The new College of Engineering and Applied Science magazine needs a name worthy of our educational and research excellence. CEAS has nearly 200 years of engineering innovation and application of technology expertise — this publication deserves a title that merits our position as a global leader in engineering and technology.

What is the right name?

Deadline for submission: July 29, 2011
Submit entries at: www.ceas.uc.edu/NameContest

- Winning submission by a student wins a $500 scholarship
- Winning submission by alumni or faculty wins a class (3 credit hours) at UC or a $500 scholarship awarded in their name to a current CEAS student.

In the event of duplication, the winner will be determined by a drawing to be held on August 1.

Name to be chosen by panel of judges chaired by Dean Montemagno.
Dean shares vision for multidisciplinary engineering experience

The College of Engineering and Applied Science is continuing its journey into the future by leaps and bounds. For the past 20 years or so, our curricula have been good, standard-issue engineering courses with occasional forays into a new world. In the meantime, computing, communications and just about every other business or engineering venture has undergone massive changes. Add to that an all-out effort to make campuses more attractive to students who expect more in the way of activities and physical plant, ever-rising tuition and fees and unrelenting budget cuts, and it is clear that the landscape for every college of engineering in the nation has changed substantially. To meet the new challenges head on, we are marching beyond satisfactory to great by exercising the imagination that will take us into new territory.

This leap required a change in mindset and a firm grasp on a set of interesting boundary conditions. I want our students to have a broad experience that is multidisciplinary and yet coherent. Therefore, I asked faculty to develop a curriculum that is the same for students in every discipline for the first two years — an insurance policy that will keep students from losing time and money if they change majors — and will also establish a core of competencies that will define a UC engineer. This is our integrated engineering curriculum, and it will whet their appetites for engineering much earlier in their time at UC. It will also give students a broader perspective on engineering, including how the fields of engineering interconnect.

A further step in this direction will be to embed materials science in the curricula of all of the other disciplines, and to this end, materials faculty are joining colleagues with similar interests in other schools. Similarly, computing is such a vital part of all engineering disciplines that it is being integrated into every single degree program. Some computer science faculty are moving to the School of Electronics and Computing Systems to facilitate closer research collaborations.

Finally, the various technology thrusts are being combined into one engineering technology program — not a new idea, certainly, but one that will provide students with more choices and a more complete educational experience. The changes in curriculum and administrative structure will provide more flexibility and facilitate functioning in the cross-disciplinary world that is becoming the gauge of the best engineering colleges.
Ultimately, the college organization will be like a city with a series of spires — the programs — built on the foundation of the integrated curriculum and linked at various levels by interconnecting structures — the tracks. Most, if not all, disciplines will offer a series of classes that form individual tracks; these classes will be developed to allow a student to learn the basics of a discipline in addition to their “home” program. The formation of each student’s curriculum will mirror his or her own interests, so there will be mechanical engineers with subspecialties in chemical or biomedical engineering, aerospace engineers with specialties in materials or sensors. It will provide students with opportunities to develop their own career niche, to be exposed to faculty outside their own departments and to become well-rounded very early in their careers. I think it will be an exciting, stimulating environment in which to learn that will provide students with much greater breadth and depth in their intellectual pursuits.

The educational process we are planning incorporates a rich tapestry of experiences that will underpin an exciting career. Moving away from the disciplinary silos in which we have existed for the past century is sometimes unnerving and always challenging, because we have grown very comfortable within our self-imposed confines. Breaking down those silos offers the opportunity to experience the kind of intellectual freedom that is the basis for innovation and entrepreneurship. We look forward to having your help throughout this process.

---

**Turning vision into reality demands “Our Best”**

This autumn’s freshman class in CEAS promises to be the largest ever with 943 confirmed students (as of June 1) — an increase of 16% over same date projections of 2010. With an additional 38 students transferring into the college, it is clear that CEAS is viewed by students and parents as a very attractive choice for engineering and technology education.

It’s not just numbers. CEAS programs are increasingly more competitive. ACT/SAT scores are higher. Class ranks are up and CEAS is claiming more Cincinnatus and National Merit Scholars. To be a recognized leader, the college needs more and more of not just Ohio’s best, but the nation’s best students.

If you are the parent of or know any high school students with high aptitude for math and science, we ask that you share your experience as an engineer and as a UC student with them. Becky Tudor, director of undergraduate student enrollment at CEAS, and her staff stand ready to talk with you or your prospective student.

Becky and her team will be attending national college fairs this fall in Chicago, Indianapolis and Philadelphia. University of Cincinnati alumni in those cities who can assist them are asked to contact Becky at becky.tudor@uc.edu, 513-556-5417. Alumni in these cities and elsewhere around the country can directly contribute to achieving our shared vision of CEAS as a true global leader in engineering and technology.
Seismic protection — it’s a fuse!

Fuses have a whole new meaning for researchers in the college’s School of Advanced Structures. Rather than the small tubes with soft metal cores designed to melt from strong electrical surges and protect your home; these fuses are large connectors for structural beams of high rise office buildings and towers and these fuses too are designed to absorb energy and protect the structure.

“We’re looking at a new way of addressing design by posing the question – How do I want it to fail?” states CEAS structural engineering professor, Bahram M. Shahrooz. “In an earthquake a building absorbs great quantities of energy. The objective of the designer is to direct the energy to where they want it and control the damage as much as possible.”

By directing seismic energy to strategically placed fuses throughout the building, the designer limits failure to fuse locations. Fuse locations are made easily accessible so the removal and installation of a new fuse is relatively easy. Once all failed fuses are replaced, the building has full structural integrity and is back in service.

These fuses, made from structural steel, are very strong and when in place create a solid, stable, and reliable method of joining individual structural members such as reinforced concrete structural walls that form the core of most high-rise buildings. An enormous amount of energy (like that of a major earthquake) is required to cause a fuse to fail.

Fuse use is an economically attractive approach to manage energy surges during a seismic event and enable the building to be put back in service quickly and safely following the event.

Construction fuses are not in practice as yet but promise increased efficiency and an effective means of restoring structural integrity to buildings following a major disaster. A heavy schedule of testing at the University of Cincinnati Large Scale Test Facility, located at Center Hill Research Center, is planned over the summer to expand the data library of fuse performance and begin making the case for inclusion in the American Institute of Steel Construction (AISC) code. CEAS structural engineering associate professor Gian Andrea Rassati is also involved in the upcoming testing program.

Building codes, such as AISC, form the guiding instructions for putting up buildings of all kinds and results from research often take 10 years or more before inclusion. However, when incorporated in the AISC codes, buildings become safer and stronger. UC is a significant contributor to the AISC code. Shahrooz’s previous pioneering work related to hybrid building systems have been adopted by the AISC code, and structural engineers in the U.S. and around the world have used the system that he developed.
CEAS team wins national competition

For the second straight year and the third time in the last five years, the UC-CEAS team won the National Construction Management Competition of the Associated Builders and Contractors held in San Antonio, Texas, April 11–15. Twenty-five colleges and universities competed in this demanding event.

