FALL 2010

From the Director:
Almost Centennial

A few days ago, someone from our engineering development office brought over some historical documents on Pitt's cooperative engineering education program dating back to 1918. For those of you not up on the history of Pitt, in 1910 we actually instituted the third co-op program in the nation, right behind the University of Cincinnati and Georgia Institute of Technology. It got me thinking that this would have been the centennial celebration of Pitt co-op, had the Great Depression not suspended the program back in the early 1930s.

We recently went through what some have coined the “Second Great Depression”. Believe me, we all felt, and are still feeling, the effects of the economy on our students. The good news, however, is that the Pitt Co-op Program plans to be around for a long time to come!

I don’t know how difficult things were back during the Great Depression. My mother told me of strangers who would come to their back door, asking for a meal. Everyone hung on as well as they could, and from what my parents tell me, those who had shared with those who did not have. I can well use that same analogy with our Co-op Program.

There are no words to thank our many employers who did everything they could to continue their co-op programs during these tough times. We also send a special thank-you to the many new employer partners who have joined with us over the past two years. Further, we anticipate the return of companies who had to suspend their hiring for a period of time. We know you look forward to that, too, and through thick and thin, we value our partnerships with each of you.

This fall term, we have an unprecedented number of students out working—almost 200 Pitt co-op students are out there making their mark. We could not do this without our great students, faculty, and employers.

We thank you all.

Co-operative Education Fall 2010 Job Fair

Wednesday, September 29, 2010
William Pitt Union
8:30 a.m.–1 p.m.
Job Fair Recruiting Event
Employers meet students informally to answer questions, and review and collect student résumés. Employers may set up same-day interviews or contact students later in the term.
1–5 p.m.
Optional Interviews
Employers have the option of conducting individual interviews on site.
Co-op Job Fair information and online registration can be accessed through our Web site, www.engr.pitt.edu/coop.

Mark Your Calendars! Cooperative Education Spring 2011 Job Fair

Monday, February 7, 2011
William Pitt Union
10 a.m.–2 p.m.
Job Fair Recruiting Event
2–5 p.m.
Optional Interviews

Co-op Is Movin’ on Up

The Cooperative Education office is back in Benedum Hall, on the newly remodeled first floor! Conveniently located and housed with Engineering Student Services, students are now able to make one stop for co-op and a host of other services.

Our industry partners will enjoy two new interviewing suites—a first for the program. Employers are welcome and encouraged to visit campus, and we'll set up both in-person and phone interviews at their convenience.

The new office space offers students privacy for co-op consultation, résumé critiquing and mock interviewing. Feel free to visit at any time, as co-op maintains its open door policy. Just stop by the front desk and ask for co-op in Room 1520D. No appointment is ever needed!

Jeff Brinkhaus, a computer engineering co-op student, makes adjustments to a circuit board.

In 1912, electrical engineering co-op students built this portable device to conduct a series of experiments on radio telegraphy.
Co-op Student of the Year, and Employer of the Year

It is time once again to think of nominations for both Co-op Student of the Year and Co-op Employer of the Year. We appreciate any and all nominations.

The criteria for Co-op Student of the Year are as follows:

1. Excellent academic record
2. Outstanding work contributions with co-op employer (students must have three rotations completed)
3. Volunteerism or contributions to co-op or University community. Ideally, we would like to have one nominee from each department. The University of Pittsburgh can select one candidate to represent us in the National Co-op Student of the Year competition, which is sponsored by the Cooperative Education Division of the American Society for Engineering Education. The winner will be sent to San Antonio, Texas, in February 2011 to receive recognition at the annual conference.

of receiving a plaque and a check for $500. We have won this award twice and have had many outstanding finalists.

The criteria for Co-op Employer of the Year are as follows:

1. Sustained commitment to cooperative education at the University of Pittsburgh
2. Quality of projects and assignments
3. The Co-op Employer of the Year and all Pitt Co-op of the Year nominees will be honored at our annual dinner, scheduled for Friday, December 10, 2010, at the Pittsburgh Athletic Association.

