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Message from the Dean



It gives me great pleasure to report all the significant accomplishments within the School of Engineering throughout spring and summer 2010. While we were completing the School’s 2009-2010 annual report, we realized we broke a number of records in the School’s history; highest undergraduate enrollment, highest ACT math and composite scores by incoming freshmen, record number of scholarly publications by our faculty and best external funding (page 3).

The momentum generated from all of the synergistic activities during the last few years has been forcing the physical

boundaries of the Engineering Building. The young facility, which was built in 2000, has exceeded its space capacity for students, faculty and staff. The request for an additional 32,000 sq. ft. annex has been well-received by the university administration. The preliminary work was started in spring 2010, and we now have a conceptual design of an extension (page 3).

We cannot praise enough the accomplishments of our students. The Student Chapter of Engineers Without Borders received a Meridian Award for the work they have been doing in Honduras. The Constructor’s Club won the Outstanding Community Service Project of the Year Award for the playground they built for the Village of Summerfield, IL. The Formula Car team organized the first ever “Gateway Rush” event which brought teams from regional universities to the SIUE campus to test their cars before the Society of Automotive Engineers (SAE)

national contest. All of the design teams gained outstanding notoriety for SIUE through their participation and high rankings in collegiate contests (page 2 and 6).

Our outreach programs continued to make regional, national and even international impact. In June, we held our annual “Introduction to Engineering” summer program for area high school students. In July, the School hosted the four-day Global Conference on Educational Robotics. Close to 500 students from 61 junior high and high school teams from Kuwait, Poland, and from across the United States participated in the event.

We are gearing up for another outstanding fall semester. The next **ennovation** issue will highlight alumni news; so, please send your highlights to Kate Betz at kbetz@siue.edu.

Hasan Sevim, Dean

Upcoming Events

- **August 23, 2010:** