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Message from the Dean



Greetings from the School of Engineering.

During Spring and Summer 2008 semesters, our students continued building a reputation for excellence among engineering schools through their success in national and international collegiate contests. You will read more about our outstanding groups of students in this newsletter.

I am very happy to report to you that we recruited four distinguished assistant professors during the spring 2008. They will join us in fall 2008. We will introduce them to you in our January 2009 newsletter.

Please join me to congratulate Drs. Susan Morgan, Jerry Weinberg, Bill White and Prof. Dianne Slattery for securing a substantial NSF scholarship grant to attract well-qualified high school students to our engineering programs. The program will start recruiting students for fall 2009, and will continue for four years.

This summer, we raised the bar for the area high school students who participated in the newly designed "engineering summer programs." More than 50 students were challenged with hands-on engineering projects from various engineering disciplines, computer science and construction. The Summer 2008 program will be the starting point for the School to become a center for the area junior-high and high school students to be introduced to engineering.

The doctoral program that we initiated collaboratively with our sister institution, SIU Carbondale, started officially in January

2008. Already, eight students are enrolled in the program for fall 2008.

The Industrial Engineering master's program was approved by the Illinois Board of Higher Education in April 2008. It will officially begin in fall 2008. We already have enrolled several students.

Finally, four students from Istanbul Technical University (ITU) will join the industrial engineering program in fall as part of the dual diploma program agreement we signed with ITU in 2007. These four students are the first group of students who successfully passed the English placement test and completed the freshmen year at ITU. We expect 25 students in fall 2009 and thereafter under this program.

The faculty and staff of the School are preparing for a fabulous fall 2008 semester. We will keep updating you on our progress toward excellence.

Hasan Sevim, Dean

School of Engineering Open House

The School of Engineering celebrated its 7th annual open house on February 23, 2008 with a record turnout. Cold and icy weather couldn't stop 500 prospective students and parents from attending. "The atmosphere inside was very warm

and festive," said Hasan Sevim, Dean of the School.

The Dean said the open house was designed for interested students to learn about curriculum and programs. "The faculty, staff and students of the School of Engineering made a com-

mendable presentation of what we offer," Sevim said. "After a general presentation, visitors were directed to the departments in which they were interested where faculty and students gave presentations and laboratory demonstrations.

Second Annual Awards Banquet

The SIUE School of Engineering honored outstanding teachers and students at the School's Second Annual Awards banquet.

More than 230 students, faculty, staff, alumni, advisory board members, and friends attended the event. Six faculty members and 16 students were honored.

Ying Shang, Assistant Professor of Electrical and Computer Engineering; Jim Zhou, Assistant Professor of Civil Engineering; Ryan Krauss, Assistant Professor of Mechanical Engineering; Jacob Van Roekel, Professor of

Industrial and Manufacturing Engineering; Chris Gordon, Assistant Professor of Construction Management; and Stephen Blythe, Assistant Professor of Computer Science, were awarded for Teaching Excellence in their respective departments.

Alum, Vic Reznack, who received his EE degree from SIUE in 1977 and his MBA in 1989, was the keynote speaker. During the past 10 years Vic has served on the Advisory Board and is currently serving as Chairman of the Advisory Board. He gave a much inspiring talk titled "Adapting to Change".



2008 Teaching Excellence Awards winners; from left: Jacob Van Roekel, Ryan Krauss, Chris Gordon, Stephen Blythe, Jim Zhou, Ying Shang, and Dean Sevim

Students Recognized at Awards Banquet 2008

Josh VerDught, Outstanding Junior, Civil Engineering

Clint Dougherty, Outstanding Senior, Civil Engineering

Barbara Lehan, Outstanding Graduate Student, Civil Engineering

Jared Saul, Outstanding Junior, Computer Science

Jennifer Koenig, Outstanding Senior, Computer Science

Ross Mead, Outstanding Graduate Student, Computer Science

Megan Ladwig, Outstanding Junior, Construction Management

Kevin Nesselhauf, Outstanding Senior, Construction Management

Alicia Clayton, Outstanding Junior, Electrical and Computer Engineering

Kurt Clothier, Outstanding Senior, Electrical and Computer Engineering

Melanie Rodrigues, Outstanding Graduate Student, Electrical and Computer Engineering

