



The University of Akron Civil Engineering News

October 2008

Volume 1, Issue 2

CFCE Continues Commitment



Pictured L-R at the Scholarship Awards Breakfast: Lou Ciraldo, master of ceremonies, Bob Hochevar, CFCE chairman, Scott Armstrong, CFCE treasurer

A new season of CFCE (Committee for the Future of Civil Engineering) activities has begun with changes, challenges, and sponsored activities. A transfer of power of the chairmanship from Mike Cavanaugh to Bob Hochevar and Scott Armstrong, who became chair and vice chair of CFCE respectively, marks the start of the fundraising season. Mike is commended for his three years of service as chairman highlighted by a significant increase in funding raised for student scholarships, ASCE student team activities, and the CFCE endowment.

Some of the challenges the Committee will face in the upcoming season are: a slowing economy, the retirement of committee members, a significant enrollment increase bringing with it an increase in competition for scholarships, and tuition increases exerting pressure to increase individual scholarship amounts. As a result, Bob and Scott have taken action to address some of these concerns. Neal Greshan will review and improve CFCE bylaws. Lou Ciraldo will further improve the letter used for fund solicitation while Dave Granger leads the

Corporate Donation Development Team in an effort to identify all potential corporate donors. Kathleen Bogue and Dave Day will be responsible for mass mailing and Kim Stone will keep all loose strings in check including tracking incoming donations, organizing monthly meetings, keeping minutes and managing student applications. Kim, together with Christina Christian, also organized the Scholarship Awards Breakfast on May 1, 2008. CFCE successfully completed the 2007-2008 season by awarding 21 scholarships totaling nearly \$56,000. This total, added to the department awards, brings the number of engineering scholarships to 35 scholarships totaling \$89,000.

In addition to regular meetings, the Committee sponsored activities for freshmen and other Engineering students. One such successful activity was the fall bowling game. Freshmen students had the opportunity to meet upper classmen, start friendships, play against faculty and professionals, and have a lot of fun. Dr. Binienda was pleased to see the entire CE family in good spirits and doing well.

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Banner Year for ASCE Student Chapter



The University of Akron's Concrete Canoe Team.

The past year has been one of many great achievements for the University of Akron's American Society of Civil Engineers (ASCE) Student Chapter. ASCE is an organization for students run by students and advised by Dr. Chris Miller and Dr. Daren Zywicki. The group hosts biweekly luncheon meetings throughout the year. Each year, they plan various events as well as host two competition teams, the Concrete Canoe and Steel Bridge teams. As a result of all of the members' hard work, this year has proven to be one of their most productive and successful years.

The ASCE sponsors many events aimed at introducing students to their organization and to civil engineering. Last summer, they hosted a Pig Roast as a fundraiser for their group. It went well and they will be hosting another this summer in conjunction with Stark State's ASCE Student Chapter. The date is yet to be announced. The Committee for the Future of Civil Engineering (CFCE) sponsors ASCE each year and together they sponsor an event each semester. These events are advertised to freshmen in all disciplines of engineering in hopes that a few of them discover more about civil engineering. This past fall, they had a Game Room Night in the Student Union with free bowling, billiards, and pizza. In the

spring, they had a Cookout Night in the Exchange Street Residence Hall courtyard with free hamburgers and hot dogs, cornhole, Frisbee, and more. The ASCE also hosts the High School Model Bridge Competition which was strong in completing its twenty-fourth year. The mission in hosting the model bridge competition is to introduce students from local high schools to engineering principals and hopefully spark their interest in civil engineering. ASCE's Vice President, Dave White, organized the event with much help and support from the group. They had nearly 75 bridges and nearly 100 participants!

