage of skilled employees in both the short and long term. In order for these firms and the economy of Ohio to continue to grow, these firms need more knowledgeable workers; however, finding and training these workers can be an expensive and long process. Allowing companies to work with and help train prospective workers while they are still students is a cost effective way of supplying these knowledgeable workers and simultaneously ensuring that the workers and the companies are productive partners. The cost effectiveness of employing interns also enables companies to invest in other expensive and innovative activities.

To better prepare our students to easily transition from the classroom to the business place and to contribute to improved and more effective business work environments in Ohio, we at Kent State University will strengthen our existing internship programs, develop new internship programs, and enhance how we as a university interact with businesses in the education of our students as they prepare to enter and contribute to Ohio businesses.

We will identify best internship practices on our eight-campus system so that as appropriate we can incorporate these practices across our eight-campus system. We will strongly encourage all students to either enroll in a credit course associated with or related to the internship or have the internship transcripted to ensure the quality of the experience and gain needed feedback from businesses. We will improve our intern tracking systems to help us learn about new opportunities and develop a strong feedback loop between the university and companies. We will work with these companies to improve our educational activities both in the classroom and in the internship experiences so that our students can positively impact their businesses and others in Ohio.

We understand that businesses are ideally positioned to help us learn and understand what our students need to know to successfully begin and then grow their careers. Thus, we plan to use our students’ internship experiences to work more closely with businesses to improve our curricula and to use the business contacts to develop real and relevant projects and examples for our classes. Additionally, we will establish an Internship Advisory Board to help us improve our internship experiences and to create a university environment which more naturally promotes and encourages the integration of business experiences into our curricular activities. To help our students have better and more effective internships, we will work with the Northeast Ohio Council on Higher Education (NOCHE) to develop materials and programs to assist companies in beginning and improving internship opportunities and to assist students in preparing for internships.
Proposal: Integrating Kent State University Learning Experiences and Business Work Experiences

Program Snapshot

JobsOhio Key Industry or Industries: Advanced Manufacturing, Information Technology, Polymers, Aerospace, Financial Services

Number of Co-ops/internships created: 288 (13 Graduate, 275 Undergraduate)
Number that meet High Demand Occupations: 261

Amount of state money requested: $932,500.00

Amount of match money obtained: $946,750.00

Total state money requested divided by number of co-ops/internships created (in whole dollars): $3,238.00

Total match money obtained divided by number of co-ops/internships created (in whole dollars): $3,287.00

Total money (state plus match) divided by number of co-ops/internships created (in whole dollars): $6,525.00

Number of business partners: 36
Number of higher education partners: 0
Number of other partners: 0

Programmatic

1. By way of business connections made through our internship students, we will develop ongoing discussions with business representatives and use the expertise they provide to modify and update our curricula, assuring that our students will be better prepared to enter the business workforce. The intent of these discussions is to create an environment in which university instruction and needed workplace expertise develop hand-in-hand. The relationships developed with our internship partners will add to the feedback that is obtained about students’ abilities and knowledge. This feedback will be reviewed on an on-going basis to ensure that students are gaining the knowledge and skills that will serve them and their employers. An example of how this synergistic relationship can work for the university, employer and State of Ohio, is demonstrated through the internship program proposed by Kent State University’s Liquid Crystals Institute (LCI). Liquid crystal displays, invented at Kent State University, have changed our world. The now ubiquitous LCD is a direct result of fundamental research at the LCI probing the optoelectronic properties of these unique materials. LCD technology was developed on rigid glass substrates, due in part to the requirement of precise geometric constraints. Today, we are on the threshold of a paradigm shift: the migration of liquid crystal technology from rigid glass to light flexible plastics. This emerging “liquid crystals on plastic” (LCOP) technology has the potential to fundamentally change LCDs everywhere. The LCI at Kent State University, and its four partner companies AlphaMicron, Kent Displays, Crystal Diagnostics and Akron Polymer Systems are at the vanguard of this new technology. The strategic importance of this emerging technology to the development of new industry and job creation has been recognized by the Ohio Third
Frontier Program in awarding a 2012 IPP grant to this consortium. As in the early days of LCDs, the fundamental science of liquid crystals and their technological development are inextricably linked. However, knowledge of basic liquid crystal science is not sufficient to create new LCOP devices. The demands and challenges of device development require additional engineering skills which must be acquired before the employee becomes productive, capable of contributions at their highest level. The proposed internship program sets out to address this need.

Other areas in the University also rely on northeast Ohio industries to help provide our graduates with requisite skills and motivation to stay in Ohio. Currently, the Department of Management and Information Systems in the College of Business Administration sponsors the Center for Information Systems (CIS). The CIS, which meets regularly throughout the academic year, brings together information systems business leaders and faculty members and students to discuss issues related to the students’ preparation to enter the business work environment and the businesses’ preparation for mentoring the new generation of employees. As Kent State University moves forward in creating more internship opportunities for our students, we will simultaneously promote and foster more interactions between businesses and the university similar to the model provided by the CIS activities.

2. Students will experience, through preparatory activities and an internship, the integration of business (practice) and education (knowledge). These experiences will help students understand that knowledge leads to and expands into creative and satisfying business and entrepreneurial opportunities and will provide them with the incentives to complete their degrees in order to fully participate in their envisioned careers. This integration of business and education also should lead our graduates to appreciate the necessity to be life-long learners – an appreciation that will benefit them, their workplaces and the communities in which they reside. National data also indicate that students who complete a degree are more likely to remain in that state - 70% of college graduates live in the same state as their college five years after graduation and 61 percent 10 years after (Brookings – Education, Job Openings, and Unemployment in Metropolitan America, August 2012, p. 21). Internships will help increase retention and graduation rates leading to keeping talent in Ohio.

3. Businesses use internships to help them in hiring, and students use them to help find good jobs. National data from NACE indicates that 58.6% of the Class of 2011 interns were converted to full-time hires. Data from in the Pay Rates and Practices Survey conducted by ECO/ NOCHE (May 2012, p. 4) indicate that 57% of local employers offered employment (if available) to their interns and the majority of employers (70%) offer at least some of their interns employment. Also, only 42.3% of organizations in Northeast Ohio have a formal internship or co-op program but 80% of employers surveyed indicated they had hired interns at some point. This grant will enable us to help organizations establish formalized programs that can help the region come more in line with the national numbers for conversions from internships to full-time hires. This also will help with the retention of graduates in Ohio. Students who get internships in Ohio will be more likely to find jobs in Ohio and to stay in Ohio. Additionally, the more we can develop the on-going dialog and connections between businesses and the university, the more likely our students will want to stay in Ohio to take advantage of the benefits of these connections. An additional result of these connections and discussions may be a greater realization of the potential importance of the educational part of the business-university integration. Typically, the educational interactions between businesses and universities tend to end at graduation. However, in a world in which almost
continual learning is helpful, if not a necessity, there is potential for much more business-university integration.

Currently in the College of Applied Engineering, Sustainability and Technology 2/3 of the students completing internships get jobs with the companies where they interned. NEOSA conducts an annual Best of Tech Awards Survey. One of the questions asked, in the survey, deals with the percentage of interns who return to that company for employment. One of the respondents stated: "...we think it is important to recognize talent in our interns and invite them to return. If the student is still pursuing his education, we will invite him to return the following summer. Or, if the student is graduating, [we] will make a full-time offer following her completion of the degree. In 2010, we offered full-time positions or additional internships to 80% of [our] interns. On average, 90% of interns who receive full-time offers following their internships, will accept and continue on as permanent employees.”

The graduate Chemical Physics Interdisciplinary Program (CPIP) at Kent State University housed in the Liquid Crystals Institute, trains, together with colleagues from Physics, Mathematics, Chemistry and Biology, scientists in liquid crystal science. Many of the graduates of CPIP work in large high-tech companies, such as Apple and Samsung; others are employed by our partner companies in northeast Ohio. Through collaboration with these partner companies and others, it has become clear that, although the understanding of liquid crystal science is an essential skill for company employees, it is not sufficient. The demands and challenges of device development require additional engineering skills which must be acquired before the employee becomes productive, capable of contributions at their highest level. The proposed internship program sets out to address this need.