We look forward to accepting your nominations. Nominations must be received by Friday, October 15, 2010.

Please contact Maureen Barcic at paul2m@pitt.edu if you are interested in submitting a nomination or if you have questions about the nomination process.

Alumni Hall of Fame: A Word from Andrew Bilitski (BSE ’09)

(The following is an excerpt from Andrew’s graduate survey)

I currently work for Allegheny Power, in the Transmission Planning Department. We plan and do initial designs of high-voltage transmission lines, and my department is also responsible for a multibillion dollar budget. I work out of Fairmont, W.Va., and live in Morgantown, W.Va. (I know, I know, I am behind enemy lines, but that makes it more exciting when Pitt beats them!). I live with two other EE’s who both went to Pitt with me and got jobs with Allegheny as well.

Before I graduated, I applied to four other power-related jobs and got offers from all of them! This all happened in January of 2009 and I didn’t even graduate until August. I know my co-op experience, especially my international co-op experience, is what set my résumé apart from other applicants.

I recently passed the FE exam and plan on getting my PE in about 3 years. I’m currently enrolled in an online GMAT prep course, and I’m going to take that test early next year in hopes of starting my MBA a year from now.

Please let me know if you need any more info, or if any current students would like or need any info on my experiences or current situations. I’d be more than happy to discuss the international portion of my co-op and/or classes I took that all my interviewers were really interested in. I hope this message doesn’t come across as condescending or boasting, but I definitely struggled at the beginning of my engineering career in college and would love nothing more than to help committed students achieve similar success.

Andrew can be reached via Facebook

Spotlight on Schroeder Industries

Schroeder Industries’ corporate headquarters are located in Pittsburgh, Pa., with manufacturing facilities in the Pittsburgh location as well as in Cumberland, Md. Schroeder has been a leader in fluid condition technology for 60 years. Schroeder designs, manufactures, and markets innovative filtration solutions for hydraulic, lubrication, process, and biodiesel systems. Holding 38 patent awards on engineered products, Schroeder remains at the forefront in the fields of fluid conditioning, diagnostics, and specialized energy products. We are proud to have engineering students from the University of Pittsburgh working at our company!

“I enjoy being a Pitt co-op student at Schroeder Industries in Leetsdale, Pa. because it is the best way to receive real-world experience and an education at the same time. When I recognize a topic in class that I have seen at work, I have more motivation to study and learn the material because I know that I will use it in the future at work. Having engineering-specific work experience before I graduate helps better my job offers for when I am searching for a job after college. Simply having an income, and bills and dealing with the responsibilities of money is easing my transition to adulthood. At my co-op job, I have had a variety of experiences running efficiency tests on prototype products, designing modifications to improve current filters, participating in ISO audits, helping to correct and follow ISO procedures, etc. My job at Schroeder Industries is a great combination of design and hands-on experience that makes me look forward to my next co-op rotation.”

Noah Erin
Mechanical Engineering Co-op Student
Schroeder Industries

“ I know my co-op experience, especially my international co-op experience, is what set my résumé apart from other applicants.”

Andrew Bilitski
Pitt Co-op Alumni, BSEE ’09
The MSA Co-op Experience: Saving Lives through Engineering

Engineers at MSA (Mine Safety Appliances Co.) are responsible for creating life-saving products, infusing vigor and efficiency into industrial processes, and bridging the gap between present and future life-saving technologies.

This summer, Alex Keylin, a senior at the University of Pittsburgh majoring in Mechanical Engineering and minoring in Bioengineering, re-joined MSA as a co-op. Although most of his classes at Pitt covered complex ideas and technical details, Alex’s four co-op rotations at MSA have revolved around a much simpler topic: breathing. It’s a basic enough concept, but in high-pressure, toxic environments where breathing becomes unlikely, impossible, or unsafe, MSA “The Safety Company”—and Alex—make breathing possible.