Perhaps the most prominent achievements of the past year were the two competition teams, the Concrete Canoe and Steel Bridge teams. The Concrete Canoe team works year round beginning in the summer until the day of the competition. Led by Captain Mike Denallo, the team placed 2nd overall at the Ohio Valley Competition qualifying them for Nationals. The Concrete Canoe process begins by creating the hull design for the canoe. The goal is to create a light, stable, and speedy canoe for racing. Meanwhile, the mix design team works hard to find specialized concrete components to make a mix that is workable, durable, strong, and has a unit weight lighter than water-



The University of Akron's Steel Bridge Team

yes, their concrete floats! Construction of a male mold leads to creation of a female fiberglass mold. Soon after, pour day arrives when they use the special concrete to create the actual canoe. The team then creates a display table and stands to hold the canoe during competition judging. An oral presentation and technical paper are another part of the judging. Finishing processes are done, like applying stain. Lastly, paddling practice takes full swing to prepare for the races. The team's technical paper took 1st place, aesthetics 2nd place, oral

presentation 2nd place, and 2nd place in all races. The Steel Bridge team also works most of the year on their final product. This year's captains, Justin Arnold and Nate Foote, lead the team to a 1st place victory qualifying them for the National competition as well! In the fall, the team is assembled and holds weekly meetings to discuss the bridge's design. The proposed designs are drawn and tested using computer analysis. Once a final design is chosen, the team begins fabrication. The team's members learn about fabrication, train on the machine shop equipment, and complete the work all in house. This past year, they made each part of the bridge themselves! In previous years, member connections were water jetted for precise fit. The team then needs to construct the bridge. Speed and accuracy are a major part of this task. This year, the bridge was built by four men in less than ten minutes! At competition, the bridge is built, tested for deflection, and judged on aesthetics. The Steel Bridge team took first for best construction economy, and first place overall!

The Department of Civil Engineering congratulates the ASCE student chapter members, teams and advisors for all of their achievements over the last year.

Gas Turbine Research and Testing Facility Update

The past several months were used to calibrate MTS testing machines: 22 kips tension-torsion, 100 kips four post tension compression, and new actuator for 300 kips frame. Dr. Patnaik's group will utilize these machines for their reinforced concrete beam research.

Bill Wenzel and Brett Bell began assembling the 6 inch diameter 24 ft long gas gun. The gas gun is completely funded by NASA Glenn Research Center and will be used by Dr. Binienda's group to test aged composite panels under high velocity impact. At the present time, composite panels are exposed in the Environmental Chamber (right) to similar thermal and moisture conditions as any jet engine components are subjected to during a typical flight.

Graduate students also use the laser vibrometer to measure structural vibrations, Laser shearo-

graphy to determine delaminations and other defects in composite structures, and ARAMIS image correlation system with regular digital cameras and high speed cameras to measure surface deformations.





NASA Celebrates 50th Anniversary



Ohio Astronauts attend the 50th Anniversary Gala on August 29, 2008 in Cleveland, Ohio.

Neil Armstrong and John Glenn were among about 20 astronauts who gathered August 29th to honor NASA's 50th anniversary and its strong Ohio link. Dr. Binienda was invited to attend this historic gathering and celebration gala which was hosted by the Ohio aerospace community to celebrate NASA's 50 years of innovation, inspiration and discovery. John Glenn, the first American to orbit Earth and a former Ohio Senator, served as the honorary chairman of the event while veteran NBC News Space Correspondent Jay Barbree, the only journalist to cover every manned space launch in the United States, was the keynote speaker.