CEAS team members John Budde, Erik Carlson, Greg Christensen, Kevin Daubenmire and Kyle Pagel, all 4th and 5th year construction management students, traveled to San Antonio to compete.

Awards are given in each of three subcategories in the competition: 1) Project Management and Scheduling Plan, 2) Safety Plan and 3) Estimating. After winners of the subcategories have been awarded, the overall champion is announced.

This year, the UC ABC team earned:
- First Place in the Overall Competition
- First Place in Estimating
- Second Place in Scheduling
- Third Place in Safety

“We are proud of the great accomplishment of the student ABC team, their faculty advisers and industry sponsors,” said team faculty adviser George Suckarieh. “One of my colleagues mentioned to me, that he has never seen such professionalism exhibited by a group of students. They shared their knowledge and experience with his team, that did not make it to the final round. Our students represented the College of Engineering and Applied Science and the University of Cincinnati in a manner that makes us all proud.”

Dr. George Suckarieh honored as UC’s Distinguished Teaching Professor

George Suckarieh was honored with the title of University Distinguished Teaching Professor. Granted to only one or two professors each year, Distinguished Teaching Professor is UC’s highest accolade for teaching. It is a fitting tribute for the man who is most frequently described as having a passion for teaching and for the success of his students. George has been a leader in bringing new ideas to the classroom: he was an early advocate of the Writing across the Curriculum program, Problem Based Learning, and E-Portfolios, and he was among the first to use the internet to answer students’ questions online.

George has also been instrumental in maintaining close connections with industry. He brings graduates back to lecture, thus enriching the learning experience and making sure that what he is teaching is the most up-to-date material possible. Industry experts also take part in evaluating students’ projects. Finally, George has mentored numerous teams to honors in the national competitions sponsored by industry groups, such as the Associated Builders and Contractors.

One graduate wrote, “It became apparent to me that Professor Suckarieh has incredible joy in the continuous learning process.” Is there anything better that could be said about a teacher?
As the College of Engineering and Applied Science builds its reputation as an engineering powerhouse, the School of Aerospace Systems is being recognized as an Ohio Center of Excellence, housing two research scholars, and producing yet another textbook.

**Ohio Center of Excellence**
The CEAS School of Aerospace Systems was named an Ohio Center of Excellence in Intelligent Air & Space Vehicle Energy Systems based on its leadership over the past 80 years in contributions to the industry and to the state’s economy. Centers of Excellence concentrate academic and research activities on the creation of advanced transportation and aerospace technology to create more jobs through commercialization of innovative technologies.

“Strong universities and strong programs, like these Centers of Excellence, work to attract and keep the best and brightest young people in Ohio and ... A robust system of public universities is indispensable to Ohio’s economic future,” said UC President Gregory Williams during the dedication ceremony.

As a Center of Excellence, the School of Aerospace Systems expects to be moving toward even higher levels of achievement in education, research and engineering.

**Ohio Research Scholars**
The CEAS aerospace program continues to enhance its reputation by attracting elite faculty from across the globe.

**Dr. Jong Guen Lee** joined the college in January after 20 years at Pennsylvania State University as a research professor. Dr. Lee’s area of expertise is combustion proportion programming in combustion systems in aviation. More simply put; how to reduce combustion generated noise in engines.

Lee’s research is unique because he conducts laser-based research with optical diagnostics to check the flow in these engines.

Lee was named an Ohio Research Scholar for being a leader of research in advancing proportions. Commenting on his start at UC, Lee states, “UC has a rich research history in aerospace and combustion proportions. The resources are more than I expected. I hope to establish a program in supersonics. My goal is to increase students’ exposure and give them hands on experience in areas like this ...”

**Dr. Francesco Simonetti** came to the School of Aerospace Systems in March from Imperial College in London. Dr. Simonetti brings a new element to the school with his research on ultrasound imaging and non-destructive evaluation. Simonetti has made significant contributions to ultrasonic and electromagnetic materials characterization, flaw detection, diagnostics, and health monitoring applications ranging from the aerospace, transportation and energy industries to medical industries.

“I hope to develop a center of excellence in structural health monitoring for life management and extension of propulsion systems,” Simonetti said when asked about what he envisions for the program.

“I want to provide students with an exciting research environment and enable the highest educational standards by taking an active role in developing the curriculum to account for recent progress in modern aerospace technology.”

**Professor Peter Nagy publishes new text**

“Physical Ultrasonics of Composites” presents a rigorous treatment of both theoretical and experimental aspects of ultrasonic materials characterization as it is applied to composite materials, components, and structures that present unique challenges and great opportunities in aerospace and other high-tech industries.

This text is co-authored by three university professors who have been collaborating for over twenty years. One of those authors is CEAS Professor Peter Nagy. Their book provides a synergistic description of both modeling and experimental methods in addressing wave propagation phenomena and composite property measurements and is expected to be used by students both nationally and internationally.
Two teams of aerospace engineering students from the University of Cincinnati each won their respective divisions at the 2011 National SAE Aero Design East competition in Marietta, Georgia, April 29–May 1.

More than 70 teams were present from across the globe including Canada, Poland, Venezuela, India, Mexico, Egypt, and the reigning competition champions from Brazil.

The competition requires teams to design, build, and fly a radio-controlled aircraft over a closed course from takeoff to landing. Points are earned based on satisfying specified design requirements, a written report, an oral presentation, and carrying the most payload for a complete circuit of the course.

A team of three aerospace engineering graduate students won the Micro Class competition. Team members included Marshall Galbraith, Philip Italiano, and Cody Lafountain.

One key criterion for judging the Micro Class competition was the ratio of the fully loaded aircraft weight to its empty weight. The UC aircraft weighed a mere 0.7 pounds when empty, so the team had the highest score for this critical ratio, as well as the highest score for their presentation.

"Due to the poor flying conditions, we continuously experienced ‘hard’ landings that damaged our nose gear. We spent every minute between flight rounds repairing the damage," explained Galbraith.

The second team was a group of aerospace engineering seniors who won the Regular Class division. Student competitors included Timothy Britt, Daniel Brunck, Nicholas Ernest, Robert Fellows, Lisa Kain, Christopher Lightfield, Dustin Muller, Dominic Pompeo, Christopher Porter, Tyler Relf, Nathan Rooy and Michael Whitsel.

The Regular Class team surpassed a 25-year competition record for the most payload ever carried around the closed course. The story of this victory can be classified as a true tale of “triumph from disaster.”

The undergraduate team completed all flights the first day of the competition landing them in first place with a 14-point lead. The following day, the team attempted a 37-pound payload flight to assure victory. Although conditions were perfect, the aircraft lost control for unknown reasons and crashed into the ground.