Chad Olson, Outstanding Junior, Industrial and Manufacturing Engineering

Sara Atwell, Outstanding Senior, Industrial and Manufacturing Engineering

Kaci Backs, Outstanding Junior, Mechanical Engineering

Jenna Toennies, Outstanding Senior, Mechanical Engineering

Yi Liu, Outstanding Graduate Student, Mechanical Engineering



2008 Award Winning Students

Outstanding Service Awards

Miles Musick JESC President

Troy Turner JESC Vice-President

Shane Spears JESC Secretary

Suzanne Shaffer JESC Treasurer

Industrial Engineering Master's Program Starts in Fall 2008

The Master of Science (MS) program in Industrial Engineering was approved by the Illinois Board of Higher Education (IBHE) in April 2008, and will kick off in fall 2008. At least four students have already enrolled. "We expect an enrollment of about 20 students by fall 2010. This is a program that will serve to the professionals of engineering and manufacturing community in the

Metropolitan St. Louis who would be seeking a graduate degree to advance in their careers" said Dr. Cem Karacal, Director of IME Program.

The MS degree program is comprised of four concentration areas: systems optimization, manufacturing engineering design, enterprise and production control, and quality engineering. Core courses are offered in

the areas of engineering optimization, quality control, production planning, and manufacturing design. The core courses will be offered annually; other courses will generally be offered once every two years. More information about the program can be found at: <http://www.siue.edu/ENGINEER/IE/>

Faculty Awarded NSF Scholarship Grant

In July 2008, the School of Engineering received a \$600,000 scholarship grant from the National Science Foundation (NSF). Dr. Susan Morgan was the PI of the proposal; Drs. Jerry Weinberg and Bill White and Professor Dianne Slattery joined her as co-PI's. The \$600,000 grant will be divided into two-year scholarships, for three cohorts of 16 students each, for a total of 48. The scholarships

will benefit qualified freshmen students who can demonstrate financial need and meet other criteria, beginning in fall 2009. Scholarship amounts will range from \$2,000 to \$10,000 per academic year and will be used for any "unmet campus need," such as tuition, fees and housing.

A website to be linked to the School of Engineering will be developed during fall 2008 for

prospective applicants. The deadline to apply will be January or early February. The applications will be reviewed in March, and students will be notified in April.

Congratulations to the four faculty members for bringing such a prestigious award to SIUE.



Professor Dianne Slattery



Dr. Jerry Weinberg



Dr. Susan Morgan

Faculty Awarded University Grants

The School of Engineering has had very good success with the Funded University Research (FUR) and Excellence in Undergraduate Education (EUE) proposals this year.

For FUR awards, three of our five proposals were funded for a total of \$20,104. Congratulations to Ying Shang, Ryan Krauss, and Serdar Celik.

For EUE competition, six of our

seven proposals were funded for a total of \$54,758.

Congratulations to Chris Gordon, Carla Lopez, Keqin Gu, Cem Karacal, Chiang Lin, Brent Vaughn, Mark Rossow, Ying Shang, Steve Muren, Brad Cross, and Susan Morgan.

Seven of the eight Summer Research Fellowship proposals submitted from the School have been approved. What is par-

ticularly rewarding is that five of the seven are our assistant professors and one a newly promoted associate professor.

The winners are Bob LeAnder, Serdar Celik, Dennis Bouvier, Ying Shang, Ryan Krauss, Hiroshi Fujinoki, and Jen-Shuin Chen.

Check out the School of Engineering's giving opportunities page at:
www.siu.edu/engineering/giving/

IME Student Project Won First Place in National Competition

A team of Industrial and Manufacturing Engineering (IME) students recently won first place at the national Unigraphics computer aided design competition, the second year in a row that an SIUE team has won the national competition and the fifth year in a row that an SIUE team has ranked in the top three.

This year's winning SIUE team—Grant Donohue, Corey LaBarge, Ashley Robeen and Caleb Gerber—designed a cost-effective and environment-friendly product, "Ameriblock," with dual usages: as modular shipping containers replacing traditional large-size metal shipping containers and also as struc-

tural components replacing concrete/bricks. The industrial engineering undergraduate team was assembled in January and worked on the project under the supervision of IME Professor H. Felix Lee and Construction Management Associate Professor Kerry Slattery.

In the finals of the competition, the SIUE team beat four schools—Virginia Tech, McMaster University in Canada, Michigan Tech and The Principia. Robeen attended Unigraphics's week-long conference in Orlando, Fla., to make a presentation about SIUE's winning entry. "The basic idea of this project was originated by a local entrepreneur who came to

SIUE for engineering and technical help," Lee said.