4. We are developing our internship program to be self-sustaining in that we are using some of the funds to improve and develop an internship user-friendly environment on campus. Once this structure starts operating in our departments and colleges, it will not need additional support to continue. Also, as the businesses see that supporting internships gives them a natural “in” with the university in addition to a very good workforce now and in the future, they will want to continue having interns. In fact, not only will the KSU structure and the created internships sustain themselves, this environment will naturally grow by attracting additional businesses to work with KSU via internships.

Activities for developing a user-friendly environment that promotes a sustainable program include:

- A university-wide marketing plan that emphasizes the benefits for students participating in experiential learning activities and internships
- Additional promotion to employers through Northeast Ohio Council on Higher Education (NOCHE)
- Clear application procedure
- Formalized preparation of students prior to internships built around those characteristics that employers use to select interns and hire new employees (e.g., professionalism, interpersonal/communication skills, work ethics, career goals - 2012 ERC/ NOCHE survey). This will occur through the auspices of the KSU Career Services Center and the academic departments and colleges.
- Review of all internship postings for adherence to the standards set by NACE for internships as learning experiences (see Appendix C1)
• Tracking system to ensure employer/university/intern feedback and academic credit or transcription
• Feedback loop within academic departments and/or colleges (e.g. College of Business Administration)
• Employer workshops provided by NOCHE and developed in conjunction with KSU Career Services Center to help companies provide interns with a quality learning experience based on the NACE standards
• University Internship Advisory Board which will be created and will be an important part of the feedback loop to provide information to academic departments on curricular skill needs
• Partnership with NOCHE to provide an internship wage reimbursement program to small companies.

5. Financial and performance metrics.

The following metrics are examples of what will be tracked by academic units, KSU’s Office of Research, Planning and Institutional Effectiveness (RPIE) and NOCHE, in order to assess program effectiveness, to respond to the Regents’ reporting requests, and to assist in continually improving our internship experiences and in improving and enhancing our interactions with businesses:
• Number of new internship opportunities provided to students in OhioJobs categories
• Number of students applying for and completing internships
• Number of internships converted to full-time hires
• Number of students completing internships for academic credit
• Number of students completing internships for transcripted credit
• Number of paid internships and rate of pay
• Satisfaction of participants with the internship experience
• Changes in curricula based on feedback from internship participants and employer mentors

6. A logical and prudent budget with high and immediate ROI is included. (See Appendix A)
More than half of the private funds ($488,410.00 out of $946,750.00) will go directly to the student employees for their services performed for the companies which hire them. These wages and professional positions will create the bonds between Ohio students and Ohio business that will encourage both employees and businesses to stay and grow in Ohio. The remaining $458,380.00 which will be used for training, supervision, and resources will help ensure that the internship experiences are effective in enabling the interns to develop and improve their job related skills so that they are productive as interns and skilled professionals upon graduation.

A significant majority of the state funds ($707,000.00 out of $932,500.00) will also go to students for their services performed. Thus, these funds will strengthen the bonds between student interns and Ohio businesses and the State of Ohio. Kent State University has an Office of Experiential Education and Civic Engagement. This office is a driving force in making experiential learning an integral part of all curricula across our eight-campus system. Many of these experiences are unpaid and unsupported. $40,000.00 from the $707,000.00 will be used to support these experiences in positions which are in the JobsOhio key categories. KSU has the Center for Entrepreneurship and Business Innovation which encourages and promotes entrepreneurship among students. This center is an ideal springboard for students who have ideas which could be turned into Ohio businesses.
$20,000.00 of state funds will be used to support promising entrepreneurial ideas for businesses in the JobsOhio key categories.