The crash set the team back to second place trailing the leader by 10.65 points. After the crash the plane appeared to be beyond repair. The team had only 45 minutes to rebuild their aircraft and carry on in the competition. It was required that the aircraft must be 50 percent original to be considered the same. If the rebuild were over 50 percent, the scores would be wiped from the day before.

"Those 45 minutes were very intense. I personally thought that we had worked on it for at least 1.5 hours for the amount of work that we had done. There was a lot of teamwork as we only had a few blades and only one bottle of glue. Everybody was being productive and helping out," said Fellows.

With slight winds and unfavorable density altitude, the plane began its last flight of the competition; it rolled down the runway and lifted off within the required 200-foot ground roll. While in the air the tail started to shift because of the quick repair but held firm. The aircraft made it to a successful landing largely because of the skill and control of Santiago Panzardi, the team’s AMA (Academy of Model Aeronautics) licensed pilot. After the landing the payload weight was determined to be 35.27 pounds — a new record for a Regular Class aircraft.

The Brazilian teams in first and third place also completed flights in the final round making it unsure if the 35-pound payload would yield enough points. Once the scores were tabulated, teams were notified and the University of Cincinnati team had won the Regular Class competition with an 11.82-point lead over both Brazilian teams.
In a competition that is by invitation only, UC defeated more than 20 other teams to claim first place in the Carnegie Mellon University Spring Programming Contest. The competition was held March 26 on the Carnegie Mellon campus in Pittsburgh, Pennsylvania.

The team consisted of senior Jacob Schlather, a math major minoring in computer science, senior T.J. Ellis, a double major in computer science and math and his brother, freshman Josh Ellis, also a double major in computer science and math.

Graduate student coaches Patrick Putnam and Jeremy Lavergne led the UC team. The coaches saw how well this team worked together and knew that they had a great opportunity ahead of them. Preparation included weekly practice sessions to keep them actively using their critical thinking and programming skills.

Each team was presented with a packet of ten problem-solving questions that required them to use their knowledge of computer coding to write programs that accurately solve each problem. They had five hours to complete programs for all ten questions. It is a race against the clock as well as the other teams. The kicker is the team only has one computer to enter their work.

“Everyone kind of works on a problem, even though we can only have one person coding at a time; Jacob is the quickest coder so we were looking over his shoulder while he was doing that, just making sure everything looked good,” said T.J. Ellis.

Teams are scored on two important factors. First and foremost, the number of problems solved correctly. In this case, UC solved more problems than any other team. Second is the amount of time taken to complete the problems. An unlimited number of attempts were allowed per question; however, the penalty for answering a question incorrectly added minutes to the total time. In a competition where you are looking to be the quickest, there is little room for error.

“The biggest challenge was seeing what the solution should be. The experience we had really helped us solve them in a sufficient manner,” said T.J. Ellis. While some problems lasted hours, the easiest they faced took a mere four minutes.

“There are some problems where you can just skim it and pull out the significant information and find the simple answer; others appear to be simple and then you look at what they are asking you to do and it is not so simple anymore,” said senior Ellis.

“They track all of the team’s scores throughout the competition on a giant board; and then they stop during the last hour so no one had any idea where they are ranked,” explained Schlather. The beginning is usually pretty frantic, but once you get past the quick ones it calms down.”

This year, the team finished nine of the ten questions with 1.5 hours remaining. “When we began looking at the tenth problem, we realized it was going to take about 4.5 hours to complete,” said Schlather.

Like every other student contest, the competition was stiff as each team wants “bragging rights” for their school. “Next year we can do a lot more practicing and work more in some different subject matters” said Coach Putnam.
“We plan on returning next year to coach a new team,” said Coach Lavergne. “As a coach I enjoy getting to go to Carnegie Mellon and make connections with the faculty and other coaches there. Most teams at the competition are coached by faculty while UC’s team is coached by grad students,” he added.

UC has been invited to this competition for the past several years and began entering just as a way to have fun and face a competition challenge. Last year, UC placed second and became motivated to train harder and compete as Bearcats. It paid off, UC-CEAS earned first place!

This year’s winning team will not compete together again, but they all have big plans in their future. Josh Ellis will continue practicing and competing while his brother, T.J. Ellis, is graduating and has secured a position with the government. Schlather will continue here at UC pursuing his PhD, which allows him to be a team member for one more year.

“Since I am a freshman this is the first time I went, but I would definitely go again,” said rookie Josh Ellis.

---

College partners with industry to offer MS degree in Computer Science focused on cyber security

The college has joined with Northrop Grumman, and its partner company, Xetron, to offer a Master of Science degree in Computer Science focused on cyber informatics.

With courses held at CEAS and Xetron, the program is designed to benefit the college’s computer science students and Xetron’s computer professionals. Classes began in the fall of 2010. “Our faculty are teaching classes in our uptown campus facilities and also in newly equipped classrooms at Xetron,” states Dr. Prabir Bhattacharya, Director of the School of Computing Sciences and Informatics.

These classes use video and audio communications so that students in both locations “attend” the same courses. Class times are set for minimal disruption to work schedules of Xetron engineers. Many classes are held over the noon hour and after 5 p.m.

New courses added to the college’s current Master’s Degree in Computer Science program specifically address one of Xetron’s, and indeed most companies, greatest needs — information security. As one of the largest developers of software systems for government and industrial applications, Xetron and Northrup Grumman constantly seek better-trained engineers and cyber security experts to enhance their capabilities.

A variety of industry professionals and UC professors are teaching classes in a curriculum that includes Cryptography, Malware Analysis, Reverse Engineering and Cyber Forensics. These courses are open to students currently enrolled in the CEAS master’s degree program as well as the 23 professional engineers from Xetron who have elected to complete their master’s in computer science with a focus on information security.

“More than just an academic partnership, our new Master of Science degree in Computer Science also provides an opportunity for people to develop their skills while working side-by-side with like-minded professionals on real-world projects,” said Martin Simoni, site director for Northrop Grumman’s Xetron business unit. “Educating and developing home-grown talent is critical in today’s highly competitive job market. Our cyber master’s program allows our technical experts to groom students on the job and in the classroom.”

Innovative partnerships such as this collaboration may well be a harbinger of the future as companies look to build an even stronger and better-educated workforce in technologically advanced areas. It is no secret that cyber security and information security are two of the “hottest topics” in the field and those with education and experience are in demand. These academic partnerships exemplify some of the new approaches needed to continue building the tri-state into a technological leader boasting a strong, well-educated workforce.

“The University of Cincinnati is excited about this opportunity to collaborate with Xetron to develop a program that provides innovative approaches for our 21st century engineers as they prepare to face real-world challenges,” said Carlo Montemagno, dean of Engineering and Applied Science at the University of Cincinnati. “We anticipate that this is but the first in a line of partnerships with our industrial and commercial partners as we deepen our technical expertise in critical areas.”