"The team's design is shown to be cost effective, structurally sound and time saving."



Ashley Robeen accepted the SIUE team's first place award in Orlando, FL

St. Mary's Catholic School Wins Botball Tournament

The 2008 Greater St. Louis Botball Tournament was hosted by the Department of Computer Science in April 2008. The regional tournament is where education, robotics and fun intersect. "Robots from four states converged on the campus to compete," said Jerry Weinberg, Professor of Computer Science and coordinator of the tournament.

Weinberg pointed out that autonomous robots were designed and built by 17 teams from middle and high schools across Illinois, Indiana, Michigan and Missouri who competed in the head-to-head robotics tournament. Some 200 students "did battle" for a large crowd of teachers, parents, and the general public in the Meridian Ballroom, on the first floor of SIUE's Morris University Center.

The winner of this year's tournament was a



Students from Grandville Middle School (Grandville, MI) prepare their robot for a tournament round.



Students from Lincoln Middle School (Edwardsville, IL) calibrate their robot.

team from St. Mary's Catholic School in Edwardsville. The smaller of their two robots managed to deploy the bridge on their side, make it across, then deploy their opponent's bridge so that the larger of their robots could also make it across. Then, in a last moment effort, the larger robot made it deftly through the narrow passage to win the day.

"During the final round, St. Mary's team of two robots performed perfectly. The tournament finale was the only time during the many tournament rounds of the day that a team of robots was able to pull off such a coordinated feat," Weinberg said.

The maneuver scored significant points for the St. Mary's team giving them the solid win. St. Mary's is no stranger to success as this was the third year they competed in the Botball Regional, winning top honors all

three years.

The overall winners were:

1st Place:

St. Mary's Middle School, Edwardsville, IL

2nd Place:

Edwardsville High School, Edwardsville, IL

3rd Place:

Waterloo High School, Waterloo, IL



Students from De Lasalle Middle School (St. Louis, MO) making last minute adjustments to their robot.

Technical Award for Autonomous Robotic Golf Cart

A robot golf cart built by a team of the School of Engineering students, faculty and staff won a technical award at a recent international conference on artificial intelligence.

The SIUE team's winning entry, Roadrunner, is a robot golf cart that uses color imaging technology to distinguish and maneuver multi-surface paths. The award was given to SIUE at the Robot Exhibition of the Twenty-Third Association for the Advancement of

Artificial Intelligence conference earlier this month in Chicago.

"Roadrunner uses an inexpensive color Web camera to navigate," said Jerry Weinberg, Chair and Professor of Computer Science.

"It processes each frame of the camera image to distinguish what part of the image is the pathway, the direction the pathway is heading and the point in the image to steer towards to stay on the path." Weinberg said the team has been testing Roadrunner on

campus pathways.

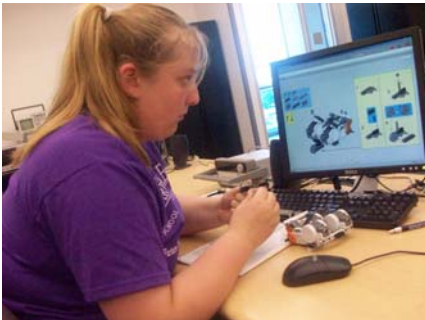
The golf cart was exhibited alongside robots from universities in the United States, Canada and Japan. Weinberg said Roadrunner received a great deal of attention, because it was created for less than \$1,000 and performs the same task as robots competing in full-size vehicle competitions. He said many of the full-size vehicles cost hundreds of thousands of dollars.

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Summer Programs for High School Students

More than fifty high school students from 15 schools around the region practiced their science skills recently at three summer programs hosted by Southern Illinois University Edwardsville's School of Engineering. Some students built scale-model fuel cell cars that ran on water, while others constructed a working bridge made of PVC pipes.

But the most excitement was generated by the group that built and raced hovercrafts. It was the element of competition that got these students' "engines" racing, said Oktay Alkin, Associate Dean for the School. "When they're doing something that they can use later to compete against others, that's when they really get excited," Alkin said. "It's that competitive streak in them. If we let them try to do a better job than the others around them, it gets them more motivated and more interested."



A student puts together a programmable robot with the help of computer software.

The high schoolers, who lived on campus for the summer programs, were able to choose several projects to work on other than building and racing fuel cell cars and bridge construction. Other activities included building a robot, developing computer programs, working with interactive sound and video processing hardware and designing and building a rain garden. Leading the novice engineers were faculty members from the School's Civil Engineering, Computer Science, Construction, Electrical and Computer Engineering, and Mechanical and Industrial Engineering departments.