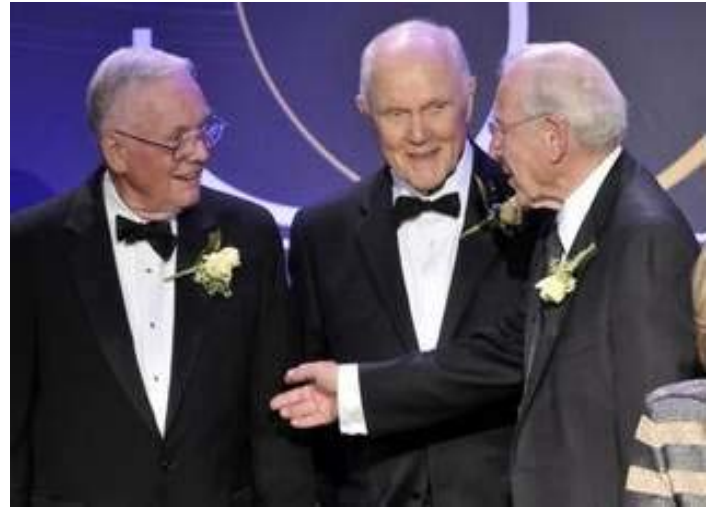
Ohioans have played an important role for the nation's space agency. Glenn, 87, born in eastern Ohio, piloted the Mercury-Atlas 6 "Friendship 7" spacecraft on the United States' first manned orbital mission on Feb. 20, 1962. Neil Armstrong, 78, was born in western Ohio and is the Apollo 11 astronaut who was the first to set foot on the moon July 20, 1969. Cleveland-born James Lovell, 80, who became the first man to journey twice to the moon,

also participated. In 1970, he was commander of Apollo 13, which had to abruptly change its moon mission due to a failure of the service module cryogenic oxygen system. Lovell and fellow crewmen, John Swigert and Fred Haise, worked under emergency conditions closely with Houston ground controllers to get back to earth. Other Ohio astronauts attending or honored included: Charles Bassett, Kenneth Cameron, Nancy Currie, Donn Eisele, Michael Foreman, Michael Gernhardt, Michael Good, Gregory Harbaugh, Karl Henize, Thomas Hennen, Terence (Tom) Henricks, Kevin Kregel, David Low, Robert Overmyer, Ronald Parise, Judith Resnik, Ronald Segal, Robert Springer, Kathryn Sullivan, Donald Thomas, Carl Walz, Mary Weber, and Sunita Williams.

Towards the end of the celebration, the astronauts engaged in a conversation to celebrate and reminisce about their contributions to the space program. When asked about his experiences and the difficulty involved, Glenn stated, "We had a few people who thought it would be very difficult to

walk on the surface, but the human body is remarkably adaptive...After we stood around in the cockpit for a couple of hours, we adapted. When we came down from the craft onto the surface, we already were right at home.”

NASA also recognized the role of its Glenn Research Center in Cleveland. The Center, in partnership with U.S. industry, universities, and other government institutions, aims to advance space exploration of the solar system and beyond through world-class research and technology. NASA Glenn is concentrating on propulsion and energy storage for a booster rocket upper stage and various spacecraft tests and engineering tasks. The Center is currently involved in the Constellation Program that aims to send astronauts to the moon by 2020.



Pictured L-R: Neil Armstrong, John Glenn Jr., and James Lovell (AP)



Spotlight on Alumni

Lou Ciraldo and Scott Armstrong Receive Distinguished Alumni Awards



Lou Ciraldo is a 1976 graduate of The University of Akron with a degree in Civil Engineering. He is currently the President of Summit Construction, a company he founded in 1992. In addition to being a registered Professional Engineer, he is active in the community and remains involved at The University of Akron where he currently serves on the Advisory Council for the Department of Civil Engineering.

When Lou was asked which of his many accomplishments he is the most proud of, he quickly replied that being married for 29 years and raising four children is his greatest accomplishment. As he stated, "It's all about family and children, so that is the biggest accomplishment I can point to." As far as his career accomplishments, he refers to his involvement in the building of a runway extension in West Germany while serving in the military and the building of Canal Park stadium in downtown Akron. Canal Park, home of the Akron Aeros baseball team, was completed in January of 1997 and has approximately 9000 seats. He stated, "It is a great experience to be able to provide a facility that more than just a few people for a short period of time can use."

Lou is involved with the University on many different levels. He has taught Construction Management as a part-time faculty member; his company, Summit Construction, funds a civil engineering scholarship; and he currently serves on the Civil Engineering Advisory Council. But the program that is most important to him is CFCE (Committee for the Future of Civil Engineering). He believes that it is important to help students attend The University of Akron and study civil engineering. Lou can be seen at various CFCE functions such as the CFCE scholarship

awards breakfast which he emceed this past spring.