The College of Engineering and Applied Science has a long history of collaboration with industry in defining curriculum and training so that its graduates are immediate contributors to their companies. Partnering in the classroom is a natural evolution that capitalizes on the technical expertise and knowledge of both academia and industry.
Senior design projects focus on innovative medical devices

The Hepato Seal

Rachel Rheauem and Will Abner, both biomedical engineering majors focusing on device innovation, designed a medical device for their senior capstone. Bobby Garfield, an industrial design student, assisted the team in developing their concept.

The problem they addressed was “how to reduce the amount of blood loss in the liver during surgery.” Current procedures use devices that are designed to seal liver tissue to prevent bleeding. However there is not a single device that dissects and seals the tissue correctly.

Some devices have been created but do not seal properly to maintain homeostasis in the patient resulting in surgeons doing a lot of switching of devices during surgery. This presents a problem because it prolongs the operation time and extends the amount of blood loss by the patient.

The team's first step was to meet with a surgeon from University Hospital and present their problem to him. Dr. Steven Rudich, a hepatobiliary surgeon and the team's clinical adviser, worked out details with the students. Dr. Rudich provided Rheauem and Abner with a list of things that the device ideally should do. Based on the list, the team had to decide what was realistic and feasible in a single device.

“Meeting with him was the first huge step. Surgeons are the customers — we are the manufacturer. We are looking at what he wants and what he needs. If we don’t give him what he wants and needs we don’t have a product. This really guided us where we needed to go,” says Rheauem.

The basis for their design is called a Kelly clamp. This is the device currently used in open surgical procedures. The team worked to try and replicate this device for use in a laparoscopic surgery. Laparoscopic procedures have several advantages over open surgery including a lower rate of infection, a smaller incision and generally lower costs and faster patient recovery times.

The team added monopolar and bipolar sealing capabilities to the Kelly clamp to meet Dr. Rudich’s needs. Monopolar seals tissue in the liver and bipolar seals vessels in the liver. Both use electricity flowing through the Kelly clamp to seal tissues and vessels thereby preventing further bleeding from liver dissection.

Their innovative device allows the surgeon to dissect the liver using a standard Kelly clamp, flip a switch and use monopolar sealing on the tissue of the liver, then flip it again to use bipolar sealing on the vessels within the liver.

“We wanted to streamline the amount of equipment in the operating room as much as we could,” said Abner.

The Ischiban

Biomedical engineering majors Pooja Kadambi and Scott Robinson, along with computer engineering student Joe Lovelace and industrial design student Alex Androski, make up another senior design project group looking into creating a device for effectively diagnosing strokes.

Two types of strokes can occur, clots and bleeds. Clot strokes and bleed strokes have opposite treatments — treatment of one type will kill you if you have the other! To determine which type of stroke a patient may have suffered it currently takes hours of tests and scans before doctors can safely administer the right medication.

A company in Boston created a system that is a new a way of diagnosing
strokes. This senior team was asked to design the contact portion of the system that will be placed on a patient’s head so that the system can determine the type of stroke within five minutes.

The device works by sending a signal from the front of the head to the back of the head and then measuring impedance through the brain. If there is low conductivity it indicates the clot or ischemic stroke. If there is high conductivity the bleed or hemorrhagic stroke is indicated.

The challenge they faced was to create a device that would be sensitive enough when put in contact with the skin to run the test. As an additional consideration, the team wanted to avoid shaving the patient’s head as part of the system’s use. The answer to both concerns is an innovative gel delivery system. Gel allows the reading to penetrate up to two inches of hair on the patient while still obtaining an accurate read.

Lovelace, the electrical expert of the team, designed a system that checks the impedance to make sure the flow is uninterrupted and running directly from the brain waves to the electrodes. A signal alerts the tester if one of the electrodes is out of place and then another when all of the electrodes are secure and the patient is ready to be tested.

The device has already been requested by several neurosurgeons for use in patient monitoring of EEG readings over prolonged periods.

Two environmental engineering students, Xi Haung and Manish Shrestha, have been selected to receive Ivanhoe Foundation Fellowships.

The Ivanhoe Foundation provides fellowships to deserving students from developing countries who are pursuing higher education in the United States. Recipients must be studying for a practical Master of Science degree in engineering or science, with an emphasis on water resources. UC is proud to have two of the six national fellowship awardees.

Xi Haung came to the United States from China last September in pursuit of a graduate education. “My goal is to receive a doctoral degree in the U.S. and my Ivanhoe Fellowship will support my studies,” affirms Haung. “This fellowship helps because by using it wisely, I can focus more on my research and studies.”

Haung is currently working on the fate and transport mechanisms of waterborne pathogens in surface water.

“I am using microbial source tracking of 16S rRNA genes, paired with pathogen concentrations and hydrological measurements, to develop better models for tracking E coli contamination in watershed management,” Haung explained.

Manish Shrestha came from Nepal to UC to earn a Master of Science degree in Environmental Engineering. Shrestha’s research, titled “Feasibility of Water Satellite Tanks for Urban Areas of Developing Countries,” deals with studying and modeling the cost and water quality benefits of continuous water supply over intermittent water supplies.

“To be honored with this award definitely means a lot to me, my adviser, and my family in Nepal,” states Shrestha. “The problem of intermittent water supply is severe and I am glad that the Ivanhoe Foundation has granted its support for me to pursue my research on ways of improving water distribution systems.”
Due to its real-world research and economic impact, UC’s aerospace engineering program was named an Ohio Center of Excellence. Since 2004 the aerospace engineering program has conducted more than $100,000,000 in research, overseen the start-up of seven companies and generated in excess of $600,000 of license income for itself and the research partners of the School of Aerospace Systems.

UC’s Center of Excellence in Aerospace Engineering builds on current strengths and develops innovative, breakthrough technologies to provide the next generation of aircraft power and propulsion systems, advanced composite materials and coatings, and intelligent systems technologies. These technologies affect every aspect of an air or spacecraft and are vital to its design and performance.

Advanced structural techniques yield seismic results. Strengthening bridges already standing, adding decking panels that are lighter and stronger, testing the strength of individual bridge components, and creating new systems to assist buildings withstand severe seismic loads are all in a day’s work at CEAS. UC researchers are applying composite materials to bridges to strengthen critical joints and extend bridge life. The high strength, stiffness, light weight, and non-corrosive nature of composite materials make composite plates and components ideal for bridge decks and supplemental strengthening applications.

UC processes for marrying concrete and structural steel better leverage the strengths of both and the applications can be seen in buildings around the world. Incorporating “fuses” (a recent UC innovation, see page 6) in key locations within the core structure will enable re-establishing quickly a building’s integrity following an earthquake.

Research continues to fuel the college’s recognition as a regional and international technology powerhouse as CEAS faculty drive solutions to challenges as diverse as the companies and students it serves. Excellence in any form, and particularly that led by research, becomes a force of its own and one with energy to carry students to ever higher levels of achievement and encourage faculty researchers to dig even deeper for innovative solutions.