As a member of The Guysata Volunteer Fire Department of O’Hara Twp, PA, Alex uses MSA products on a regular basis. In addition to MSA helmets and handheld gas detectors, his department also uses the self-contained breathing apparatus (SCBA) developed by MSA engineers with the support of engineering co-op students. “This product lets firefighters breathe clean, cool air in an environment full of hot, toxic gases” Alex said. “Many rescue operations are possible because firefighters wearing SCBA can reach people who have been overcome by smoke.”

Alex handled the product frequently as a firefighter, but he still had a lot to learn about SCBA when he came to MSA. And learn he did! His first rotation began with familiarization with MSA lab equipment, testing procedures and products. During subsequent rotations, Alex was able to immerse himself in the development and mechanical aspects of the SCBA.

“For me, the most rewarding thing was being able to design testing fixtures and product components. For me, this process tied together many theoretical tasks, including conceptualization, evaluation, design and prototyping, the part where I was able to apply what I’ve learned in a classroom. The process itself is interesting, and when it’s complete, it’s a great feeling to see a machine you designed working,” Alex said. “Also, I was glad to work on products that make a big difference in people’s lives.”

This sense of making a difference and saving lives is what provides MSA engineers with a common purpose as they work to design and improve products that protect police officers, soldiers, construction workers, industrial workers, and of course, firefighters. MSA is, indeed, “making the world safer, one person at a time.”

Accelarate!

Your education, your experience, and your career with a company that is challenging an entire industry.

c3controls might be just the company for you. Big enough to compete globally but still a place where your contribution can make an impact.

At c3controls, you will find no obstacles limiting your growth and achievement. What you can accomplish depends only on your desire, dedication, and effort.

Since 1976, c3controls has been a leading manufacturer of electrical control products with a diverse customer base consisting primarily of original manufacturers of industrial control equipment, including those that manufacture machine tools, food processing equipment, conveyors, packaging machinery, printing trades machinery, wastewater treatment equipment, switchgear utilized process, packaging, waste water management, and petrochemical industry segments. These companies use our products in industrial applications for the control or regulation—or both—of power use apparatuses, including motors.

In an industry dominated by traditional distribution channels, c3controls stands as the only manufacturer selling electrical control products factory direct. It’s our approach that makes us different. Customers depend on us to get what they want, when they need it, at a price that dramatically improves their profitability. Our ability to accomplish this reliably has fueled growth that is outpacing the industry. And we have fun doing it!

A new generation of leadership continues to enhance c3controls’ position as the direct marketing leader in the industry. The company continues to grow as a result of our ongoing commitment to investing in product development, facility enhancement; and, most importantly, talented people.

We are committed to your success and will work with you to develop a program for advancement that creates mutually beneficial opportunities for development.

Our product development and engineering team maintain an ongoing co-op program. We are always looking for capable and dedicated students who are committed to applying their talents and skills in a dynamic, challenging, and supportive environment.

c3controls’ paid co-op program is a key component of our organizational development effort. Students accepted into the program are mentored through the program and challenged to contribute to the success of the company. Those demonstrating superior capability and character are extended career opportunities with c3controls.

We encourage you to come and visit with a c3controls employee, explore available opportunities, and discover why c3controls is a co-op and career choice like no other.

“ For me, the most rewarding thing was being able to design testing fixtures and product components...it’s a great feeling to see a machine you designed working. Also, I was glad to work on products that make a big difference in people’s lives.”

Alex Keylin
Mechanical Engineering Co-op
MSA
PJ Dick, Trumbull, and Lindy Paving Offer Co-op Opportunities

The PJ Dick, Trumbull, and Lindy Paving family of companies offers a co-op experience unlike any other. Through our companies, students get the chance to explore the construction industry from a unique view. Our co-op program is mutually beneficial, because not only do we help to transition students into the world of working professionals, but we also have the opportunity to evaluate each student as a potential future employee of our companies. We give them actual work assignments and assimilate them into the project as we would a regularly hired employee.