The Liquid Crystal Institute (LCI) is the best known and most influential institute at KSU, and it has been extremely successful in fostering and nurturing start-up companies. To help LCI continue these activities $24,845.00 will be used for LCI technical trainers and training supplies. The Northeast Ohio Council on Higher Education (NOCHE) is a regional catalyst for business-academic interactions, and thus, NOCHE is ideally suited to help businesses learn how to accept and nurture interns and for preparing students to be successful interns. $40,000.00 of state funds will be used by NOCHE to create an internship friendly environment in local businesses and to prepare materials, e.g., learning videos, which may be used in the short-term and long-term by students preparing for internships.

Two student assistantship positions will be funded with state funds for a total of $33,400.00. One student in the College of Architecture will help the college and faculty in the college place and monitor interns. Placing and monitoring architecture interns is time-intensive due to professional requirements placed on professionally recognized internships. The other student assistantship position will assist the project PI in creating a self-sustaining infrastructure at KSU and a growing and self-nurturing relationship between the northeast Ohio business community and KSU.

The two months support for the project PI ($39,481.00) along with the support for the PI’s student assistant is for the development of the infrastructure and the business-KSU relationships. The infrastructure will include improved advertising and monitoring of internships both university-wide and in departments and colleges, sharing best practices across our eight-campus system, and integrating internships naturally and completely into our curricula. The development of business-university relationships means setting up lines of communication between key business leaders and university personnel so that business leaders may influence curricular decisions and university faculty and staff may share in business developments. An Advisory Committee will be formed to assist the PI and the university in creating the infrastructure and the business-university relationships. $8,000.00 is requested for travel for the Advisory Committee members to one meeting per term, and for travel for the PI to professional internship meetings and for recruiting businesses to become part of the KSU internship community. In addition $2,000.00 for web site development, and $2,000.00 for recruitment materials, brochures etc.

7. Part of the internal KSU structure that is being developed is a dynamic structure which creates and encourages interactions with businesses via and for the sake of the students involved. These cyclic interactions and feedback among and to all parties involved will provide for continuous improvement in the curricula and the internship experience. As an example, the College of Business Administration will solicit information, on a continuing basis, regarding employers’ and students’ satisfaction with the internship experiences and their suggestions for improvement. The information obtained from these surveys will be shared with every department through the College of Business Administration Undergraduate Curriculum Committee and the College of Business Administration Department Chairs. Once the information is shared college-wide, review and action will take place accordingly. Currently the College of Business Administration is using a form that provides minimal feedback (See Appendix C2) which they will improve to provide more relevant data.
Liquid Crystals Institute (LCI), in conjunction with their four partner companies, will develop hands-on laboratory instruction to prepare interns for the workplace. Instructional materials will be developed based on feedback and evaluation of intern performance from the companies and will be shared on-line.

8. Businesses that have committed to support Kent State University in this endeavor are in major occupational groups that are projected to see a rise in position availability as noted in Item 5 below. The Liquid Crystal Internship Program will contribute to the success and growth of local high-tech LC related industries, our partner companies and others, thereby contributing to job creation and economic well-being of Ohio. It is anticipated that interns may also form start-up companies, similarly to how our four partner companies were started, and firmly establish the development and manufacture of a wider range of flexible electronic devices in a variety of applications in Ohio.

Employer

1. For many if not all the Jobs Ohio areas, the challenge is not whether businesses have the capacity to meet any reasonable requirements from students, educators, and additional partners in an internship experience. The challenge is in providing the opportunity for meaningful dialogue between business and universities - dialogue that will enable universities to improve how they prepare students to respond to the needs of businesses. For example, there are IT businesses and businesses with large IT departments which have operated under the assumption that they need go out of Northeast Ohio to recruit IT employees. However, the universities know that we have good, high-quality IT students. This proposal addresses this challenge by using internships as a way to develop meaningful dialog between businesses and universities. Additionally, the employers' commitments made in support of this proposal are testament to the needs in these areas. (See Appendix B)

2. The experiences provided to students during internships are varied, meaningful and align with Jobs Ohio. One way of ensuring the quality of these experiences is through the training that NOCHE will provide to potential internship providers (See Appendix C3) and in adherence to the characteristics of a quality internship developed by NACE. Currently KSU ensures that employers abide by its Recruiting Policy which includes a statement that "Career Services abides by the Principles for Professional Practice set forth by the NACE." These Principles include the Position Statement on U.S. Internships and a Faculty Guide to Ethical and Legal Standards in Student Hiring. The content of each internship position is reviewed prior to posting.