Although the summer programs have been taking place for several years, Alkin said this year's activities were different. "We took it to a new level this year," he said. "We found some research on the characteristics of what gets high school kids excited and motivated, so we changed it quite a bit to suit that."

Judging from the feedback after the programs, Alkin said the changes were well made. "Response was very positive," he said. "Many students indicated they intend to pursue engineering and go into the field as a career. Some even said they wanted the programs to be longer. The feedback was very good."

It was so good that Alkin is already making plans for next summer's event. Of particular



Students assemble the PVC bridge

interest is the recruiting of minority and female students into the University's Science, Technology, Engineering and Mathematics (STEM) efforts. These are two groups that are underrepresented in the field today, Alkin added. "It's hard to tell at this point if we'll get the funding for that but we need to recruit more of these students," he said. "We're considering incentives such as scholarships, perhaps."

The engineering outreach event also included nonscientific activities such as bowling, films and play time at the University swimming pool. But Alkin said it was the engineering time that generated the strongest response. "We know that students don't like listening to lectures. They make this very clear to us," he said, laughing. "When they're doing something hands-on, that's when they're having fun."

(continued from page 4)



The SIUE Team with their golf cart

"It gives us recognition as a University, doing top research in artificial intelligence and robotics," Weinberg said of the award. "We did an excellent job. We're very pleased with the way the golf cart turned out."

In addition to Weinberg, SIUE's autonomous robot team includes faculty members George Engel, Professor of Electrical and Computer Engineering, and Ryan Krauss, Professor of Mechanical Engineering, as well as students Ross Mead of Computer Science, and Electrical Engineering students Jeff Crox-

ell, Nick Italiano, John Hiatt and Bryan Adams. The team also includes Mechanical Engineering students Aaron Backs, Matt Gorlewicz and Jenna Toennies.



SIUE Concrete Canoe Team Invited to National Competition

SIUE ASCE Student Chapter again competed very successfully in the Concrete Canoe competition at the Mid-Continent Regional Conference. This year's competition was held April 17-19, 2008 at the University of Arkansas in Fayetteville. The students competed against 10 major universities with civil engineering programs in the Midwest. Strict design and construction specifications challenged the students to meet the requirements, yet allowed them to innovate where possible to enhance their success.



2008 Concrete Canoe Team with canoe "Play Ball"

In the Concrete Canoe competition students designed and fabricated a 20-foot long canoe using Portland cement as the main binding agent along with lightweight aggregates and reinforcement. At the competition they were judged on their report and formal presentation skills concerning the canoe design and construction process. Then they competed in sprint and endurance races.

The 2008 canoe, "Play Ball!," weighed about 160 pounds and the hull was about one-half inch thick. The team won Second Place Overall out of 11 teams. They won First Place for the Final Product, Men's Final Sprints, Women's Slalom/Endurance Race and Men's Slalom/Endurance Race; Second Place for the Design Paper and Coed Final Sprints; Third Place for Oral Presentation; and Fifth Place for Women's Final Sprints. The SIUE women beat the men's time for 7 of the 9 teams that competed in the slalom/endurance race.

Because of the high individual scores in multiple categories, ASCE invited the SIUE



Team members competing in the Coed sprint

team to participate in the 21st Annual ASCE National Concrete Canoe Competition held in Montreal, Quebec, June 19-21. There, the team managed to place 19th out of 22 even after the canoe suffered severe damage from shipping.

The team is composed of co-captains Jennifer Titchenal and Troy Turner and teammates Ryan Zwijack, Laura Niemeyer, Don Seitz, Jessica Huxman, Jessica Schuerman, Kyle Hannel, Trisha Youngquist, and Andrew Owens.

Cougar Baja team finished 6th out of 95

A group of Mechanical Engineering students designed an off-road vehicle and took it "on the road" to Tennessee Technical University where they competed against students from 95 other universities representing six countries.

While this was the second year competing for the Cougar Baja team, it was the first time they have been required to build a



The car becomes airborne during a race

vehicle that is also amphibious. The team relied heavily on fluid dynamic principles while designing the floatation system on the vehicle. The design utilized common objects such as boat buoys and trailer fenders to direct water flow. For their creativity, the team was awarded maximum points for originality and innovation during the design judging competition.