While reflecting on what he remembers most about his time spent as a student at The University of Akron, he recalls the lifelong relationships that were formed. He remembers time spent out on the water floating in the concrete canoe with friends that he still sees today on both a personal and professional level. He stated, "It's somewhat fortuitous that I attended the school and then was later able to work with one of my good friends, Dave Celik, on Canal Park." At the time, Dave Celik was the City of Akron Engineer.

As with most college students, there were a few regrets about his time spent here. "I wish I hadn't had so much fun that I failed Statics", he said. However, it was those times spent making pizzas and socializing that helped form some of the relationships that he still has to this day.

When asked about the most important things he learned at the University, he lists two things: the technical engineering skills and the business acumen. The engineering knowledge he gained helped him to, as a young engineer, design roads, airfields and small bridges while overseas. The business acumen helped him learn how to develop relationships and build a career. As for his advice to current engineering students, he chuckled "Get through Calculus. If you get through Calculus, you can get through anything." He also noted that there are a variety of opportunities that engineering students are exposed to while in the department, "There are many different facets of engineering that you'll see but the greatest skill is the ability that you will acquire as an engineer to think through situations. You can sit down and weigh through different options and pick the best decision."

Lou's accomplishments demonstrate that a degree in engineering develops the whole person. It provides the proper set of skills to become successful in a highly technical and competitive career. As he points out, "Engineering trains you to stick through thick and thin. The person who gets through engineering, regardless of grade point average, has gotten through a very arduous journey and that makes me, today, be able to survive in business."



Scott Armstrong is a 1982 graduate of The University of Akron with a Bachelor of Science in Civil Engineering. He is currently a Vice President and Division Manager in the Environmental Restoration Sector, Midwest Division of Science Applications International Corporation (SAIC) in Twinsburg, Ohio. SAIC is a leading systems, solutions, and technical services company based in Northern Virginia. Locally,

the firm employs 90 engineering and environmental professionals and support staff from Ohio offices in Twinsburg, Dublin, Cleveland and Sandusky. Prior to joining SAIC, Scott spent 18 years with Environmental Design Group (EDG) where he served as CEO from 2001 through 2004. He takes great pride in his time spent at EDG, stating that one of his greatest career accomplishments was, "being able to join Environmental Design Group in 1986 as a staff level engineer and over a period of 18 years see that company grow from a group of 25 people to 75 - 80 people." After the merger of EDG with Floyd Browne Associates, he served as COO of Floyd Browne Group from 2005 through 2006.

While he is proud of his career accomplishments, he stated, "The single thing I did best in my life was marry the most wonderful person in the world." His wife, Joanne, is a 1977 graduate of The University of Akron with a BSE in both Elementary and Special Education. The two have known each other since high school, have been married 31 years, and are proud parents of a 25 year old son, Matthew.

Scott is an active alumnus and strong supporter of the University's Department of Civil Engineering. He currently serves as co-chair of The Committee for the Future of Civil Engineering (CFCE) and as a member of the Women in Engineering (WIE) Advisory Council.

When asked to reflect on his time spent as a student at The University of Akron, he quickly claimed that he was not a traditional student. After graduating high school, he attended Valencia Community College in Orlando, Florida and, as he described it, "majored in baseball". After a year there he transferred to Kent State University (KSU) where he, "majored in Architecture and minored in baseball" for a year. His 3rd year, he was a part-time student at both The University of Akron and KSU before finally deciding on a major in civil engineering. During this time Scott and Joanne married and he took three years off to work full time while she completed her education degrees. When Scott returned to school, he was older than traditional students and his life was much different than theirs. As he stated, "I was 23 years old and married. The other students I was in the classroom

with that first year back were 18 to 20 and I remember feeling a whole lot different from them." Maybe it was these differences that encouraged Scott's friendship with two other "non traditional" students, Bob Hochevar and Sherry Sloan. He recalled meeting them every morning of their senior year for breakfast and cramming for Basic EE just so they could get through the class. Bob and Scott have remained in contact since graduation and they currently serve as co-chairs for the CFCE.