For example, intern assignments in Liquid Crystal Engineering may include:
- Clean room procedures
- Basic microfabrication techniques
- Electronics and drive scheme development
- Materials characterization using scanning electron microscopy (SEM), transmission electron microscopy (TEM) and atomic force microscopy (AFM)
- Electro-optical device characterization
- Modeling electro-optical systems

In Advanced Technology, interns learn company operations from the floor up in such areas as:
- tool and die correction
quality assurance
process design

In Information Technology, interns learn how to:

- Be part of a business/corporate culture, including how to dress and act appropriately for the specific business where they work and the type of business.
- Be a productive member of a team, in particular, how to be a productive member of a programming team in which each team member needs to successfully do his/her part in a way so that all the parts may be combined into a successful whole.
- Communicate which includes for the intern to learn how to clearly express his/her ideas and how to ensure that he/she clearly understands what others are saying or writing.
- Respect and support others and how to be respected and supported.

Additionally, depending on specific area or areas of IT, the intern will learn, for example, about database or data mining or Internet applications.

Assignments for architecture, architectural studies and design interns might include:

- Cataloging material samples
- Performing CAD drawing corrections
- Assisting in running a job meeting on a construction site
- Participating in the conceptualization of a building or interior space
- Selecting materials for a building or furniture selection
- Preparing a three-dimensional model of a proposed building or interior space
- Answering requests for information from contractors
- Writing the minutes of a client meeting
- Producing working drawings to issue to contractors

3. It is planned that all positions will be paid either by the sponsoring business or by the use of state funds. However, if a student really wants to work in a nonpaid position (maybe the student finds the position by himself/herself and feels the experience is what he/she needs or wants), the student will be encouraged to take a credit course along with the position or work with a faculty member to get the activity transcripted. NOCHE will help companies that wish to have an intern but have limited funds by matching up to $500 per intern for 150 interns. NASA is committed to 12 internships to help them develop a knowledge and practice-based workforce to serve their needs in Ohio. Funding will also be available to support nonprofit businesses that are in need of interns in such areas as financial services and information technology.

4. Examples of interns obtaining experience in different "functional areas" in the workplace during the internship are highlighted by the possible activities listed in #2 above. In IT this multiple functionality naturally occurs in two ways. IT is pervasive in that almost every type of business needs some IT expertise to function well. For example, there are IT interns working for reality agencies as web designers. These interns use their web development skills to promote the reality agency, and at the same time, they learn about the reality business so that they can support and advertise these businesses. There are IT interns working in banks to manage and support the databases and to improve automated interactions with customers. These interns are further developing and improving their
database and application skills while simultaneously developing their banking and human interaction skills. There are many cross-functional IT interns in positions like these.

Additionally, we have had IT interns who worked for small companies, and in addition to learning about databases or web development, the interns have helped set up intranets within the business itself so that different employees in the business may better communicate with each other and with printers and other devices in their office. Similarly, we have had IT interns become hardware "experts" by installing and working on computers and computing devices in their offices.

An interesting example of having multiple functional areas was an intern working for a non-profit business. The intern was hired to improve the business' web sites. However, while the intern was working there, the business' server was seriously attacked by a virus. The attacks were unusually severe and damaging. The intern was given the responsibility of solving the virus problem. He spent multiple weeks working on the problem and was eventually able to restore and protect the business' websites, and in the process, he became experienced in virus protection and prevention.

5. Businesses that have committed to support Kent State University in this endeavor are in major occupational groups that are projected to see a rise in position availability in Northeast Central Ohio (EDR 9) from 2012-2018. These groups include: Business and Finance Operations (11.0%), Computer and Mathematics (14.4%) and Technical (17.5%). Demand in architecture/design related fields is projected to increase nationally by 24% between 2010 and 2020.