The co-op experience usually takes place for a limited time during the last two years of an accredited college degree program. Our program is designed to offer students a chance to experience working for a leading construction firm on actual projects while building skills and knowledge to enhance their education. The students we hire experience many different aspects of the construction industry, from working with a subcontractor in the field to collaborating with engineers or being involved in estimating a bid. Several of our co-op participants had a once-in-a-lifetime experience working on the construction of the CONSOL Energy Center as well as the North Shore Connector Station and Tunnel. These are just a couple of examples of interesting multimillion dollar projects that you could be involved in. If you are interested in applying for the co-op program, please visit our booth at the fall 2010 Co-op Job Fair on Wednesday, September 29, from 8:30 a.m. to 1 p.m. We also will be attending the Pitt Career Fair on September 30th from 10 a.m. to 4 p.m.

“Working at Trumbull Corporation has proved to be a great asset toward further developing my professional career. The Co-op Program has enabled me to work closely with engineers in various departments, allowing valuable insight into the world of construction. This experience has been a perfect complement to my college education.”

Paroma Saha
Intern and Co-op Student, 2009 and 2010
Trumbull Corporation

Students on a job site with co-op employer PJ Dick

“My experience as an intern at Trumbull Corporation showed me the ins and outs of a construction company. The experience helped me to make a decision about my career that college alone could not provide.”

Angelo Castellano (BSE '03)
Hired for a full-time engineering position with Trumbull Corporation

“This assignment contributed to my professional development in a big way by allowing me to see what a job in construction would be like. It helped me to find what I like and don’t like about the field, and it will also help me when making future career decisions.”

Mike Quarantillo
Co-op Student, 2010
Trumbull Corporation
Solar Energy Powers Laptops?

Well, not really. But if you’ve purchased a laptop recently, there is a chance that solar energy powered a portion of the transportation of that laptop to your home or store. In reality, there is a chance that many of the products you purchased recently, particularly from the East Coast, have used green power in a portion of the transportation supply chain. FedEx Ground has entered the solar renewable energy field in a big way.

Since December 2009, FedEx Ground has been receiving electrical power from the largest rooftop solar energy system in North America. The system, installed on the roof of its New Jersey distribution hub, has a capacity of 2.42 megawatts. The system, which consists of over 12,000 photovoltaic solar panels covering more than three acres of roof, is expected to produce approximately 2.8 million kilowatt-hours of electrical energy per year. That energy is enough to supply about 30 percent of the distribution hub’s annual electricity needs.

According to the U.S. Environmental Protection Agency (EPA), the 2.8 million kilowatt-hours of electricity is enough to power almost 250 average U.S. homes for one year. This green power production will reduce CO2 emissions by more than 2,000 metric tons annually, equivalent to removing more than 350 automobiles from the roads for a year, or eliminating consumption of more than 4,500 barrels of oil. The 2,000 metric tons is equivalent to the amount of carbon captured by more than 400 acres of pine trees. Without this solar power system, more than 51,000 tree seedlings would need to be planted and grown for 10 years to remove as much CO2 from the atmosphere as is eliminated in one year by receiving power from this one solar power generation system.

FedEx is not through, either, as a second rooftop installation is ready to begin at its Southern California distribution hub. More projects will follow.


There is much more to FedEx Ground than just trucks. Its application and development of technological advances has been a cornerstone of the company since its founding in 1985. Engineering and technology opportunities abound in this strong Pittsburgh-based company with a bright future.

Solar power helped to ship your latest purchase around the country—who would have guessed?

Hankook Tire

Hankook Tire – Akron Technical Center, located in Uniontown, Ohio, has had a successful co-op program in place for the past seven years. The University of Pittsburgh is considered one of our “core universities” when considering students for our co-op program. Hankook focuses on universities whose programs and quality of education suits our various needs.

Hankook’s goal is to help students by providing work experience and training. The students spend “terms” working within the various groups, e.g., engineering, laboratory, and testing. In return, the co-op program provides the company with potential candidates for full-time employment upon graduation.

Hankook has chemical engineering students work in our Material Development Department. Students learn about the materials and polymers used to optimize the performance of tires for wear, traction and fuel economy. Students learn about the engineering properties of polymeric materials; everything from simple stress-strain to sophisticated techniques to determine internal heat build-up (hysteresis) and tribological properties (friction and wear).