When asked how the education he received at the University impacted his career, Scott admitted that the basic fundamentals and technical knowledge of the industry and business he learned as a student have helped him in the work place. However, he stressed, "College teaches you how to think, but in the workplace you're certainly confronted with day-to-day issues you don't see in the classroom. That's what benefits students who participate in the co-op program." He is a strong advocate of the co-op program and credits it for his current position at SAIC. While Scott himself never had the opportunity to co-op, he did serve as a co-op mentor. Early in his career, while working at Environmental Design Group, he mentored Jeff Dick, a co-op student from the University. Jeff went on to the University of Cincinnati where he earned a MS in Environmental Engineering. Jeff and Scott stayed in contact over the years and one day Jeff approached him and offered him a job at SAIC. As Scott stated, "the student became the teacher" as Jeff was promoted within SAIC and trained Scott to become his replacement. Scott has since encouraged SAIC's involvement in the university's co-op program. He has only been with SAIC for one and a half years but during that time the company has awarded its first engineering scholarship through CFCE and that individual, Heather Parker, will also be coming on board as the Division's first University of Akron co-op.

In addition to the co-op experience, Scott believes that communication skills are important for every engineering student, "I would recommend that all students take public speaking and writing classes. While students graduate very well prepared technically, often their communication skills are lacking and those are critically important in business." He admitted that he deals with these issues on a regular basis. Often young engineers have a difficult time explaining their ideas to non-engineers. As he explains, "they sometimes talk over folks' heads because they know the information so well, but can't find the right words to communicate the information to the general public".

Over the years, Scott has worked hard to advance his career. As for many people, the road was not always clear and the path was not always easy to follow. When asked if he would change anything about his time spent at the University, Scott stated, "In all honesty, I don't think I would do anything differently. I took the long and winding road, but it was part of the process that got me where I am today."

Student Successes

Internship Gives Graduate Student Real World Experience

Yan Zhang is a PhD student in the Computer Modeling and Simulation Group in Civil Engineering and is advised by Dr. Ernian Pan. Prior to joining this group, Yan received both her BS and MS degrees in Civil Engineering from Huazhong University of Science and Technology in China. While working towards her PhD at The University of Akron, Yan was involved with elastic and electric fields analysis of quantum wire and quantum dot semiconductors. In the summer of 2008, she received an internship from American Bureau of Shipping (ABS), one of the world's leading ship classification societies. In ABS, she was assigned two projects: Finite Element Analysis (FEA) Rule Harmonization and Hot Spot Stress for Bulk Carrier Hatch Corner Fatigue. The goal of the two projects is to define the general boundary conditions and the method of load applications that will be applied for all ships and give reliable fatigue stress assess-

ment for Bulk Carrier Hatch Corner. This internship is providing her the opportunity to develop professional skills, learn about work environments and discover what type of work best suits her talents and experience. She plans to receive her PhD in May 2009.



Chen Awarded Eisenhower Graduate Fellowship



Yuanguo (Ewan) Chen received the Eisenhower Graduate Fellowship from the Federal Highway Administration (FHWA), Department of Transportation (DOT). This fellowship will support Chen's PhD study

for two years starting from fall 2008. Chen works on the mechanistic modeling of flexible pavement, especially on the viscoelastic modeling part. Chen succeeded in developing a semi-analytical solu-

tion for multilayer viscoelastic pavement to stationary load, a benchmark work in this field. The fellowship will support Chen conducting more challenging work. For example, Chen will extend his semi-analytical solution to moving load, and more importantly incorporate his work into the Mechanistic-Emperical Pavement Design Guide (MEPDG), which is currently based on multilayer elastic theory. The accomplishment of this work will upgrade the MEPDG to a new generation aimed at a more realistic viscoelastic model for flexible pavement. Chen is studying under the leadership of Dr. Ernian Pan.