Institutions of Higher Education

1. KSU has more than 40,000 students, and currently only a relatively small percentage of these students take part in internships. Thus, KSU has the faculty and student capacities to meet all program requirements. We will be providing additional support staff, on a part-time basis to handle the coordination and implementation of tracking and marketing activities. This staff support will include two business experience managers, two student assistants and one graduate assistant. NOCHE, in conjunction with KSU Career Services, will also provide resources to help companies prepare for providing a significant learning experience for students while serving in an internship. Besides the companies committing support to this grant, KSU has access to many other companies with internship opportunities. KSU Career Service posted over 1,000 internships during AY2011-12 and has over 4,500 active employer relationships. Among those relationships are Allstate, Diebold, Garick, Goodyear Tire and Rubber, Hyland Software, Progressive, Sherwin-Williams, FirstEnergy, Lubrizol, NASA, Omnova, PNC, Rosetta and Westfield. (See Appendix C4 for an example of an internship description)

2. Students, in some departments, may enroll in an internship class for credit. For all other departments we will allow students to transcript their internship experiences while working with a faculty member to ensure a high quality learning experience. This is currently done for students who complete KSU's Experiential Learning Requirement (ELR) through a non-course based activity. All departments, schools, and colleges will be encouraged to develop and offer internship classes for credit, and to make the taking of these courses a significant part of the learning experience. For example, we will encourage the development of internship courses for which the credit will count for upper division course work in the major.
During the past two years 1,756 KSU students were enrolled in internship and practicum courses.

3. By working with different student and faculty groups on campus, we will encourage traditionally underrepresented groups to become more active and supportive of internships. Additionally, we will work with businesses which have members from underrepresented groups in their leadership teams to encourage these businesses to hire interns. Also, we will invite business leaders from underrepresented groups to visit campus and meet with our students to encourage them to get internship positions. KSU also has a very vibrant Diversity Supplier Program that has the potential to provide internships for students and/or serve in a mentoring capacity.

4. One of our goals is to identify best practices for internships currently in place at KSU, and as appropriate use these practices across campus to improve existing internship programs and in the creation of new programs. This includes incorporating the characteristics of a quality learning experience as put forth by NACE.

5. Using social networks, KSU Career Services resources, academic advising, NOCHE resources (neointern.net), OhioMeansJobs.com and OhioMeansInternships.com, we will inform our students about internship opportunities. KSU Career Services Center provides an online recruiting system for current students and alumni, the Experience Job and Internship Board, for employers to post internship opportunities and for students to register, upload a resume, and apply to position openings. Other recruiting services provided to bring employers and students together include annual fall and spring job and internship fairs, on-campus interviewing, information Tables/Sessions in the Kent Student Center, online resume books, and facilitation of collaborations with faculty and student organizations. These opportunities will include informing students of the possibility of being able to make internship experiences part of their university experience, letting students know that the university can help them find internship positions, and notifying them of specific positions. Perhaps, more fundamental and more effective will be letting students know of internship classes and transcription possibilities by including such information on our academic program roadmaps. On these roadmaps we can also indicate appropriate times in a student’s career for engaging in internships.

6. Relationships developed by staff of KSU Career Services Center and faculty have given students access to large companies such as Allstate, Progressive, Smuckers, etc. Relationships with associations such as Northeast Ohio Software Association (NEOSA) and Council of Smaller Enterprises (COSÉ) provide KSU with the opportunity to forge relationships with small to mid-size companies that will benefit them and the state’s economy. To help those small companies that could benefit from having interns but cannot afford to pay the salary of an intern, KSU will partner with NOCHE to provide support through an internship wage reimbursement program. Employers will pay wages to an intern and the wages would be matched up to $500.00 per intern. This will help to engage small JobsOhio companies, providing them with needed interns and potential well-trained and committed employees. NOCHE will manage the reimbursements for KSU.