Students are usually given specific projects that help them learn about various aspects of tires. Students participate in product testing, including activities at proving grounds with professional test drivers to evaluate the handling and traction of experimental tires. They have also had the opportunity to evaluate new polymers with unique chemical structures.

Mechanical engineers support product development, analytical evaluation of tires, and product testing.

The University of Pittsburgh Co-op program is based on linking classroom knowledge and hands-on professional experience. The university currently has a student, Bradley Lyons, participating in Hankook Tire’s Co-op program. In the process of interviewing, Brad selected companies that best combined those two key aspects of the co-op experience. Hankook Tire provided exactly that, in the course of interviewing companies, Brad "was highly impressed and intrigued with the amount of information and work that goes into making new tires. My decision to work at Hankook was an easy one, seeing that I would have the ability to perform hands-on work in a lab setting and learn a vast amount of new information while utilizing my classroom knowledge. I highly encourage future co-op students to consider Hankook Tire in their search for employment."

"My decision to work at Hankook was an easy one, seeing that I would have the ability to perform hand-on work in a lab setting and learn a vast amount of new information while utilizing my classroom knowledge."

Bradley Lyons
Chemical Engineering Co-op
HERL’s Assistive Technologies offer opportunities for co-op

Jon worked on the “HyPOV,” a hybrid low-cost power wheelchair, this summer. To preserve comfort and increase stability, he developed and tested an active suspension system on the prototype HyPOV chair. The system consisted of a tilt switch, Magnetorheological (MR) Damper, and circuitry for the power supply. Static stability and dynamic stability tests were conducted to see if the system activated before the chair tipped and to see if the chair would achieve a similar stability rating for the same test as the chair received with the MR Dampers fully engaged. A conceptual model of a low-cost linear brake was also developed to take the place of the MR Damper and possibly be retrofitted to existing power mobility devices in the future.

The Human Engineering Research Laboratories focuses on the design, development (rehabilitation engineering), and evaluation of products in the assistive technology fields. Rehabilitation engineering employs a systematic approach to the design, modification, customization and/or fabrication of assistive technology for persons with disabilities. Research efforts in rehabilitation engineering are focused on identifying and addressing problems critical to achieving and maintaining the highest possible level of function in areas related to mobility, communications, sensory (e.g., hearing, tactile, vision), and cognition and in activities associated with employment, independent living, and education.

The primary objective of our co-op program is to provide an exemplary mentoring and resourceful environment that enables undergraduate students to 1) transition from dependent to independent thinkers, 2) develop a sense of excitement about entering an engineering or technical field, especially related to assistive technology and 3) be well prepared for their future careers.

Jonathan Duvall (pictured, bottom right), a senior ME student, completed his co-op at Human Engineering Research Laboratories (HERL). Here, Jon is pictured in one of HERL’s machine shops with other participating students. He was selected to speak at a student research symposium on behalf of his work with HERL.

"It made me aware of how design works, and also has given me a good understanding of what grad school would be like. The assignment was great for a mechanical engineer."

Advice from the Hiring Experts Employer Panel

This fall term several co-op alumni, hiring managers, and human resources professionals visited the brand-new first floor of Benedum Hall to offer advice and answer questions to sophomores and juniors looking to participate in the Co-op Program. “We receive so many questions from students as to what employers are expecting when they go to the job fair or start interviewing,” stated Chris Frankovic from the Co-op Program, “that we decided to host an employer panel so students can hear straight from the source!”

Seven co-op employers were in attendance, and the event was moderated by Tony Mobley from ANSYS, Inc. Mobley has offered a fall workshop for students for several years and also was able to offer his input during the panel discussion. Topics such as résumés, job fairs, interviewing, accepting a co-op position, and even what employers expect once students actually start a co-op position were addressed.

Special thanks to the employers who attended the panel: ANSYS, Curtiss-Wright, Mascoo, Mine Safety Appliances, Spartech, Verizon, and Westinghouse.