CFCE Scholarships Provide Opportunities



Pictured L-R: Chris Arnold, Fred Triggs, Dr. Binienda

University of Akron Civil Engineering student Chris Arnold is one of several engineering students benefiting from a CFCE (Committee for the Future of Civil Engineering) scholarship. Chris recently had the opportunity to meet his benefactor, Mr. Fred Triggs, at a luncheon at The University of Akron. Mr. Triggs was impressed with the integrity and leadership of the university's civil engineering program. The generosity of Mr. Triggs and many other benefactors, along with the support of CFCE, allows The University of Akron's Civil Engineering program to recruit many top level students across the country. It is their continued commitment to higher education that provides our students the best opportunities available.

U of A Student is SMART Scholar

Across the country are several laboratories whose research is aimed at providing and improving technologies for American defense. Some of these laboratories do basic and exploratory research for the military of future generations, while others are more focused on helping the soldier in the field in the here and now. All of them need to keep attracting new talent--and that is where the SMART (Science, Mathematics and Research for Transformation) scholarship comes in. SMART scholars are awarded full tuition coverage and a generous stipend, and in return, these scholars are required to become interns over the summer at one of the many defense labs in this country, and after graduation, to become employees of these labs for as many years as they were funded under the scholarship.

J.J. Ramsey, a University of Akron graduate student in civil engineering, is one of these SMART scholars for the year 2008, along with 178 other students across the country. During the summer, he attended the SMART scholarship orientation in Monterey, California, where he had opportunities to network with fellow SMART scholars and to take in a few of the sights at Monterey. He will be interning at the Army Research Laboratory in Aberdeen Proving Ground, Maryland, working under Dr. Peter Chung, who has been working



with Ramsey's advisor, Dr. Ernian Pan, for the past few years on quantum dot research. He will likely be continuing this work on quantum dots during the internship.



Civil Engineering Scholarships

The College of Engineering's enrollment rate has increased nearly 40% since 2004. With tuition and fees currently at approximately \$8,000 a year, more students than ever are in need of financial assistance. Several individuals and organizations have offered assistance to these students through academic scholarships awarded through the Department of Civil Engineering. The academic scholarships awarded for the 2008-2009 year included: ARCADIS Scholarship, Chalmers Brown Endowment Fund Scholarships, Hammontree Endowment in Engineering, Cavanaugh Building Corporation Scholarship, Cavanaugh Building Corporation Employees' Scholarship, Future of Civil Engineering Scholarship Fund, GPD Associates Scholarships, GPD Employees' Scholarship, Hammontree & Associates, Ltd. Scholarship, Hummel/Ridgeway Scholarship, Kenmore Construction Company Scholarship, McCabe Engineering Corporation Scholarship, Levi A. MacDonald Scholarship, Daniel Posilovich Scholarship, The Ruhlin Company Scholarship, Science Applications International Corporation (SAIC) Scholarship, Summit Construction Company Scholarship, Summit Testing & Inspection Company Scholarship, Timmerman Geotechnical Group Scholarship, Triggs Technologies Scholarship, and the URS Corporation Scholarship.

These scholarships are made possible through the generous support of individuals and organizations alike. The Department of Civil Engineering and The College of Engineering would like to thank the following patrons who have made individual contributions: Akron Bureau of Engineering, Thomas Andrews, Anonymous, ARCADIS, John and Joann Barnhouse, Ray Bertolini Trucking Co., Scott and Joanne Armstrong, Edward and Wendy Block, Travis and Debora Capper, Cavanaugh Building Corporation, Cavanaugh Building Corporation Employees, Mike and Cathy Cavanaugh, David and Laurel Celik, David Chapman, Joseph and Mary Jo Ciuni, S.A. Comunale Co., Inc., Charles Corns and Jeanne Jackson-Corns, Bradley and Martha Cramer, CTI Engineers, Inc., Mohamed Darwish, Maria and Stuard Davis, Robert and Betty Edwards, Jeffrey Evans, Robert Flower, Greg Fowkes, Edward Franks, David and Natasha

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If you would like to donate to the Department of Civil Engineering Scholarship Fund, please contact:

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Scholarship applications for new and existing students can be found at <http://civil.uakron.edu/index.html>.