CEAS routinely solves problems, consults on process issues, improves products, and creates new ones. While mostly commercialized by our industry partners, a number are being brought to market through start-up companies either owned or directed by CEAS faculty. Combining innovation and entrepreneurship fosters excellence as researchers strive for the next breakthrough and students realize the opportunities available to them.

Research continues to fuel the college’s recognition as a regional and international technology powerhouse as CEAS faculty drive solutions to challenges as diverse as the companies and students it serves. Excellence in any form, and particularly that led by research, becomes a force of its own and one with energy to carry students to ever higher levels of achievement and encourage faculty researchers to dig even deeper for innovative solutions.

CEAS routinely solves problems, consults on process issues, improves products, and creates new ones. While mostly commercialized by our industry partners, a number are being brought to market through start-up companies either owned or directed by CEAS faculty. Combining innovation and entrepreneurship fosters excellence as researchers strive for the next breakthrough and students realize the opportunities available to them.
Robots address everything from home care to vehicles. When thinking of robots, R2D2 and C3PO come to mind and while they are in our future, robotics is very much “alive” at CEAS. Faculty and student teams are addressing applications for home care where robots enable seniors to remain in their homes by handling patient monitoring, pill and food dispensing, and household chores. Homes may soon have a robotic fuel cell to process waste into electricity and useful chemicals before releasing water into the sewer system.

Robots at UC are also moving in formation, interacting and working in teams, traveling obstacle courses, and flying through forest fires. A UC robot will be tested this summer flying through controlled forest fires in West Virginia to evaluate its performance and determine its effectiveness in identifying hot spots and how best to deploy resources to combat the fire.

Disposable e-readers and brilliant colors lead next-gen displays. Vivid colors and paper backed displays are two results of advances from the CEAS nanoelectronics laboratory that are ready for commercialization. Using electrofluidic optics, combining liquids with light, UC researchers electrically enhance the color of pigments to levels matching the visual brilliance of printed materials. Consumers can expect to see e-readers and computers with brilliant color in any light conditions while business windows turn into signs upon command.

Disposable e-readers and brilliant colors lead next-gen displays. Vivid colors and paper backed displays are two results of advances from the CEAS nanoelectronics laboratory that are ready for commercialization. Using electrofluidic optics, combining liquids with light, UC researchers electrically enhance the color of pigments to levels matching the visual brilliance of printed materials. Consumers can expect to see e-readers and computers with brilliant color in any light conditions while business windows turn into signs upon command.

While glass rules the world of displays today, CEAS research is proving the viability of paper as a high performance display option. Using paper as the host material for electrowetting, where an electric field is applied to colored droplets in a display, yields an inexpensive, environmentally friendly and yet flexible medium for displays. Paper displays could be easily rolled, distributed, used and then thrown away.

For more on their research see pages 18-19.
first two quarters were spent creating and finalizing their design for approval. It was not until after winter quarter that the team was able to begin the building process. “We couldn’t even order parts, we started right when spring break did,” said Barker. This left the team with only four weeks to build an entire vehicle, they spent nearly nine hours a day in the lab.

Another challenge they faced was getting the brakes to work on all three wheels. The team chose to go with a 3-wheel design because it was less expensive than a 4-wheeled vehicle and somewhat more flexible for use in third world environments where roads are poor at best and obstacles abound.

At the competition, ten to twelve teams brought their A-game hopeful of having designed the top BUV. Before selecting the top design and awarding prizes, each basic utility vehicle was put to the test in a series of events to exercise the vehicle’s abilities. The tests include acceleration, an agility course, a mud pit, an obstacle course, and a mogul run. If that isn’t punishment enough, the vehicle must pass an endurance test that lasts two hours.

Scoring for the competition is as follows: 20% for implementation of the transmission and power train, 20% for the final BUV cost, 40% load and distance capability designed into the vehicle, 10% for the tests mentioned above and 10% for the oral presentation given by the team as well as complying with the specifications of the vehicle requirements.

Their presentation covered all details of the team’s building process. This included everything from materials and break down of the system to the assembly process and a risk analysis.

When designing their vehicle, the team must consider the following: overall design and assembly simplicity, durability, maintenance issues, utilization of off-the-shelf components, safety, reliability, minimal cost (of acquisition and operation), center of gravity for maximum stability, tools required and the overall number of parts. If adopted by IAT, the vehicle design will be used in production in third world countries around the globe — often in rural and undeveloped areas.

“One thing we did to make it more user-friendly was to build as much as we could using bolts instead of welding since electricity and machinery are often not an option where the BUV would be built and used,” concluded McFarland.
SAE Collegiate Design Series Competition

UC-CEAS students travelled to the Michigan International Speedway again to match wits with collegiate teams in the 2011 SAE Collegiate Design Series competition. This year’s field was international and included more than 100 schools from North America, Europe, South America and Asia.

The CEAS SAE team members include: David Bartosik, John Custer, Michael Doerter, Scott Fehrenbach, Brent Francis, Alex Fortenboher, Nate Holthaus, Fred Jabs, Chad Kallmeyer, Ryan Mahoney, Christopher Majba, Christine Mondello, Dan Ruggiero, Christopher Schirmann, Robert Wilson, and Dante Zannoni.

The competition kicked-off on Thursday, May 12 with static events designed to evaluate the team’s engineering solutions. Judges evaluate vehicle design, cost analysis and presentation. Paramount in the judging is the team’s business presentation on commercialization of the car — is the vehicle able to be produced for the “weekend autocross enthusiast” at an affordable cost?

After the teams have passed their presentations and technical inspections, “rubber meets the road” in a series of four dynamic events on Friday and Saturday. First, acceleration measures the time required to go 75 meters from a standing start. Next, the vehicle’s cornering ability is put to the test by driving a figure 8 track. Drivers then demonstrate the vehicle’s maneuverability, handling and braking features on the autocross course. Finally, the most challenging of the driving events is the endurance race, a 22-kilometer test of vehicle and driver. Completing this race is ultimately the mark of success.

Every aspect of the vehicle is challenged — durability, speed, handling, dynamics, fuel consumption, and reliability. “If something goes wrong or you spill oil on the track or your car smokes, you lose points,” claims Scott Fehrenbach.

The judges award points between static and driving events to each team with a maximum of 1000 total. Endurance alone is worth 400 points and is why finishing is a must. “What we were aiming for as a team was to have a strong enough car to make it through all of the other events and then perform through endurance,” said Christine Mondello.

The UC-CEAS team races under the banner of Bearcat Motor Sports. Faculty adviser, Randall Allemang holds that “the competition gives students practical experience under time constraints that are in some cases more demanding than those they face later in their professional careers.” The team starts designing in September and begins assembling component systems before the holidays with a target of completion by April 1 in order to qualify for the SAE Formula competition.

The team had a budget of about $20,000. Their project however, totaled between $50,000-$70,000 with materials and machine time that were donated. The team was able to succeed in large part due to their sponsors including: Morris Tech, Die Craft, AVL, CEAS, School of Dynamic Systems, Herman Schneider Foundation, Marathon Oil, and GE.

Jay Lee was honored with the title of Distinguished Research Professor. Granted to only one or two professors each year, it is the University of Cincinnati’s highest accolade for outstanding researchers. Dr. Lee came to UC as Ohio Eminent Scholar and L.W. Scott Alter Professor in Advanced Manufacturing. With experience in both industry and government, he is the founding director of the NSF Center on Intelligent Maintenance Systems, a partnership with over 40 global companies and 12 partner institutions. Their quest is to develop prognostic technologies for smart predictive maintenance and reliability systems. Jay has developed the dominant innovation tools that are used to systematically discover invisible needs in product and service systems. A strong believer in a “collaboratory” concept in conducting his research, he is known for the strong mentorship he provides to his students and for the many postdoctoral researchers and visiting professors who work with him.

Jay is an all around faculty member: he’s an award winning teacher, a Fellow of ASME and SME, as well as a founding fellow of the International Society of Engineering Asset Management (ISEAM). His new book, Innovating the Invisibles, is to be published soon. He enjoys reading and often finds time for daydreaming to seek “invisible things.”
Advances in electrofluidic research

The School of Electronic and Computing Systems is a model for advancement. Researchers use the Novel Devices Laboratory to advance electrofluidics research in ways that affect our daily lives. Electrofluidics research combines liquid and light to create and enhance devices we use each day.

Current electronic devices either a) offer limited function and slow speed but require little power to operate, for example the Kindle, or b) provide high color and high-speed capability for video and other functions but have a high-power usage, such as devices like cell phones, laptops and the iPad.

In a true example of academic-industrial collaboration, a research team, headed by Jason Heikenfeld, UC associate professor of electrical and computer engineering; Paul Drzaic of Drzaic Consulting Services; research scientist Jong-Souk (John) Yeo of Hewlett-Packard's Imaging and Printing Group; and research scientist Tim Koch, who manages Hewlett-Packard's effort to develop flexible electronics, plans to change the either/or option that currently exists with the introduction of this new discovery into the market. The new “zero-power” design the team has developed requires low power and will make for more environmentally friendly electronic devices.

The initial result of their efforts is a new electrofluidics design being commercialized by the University of Cincinnati and start-up partner company Gamma Dynamics, founded by Heikenfeld, that assures a dramatic reshape of the image displays of electronic devices.

“What we've developed breaks down a significant barrier to bright electronic displays that don't require a heavy battery to power them,” said Heikenfeld.

The way it works is, behind the display screen are two layers of liquid, oil and a pigment dispersion fluid. Between the two layers are reflective electrodes. Ambient light enters through the display screen and through the first layer of liquid and hits the reflective electrodes. When the light hits that reflective electrode, it bounces back out to the viewer's eye, creating the perception of a bright, color-saturated image, text or video.

A small electric charge powers the movement of these oil and pigment-dispersion liquids. When the pigmented substance is positioned in the top layer, between the ambient light and reflective electrode, it creates a reflected ray of colored light that combines with literally millions of ambient light rays to produce a full-color display.

Disposable e-reader of the future

Electrical engineering professor Andrew Steckl's research into an affordable, yet high-performance, paper-based display technology was featured as the November cover story of ACS Applied Materials and Interfaces, one of the scientific journals for the American Chemical Society, the world's largest scientific society.

In the research, Steckl and UC doctoral student Duk Young Kim demonstrated that paper could be used as a flexible host material for an electrowetting device. Electrowetting (EW) involves applying an electric field to colored droplets within a display in order to reveal content such as type, photographs and video. Steckl's discovery that paper could be used as the host material has far-reaching implications considering other popular
e-readers on the market such as the Kindle and iPad rely on complex circuitry printed over a rigid glass substrate.

“One of the main goals of e-paper is to replicate the look and feel of actual ink on paper,” the researchers stated in the ACS article. “We have, therefore, investigated the use of paper as the perfect substrate for EW devices to accomplish e-paper on paper.”

Importantly, they found that the performance of the electrowetting device on paper is equivalent to that of glass, which is the gold standard in the field.

“It is pretty exciting,” said Steckl. “With the right paper, the right process and the right device fabrication technique, you can get results that are as good as you would get on glass, and our results are good enough for a video-style e-reader.”

Steckl imagines a future device that is rollable, feels like paper yet delivers books, news and even high-resolution color video in bright-light conditions.

“Nothing looks better than paper for reading,” said Steckl, an Ohio Eminent Scholar. “We hope to have something that would actually look like paper but behave like a computer monitor in terms of its ability to store information. We would have something that is very cheap, very fast, full-color and at the end of the day or the end of the week, you could pitch it into the trash.”

Disposing of a paper-based e-reader, Steckl points out, is also far simpler in terms of the environmental impact.

“In general, this is an elegant method for reducing device complexity and cost, resulting in one-time-use devices that can be totally disposed after use,” the researchers pointed out.

Steckl’s goal is to attract commercial interest in the technology for next-stage development, which he expects will take three to five years to get to market.

The work was supported, in part, by a grant from the National Science Foundation and was conducted at the Nanoelectronics Laboratory at the University of Cincinnati College of Engineering and Applied Science.

by John Bach
UC Public Relations

Dr. Chong Ahn has been named UC’s Established Entrepreneur for 2011. Dr. Ahn’s company, Siloam Biosciences, was chosen as one of the Innovation Finalists by the Regional Chamber of Commerce. Siloam has been the conduit for transfer of cutting edge efforts that involve “Lab-on-a-Chip” technology. His inventions can improve the flow of information in patient care settings, whether those involve patients in hospitals or wounded soldiers on battlefields, and at substantial savings. His most recent work explores the development of new BioMEMS technologies that produce bioinformation for genomics and proteomics. His research has been supported by DARPA, NSF, NIEHS, the State of Ohio, and numerous foundations and companies, including Battelle, GE and P&G. Chong earned his PhD at Georgia Tech, joined the UC faculty in 1994 and was named to the Mitchell P. Kartalia Chair in 2010. He has graduated 23 doctoral students during his time at UC.

ACS Applied Materials & Interfaces
Plans for the new Alumni Engineering and Applied Science Learning Center have officially been sent out for bid to construction companies. Once a contractor has been selected, construction will commence this summer and the center will open for business one year later during the summer of 2012.

The Learning Center will share the eighth floor of Rhodes Hall with the School of Electronic and Computing Systems and will provide approximately 10,000 square feet of space devoted to educating engineers. The CEAS Learning Center will be one of the largest facilities of its kind in the region.

The Learning Center will include two reconfigurable classrooms, three “project” rooms, spaces for small group and individual study, and spaces for tutoring and advising. Additional features include faculty offices, a large entry lobby, an information center, and a coffee bar.

One exceptional feature that the center will have is the project rooms that will be used to enhance hands-on experience for freshman engineering students. Starting in the fall of 2012 all freshmen will take Engineering Foundations, Engineering Models I and Engineering Models II. The new courses are designed and taught through the School of Engineering Education with the goal of building students’ passion for engineering from day one.

Students want the chance to explore how their major might prepare them for the workforce. Engineering centered experiences starting in the freshman year will enhance students’ interest level and keep more promising students in undergraduate science and engineering programs.

Providing entering students with engineering experiences is a bold new initiative that uses three new college-wide courses. These new courses will be conducted in the Learning Center’s multi-purpose rooms and make use of the project facilities.

Engineering Foundations provides beginning engineers with information regarding all fields of study in CEAS so that they can make informed choices regarding a major. It features hands-on experimental modules that allow first-year students to begin exploring engineering and applied science, presentations by upper-level students regarding their co-op experiences, and presentations by engineers from local industry so that beginning students can understand what engineers do in practice.
The Engineering Models I and Engineering Models II courses will introduce first-year students to computer programming, assist them in developing a deeper understanding of mathematics, help students develop connections between engineering, mathematics, and science, and enhance their problem-solving ability.

The emphasis in all three courses is on an active, hands-on style of learning. These new courses were piloted during the past academic year and will go through another pilot in 2011-2012 with improvements based on feedback from the first pilot class.
This spring, CEAS celebrates its first cohort of students who will receive a BS in engineering in combination with a MBA degree. Twenty students representing mechanical, civil, chemical and aerospace engineering are among those completing the rigorous five-year ACCEND (ACCELERATED ENGINEERING DEGREE) program. These students will enter the workforce with both the technical skills needed to succeed in engineering and a set of business skills that sets them apart from their peers.

Students have a variety of options in ACCEND that enable them to meet their career goals. For the graduate portion of the program, students can elect to participate in the research-based Master of Science program; they can select the practitioner-based Master of Engineering program; or they can branch out and complete the Master of Business Administration (MBA) program. In all, the college now offers students 16 distinct ACCEND programs.

With ACCEND being such a demanding program, it has not been easy for these students. However, their dedication to their future was motivation enough to carry them through.

Eugene Rutz, manager of ACCEND programs for the college and a general academic adviser to the students says, “The students have had to work hard to meet all the degree requirements of both programs. They have missed one co-op quarter to get required courses, they have had to exceed the credit load some quarters, and they have had to take courses while on co-op. It has provided a richer learning experience than a traditional engineering degree.”

“The different colleges often have very different perspectives. It is these different perspectives that will enable these students to contribute at a high level for their employers.”

Students in this program were able to see through the struggles that they faced and embrace the opportunities that are now before them. “For me, being in the ACCEND program meant giving myself the opportunity to be a well-rounded professional. Having a business background to go with a technical background has really opened my eyes to how businesses operate and how technical roles can enhance business operations,” says Brian Chase.

“I have a wider variety of career paths I can take upon graduation. It is certainly a point of pride that we have accomplished two degrees in a short time,” Lindhurst added. While Scott Beckwith says, “It is just a great opportunity to get ahead and make the most of my education. I feel very fortunate to have had this opportunity.”

The ACCEND programs continue to be a significant component in the College of Engineering and Applied Science’s efforts to meet the goals of the UC Academic Master Plan. In particular, these programs encourage academic excellence, create additional academic opportunity for students, and provide a mechanism to increase enrollment, particularly enrollment of domestic students in graduate programs. Survey evidence shows that ACCEND is a major factor in a student’s decision to attend UC.

The College has plans to expand its distance learning option for the Master of Engineering program (MEng), beginning with mechanical engineering and electrical engineering. Our goal is to have these available by the fall of 2012. The distance-learning program will enable greater numbers of working professionals to participate.

The MEng degree requires the successful completion of a minimum of 45 credits of graduate-level coursework and a capstone project. The
MEng program has a common core curriculum of five courses plus a number of required discipline related courses. There is also ample opportunity to choose electives to further tailor the degree to the needs of professionals and students' objectives. The degree is practitioner-focused so that the common core provides course work and skills that benefit practicing engineers — regardless of discipline or industry.

The MEng degree provides advanced training to students interested in expanding their knowledge and expertise. Depending on a student's interest, the degree could add significant depth to an individual's understanding of the practice of engineering or the program can be constructed to focus on greater interdisciplinary breadth.

The Master of Engineering program is in its third year in the College of Engineering and Applied Science. MEng is a graduate degree that focuses on the practice of engineering and is designed to meet the needs of working professionals. While the Master of Science degree requires a research component and a thesis, the Master of Engineering curriculum emphasizes skills and expertise that enhance an individual's ability to contribute to the technical workforce. The difference between the traditional MS degree and the MEng degree is not the rigor of the course work or a lack of competencies, but rather on the focus of the curriculum.

Engineers Without Borders (EWB) is a student organization that delivers effective solutions for the most basic human needs to people in communities abroad. Participating students provide their skills as a service assisting people in third world countries with simple things such as more efficient school buildings or a water system.

The organization, started at UC in 2005, has been establishing relationships with communities in Kenya and Tanzania. “You want to form strong partnerships and keep going back to those same communities. You can keep progressing with the hope that they will be able to self-sustain and grow based on what we provide,” said club president, Vinny Travee.

“Our goal is to do projects with materials that can be found over there. We make training manuals, showing how to use the system and maintenance tips to fix something if it breaks,” said internal vice president Jim Moyer.

The chapter is currently working on three projects, one in Kenya and one in Tanzania where they are building new schools, and a third in Tanzania developing a water distribution system. They will be travelling back to Tanzania in June, focusing on the plans for building another school. The group will use the next six months to work on designs and getting approval to build.

The school that previously stood in Tanzania was not conducive to learning. It had only half of its walls still intact, a roof that generated excessive heat and was noisy when it rained. “The guiding principle for this project is to break the cycle of poverty, and you do that through education. We want to be able to foster the ability to have a meaningful education in a positive learning environment,” said Travee.

The chapter does a great amount of fundraising, receives grants, and has donors and local professional chapters providing support. “Trying to keep the inflow larger than outflow is definitely a challenge at times. Materials are expensive and travel expenses really get us,” explained chapter treasurer Sarah Hrinko.

Preparing for trips requires more than completing the project. “We prepare for a cultural divide. We are in a very rural area so we learn from professionals about how to talk and work with them. Our education committee brings in speakers to talk about the language, culture and values of the community and its environment,” said Moyer.

In Africa, people don’t have access to clean water. “Working there we are able to provide a solution to a problem that affects their daily life. A small project can affect an entire community and their way of life — from the health of the community to the lives of its children. You can see the impact,” says Hrinko.

The chapter’s most successful project was a water system that serves a community of 500 people. “You look at the pictures and you don’t need to say anything else. You see the look on kid's faces and it’s amazing. They are perplexed by the idea of water coming out of a tap and they can drink it. That’s enough right there,” Travee described.
This annual award of the Herman Schneider Medal was initiated in 1964 through a bequest of the late Louise Bosworth Schneider. It is awarded to a senior for "distinction as an exemplary co-op student – one who has taken fullest advantage of the unique opportunities of a cooperative education."

Danielle Grage is an ACCEND student who will graduate with a BS and MS in Aerospace Engineering this year. She’s an Honors Scholar who has done all of her co-op assignments at GE Aviation where she has been offered a full-time position. Danielle has been active in the Society of Women Engineers and served on the Professional Development Committee that planned tours and community service projects for more than 200 co-ops. Her awards include numerous scholarships, the GE Early Identification Award, and the GE Achievement Award. Danielle has been active in many community activities including fund-raising for the Just Community 5K walk, the Crosstown Helpout and ‘Green-up Day.

Katherine Lewnard is a Chemical Engineering student in the Honors Program and was named Outstanding Senior for UC. Katherine has served as President of CEAS Ambassadors as well as in other leadership positions. Katherine is a dedicated runner, and has been a member of the UC Cross Country team since her freshman year and Big East All-Academic Team since 2007. She hopes to continue to run and would like to coach Cross Country at the high school or junior high level. She is also interested in continuing to serve as a volunteer at Ronald McDonald House. Katherine has accepted a position as a process engineer at P&G following graduation.

Tim Janek, Mechanical Engineering, has been involved in various organizations since his freshman year, and quickly stood out as an individual who could manage events and shoulder responsibility. He’s been a moving spirit in the Tribunal-sponsored Career Fair for three years. His list of volunteer efforts is impressive: he has worked with Habitat for Humanity, Relay for Life, Clifton Community Cleanup, to name a few. As Tribunal president, he finds time to act as liaison between the Dean’s Office and the student body, and he helped to pass the recently adopted honor code, a first-ever for the UC campus. Tim has accepted a position as a customer quality engineer at Sensata Technologies.
The College of Engineering and Applied Science hosted a gala event to honor distinguished alumni, faculty and students. The evening began with a cocktail reception followed by a formal dinner and presentation of awards. The banquet was held at the Hilton Cincinnati Netherland Plaza in the grand Hall of Mirrors. Honorees included:

Herman Schneider Distinguished Alumnus, John Grisik, BSM '69, MS '71, DSE '75
Engineering Technology Distinguished Alumnus, Robert Wright, AAS '81, BSFSET '93
Lifetime Achievement Award winner Kenneth Glass, BSME '63, MSAE '65

The emcee for the evening was Rajiv Satyal, Class of 2000, who has chosen to pursue a career in comedy instead of engineering. His amusing delivery kept the audience entertained.

L-R, Kenneth and Nancy Glass, Carlo and Pam Montemagno, Robert and Diane Wright, John and Jean Grisik

The Class of 1961, pictured above, attended the banquet as part of their 50th reunion celebration.
Personally and professionally, we all strive to develop “win-win” relationships, where both parties benefit by adding value to each other.

If you’re reading this story, one such “win-win” for you is your relationship with the University of Cincinnati and the College of Engineering and Applied Science (CEAS). After all, your pathway and success in life are largely by-products of being a UC and CEAS alum.

That awareness drives many CEAS alumni to stay involved with the university, give back in various ways, and help their fellow Bearcats — especially the next generation coming behind them.

Rich Foley, CEAS ’61, had a long career at Harris-Seybold, the Dayton company where he did his co-op work. While he and his wife, Marlene, CECH ’60, were interested alumni for many years, they felt their relationship with UC grow and change for the better when their involvement deepened through the establishment of the Richard G. and Marlene D. Foley Endowed Scholarship Fund. Their scholarship is awarded to a first-year CEAS undergraduate student.

“When we started the Engineering scholarship, we began to enjoy greater and more meaningful connections within the UC family — and we’ve really had a lot of fun,” Foley says. “Our UC network has grown, we’ve met many interesting people, and we’re making a difference for today’s students and tomorrow’s alumni. I want others to have the same opportunity for success that UC provided me.”

Foley helped immeasurably with this year’s Golden Reunion of his Class of ’61, gathering information and encouraging members of his CEAS class to attend. He has also been a leader of the UC Alumni Association’s efforts in Dayton. His contributions were recognized with the 2011 Alumni Distinguished Service Award, presented by the UC Alumni Association at the annual UC Day Celebration on June 9.

Tom Vinciguerra, CEAS ’76, believes in UC, his college, the UC Alumni Association, and the need for alumni to be supportive of each.

“Under President Greg Williams and Dean Carlo Montemagno, blueprints have been created for UC and the College of Engineering and Applied Science to be leaders on a global scale,” says Vinciguerra, president of the CEAS Alumni Association board and chair of the UC Alumni Association board’s Strategic Development Committee.

“The university and our college intend to elevate their influence, innovative capabilities and international identity,” he says. “Such leadership requires our investment and involvement. Neither UC nor CEAS can fulfill its promise without the energy, expertise, enthusiastic support, and engagement of its alumni.”

Vinciguerra echoes Foley’s sentiments about being involved as alumni.

“While it’s important for alumni to make regular gifts to UC — even if it seems like a small amount — there are many additional ways to support UC and our college, including volunteering your time and talent,” he says.
“UC, the College of Engineering and Applied Science and the Co-op Program are a winning combination that launched me into a long and fulfilling professional career. Fortunately I’ve had the opportunity to continue my support of CEAS and co-op by sponsoring co-op programs wherever I’ve worked, and by hiring many UC engineers. I like to think my two daughters as UC engineering graduates, Lisa ’05 and Janna ’11, came to the same conclusion.”

“There’s a lot of potential with the UC Alumni Association’s 1819 and UC Where You Are initiatives. The 1819 opportunity is great for our alums who haven’t been very engaged with UC, but are open to taking a small step forward and supporting the university. UC Where You Are can help ‘make’ a UC community no matter where you are. It’s perfect for alumni who are relocating or just trying to make connections with other Bearcats in their area.”

— Shadaia Gooden, CEAS ’02

‘1819’ adds value to every UC degree
The percentage of alumni who give back to their university each year (in any amount) is part of the formula used to create U.S. News & World Report’s annual college rankings. And as UC’s ranking climbs, so does the value of each UC degree — as well as the stature of its individual colleges such as Engineering and Applied Science.

About 15% of CEAS’s alumni gave back to UC last year, so there’s enormous room for growth. Fortunately, the new 1819 initiative (honoring UC’s founding year) makes it easy to help. A gift of just $18.19 will help fund important programs, create new opportunities for current students, enhance your own UC connection, and show the strength and commitment of UC’s alumni family.

UC and CEAS deserve the support of all alumni. Visit www.uc.edu/1819 for details. Make an 1819 gift and make a big difference for UC!