The SIUE team finished 15th overall thanks in part to a first place finish in the sled pull and a sixth place finish

in the four-hour endurance race. Team Co-Captain Justin Schnitker said, "We knew we would place high when only 20 cars remained operable after two hours, but sixth place was a very pleasant surprise."

"While final results are yet to be posted, it is

"It's definitely a great time to be a Cougar"
-Miles Musick



Driver Kyle Corcoran launches the car on a jump during the Endurance race

safe to say that SIUE outperformed all Big Ten schools and all but one international school entered in the event," said Schnitker. Team Co-Captain Miles Musick added, "Today...after performing that well, it's definitely a great time to be a Cougar."

Formula SIUE Racing – A Year of Success

The second year of competition for Formula SIUE proved to be a learning experience. The 2008 team, composed of all new first year members, designed, built, and raced a car that placed 25th out of forty-three registered national and international teams.

After months of planning and fabricating and a budget of just over \$20,000, the car was completed in mid April, just in time for the Formula SAE VIR competition at the Virginia International Raceway. The team

competed against several top universities with many years of racing experience.

The team did well in all of the static events and was one of the first teams to get all three inspection stickers, as well as being the only team to pass the braking test on the first run. The dynamic events were next, and the team placed in the middle of the pack in the acceleration and skid pad test, as well as the autocross event. The final dynamic event was the endurance race, which makes up one-third of the total points. Unfortunately, the car's drive chain broke during the race, resulting in an automatic "did not finish". Only seven teams out of forty-three registered finished the event. Had the chain not broken, Formula SIUE would have easily placed in the top ten.

Nevertheless, the team came home proud of their accomplishments. Thanks to their effort, and the generous financial support from the Office of Vice Chancellor for Stu-

dent Affairs, School of Engineering, Mechanical Engineering Department, and the local industries, the team was able to put the University's as well as the School's name on the map. Now that they have established a nice benchmark, SIUE should have high hopes towards next year's competition in May 2009.



Formula SIUE member fabricating the frame



2008 Formula SIUE team

Steel Bridge Team - 2nd Place in Display

The SIUE ASCE Student Chapter's Steel Bridge team competed in the 2008 American Society of Civil Engineers (ASCE) Mid-Continent Regional Conference held April 17-19, 2008 in Fayetteville, Arkansas.

The Steel Bridge competition required the students to design and fabricate a 20-foot-long bridge using only steel members and

connectors. The SIUE entry, which was designed and fabricated by the students, won Fifth Place Overall out of eleven teams. They won Second Place for Display and Third Place for Construction Speed. This year's bridge weighed 152 pounds and was constructed in a timed event in about 15 minutes. Total vertical aggregate deflection under a 2500-pound distributed load was less than two inches. Co-captains Joey Watson, Jake Gonterman and Rob Heer led the design and construction effort this year.

Drs. Brad Cross and Nader Panahshahi, faculty members of the Department of Civil Engineering, provided assistance to the students when necessary.

Financial assistance was provided by the Department of Civil Engineering, the School of Engineering, Vice Chancellor for Student Affairs and contributions by a number of



2008 SIUE Steel Bridge Team



Team members assemble the bridge during competition

individuals and firms.

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We're on the web:

www.siu.edu/engineering/

*Educating tomorrow's engineers,
computer scientists, and
construction managers today.*

The mission of the School of Engineering is to provide excellent innovative engineering, computer science, and construction education to citizens of Illinois, the greater St. Louis metropolitan area, and representatives of the global community. The School focuses on strong undergraduate education and graduate programs that serve the needs of full-time students and employed professionals. The faculty conduct basic and applied research and outreach activities in partnership with others that contribute to technological advancement in our fields.

Paul Simon Award

The Paul Simon Award recognizes faculty members who contribute original research activities and integrate that research into their teaching activities.

Dr. Albert Luo, Professor of Mechanical Engineering, is the recipient of the **2008 Paul Simon Outstanding Scholar Award**. He is recognized for his work in the areas of advanced dynamic systems and nonlinear vibration analysis, and for his exemplary work with students in the classroom and research lab. As demonstrated in his remarkable dossier, not only is Dr. Luo's scholarly productivity unprecedented in the School of Engineering, but his teaching is also exemplary, marked by an enthusiasm that ignites the imagination of undergraduate and graduate

students alike. Dr. Luo has the enviable gift of bringing to light highly complex concepts to the level of undergraduate students in the classroom.



Dr. Albert Luo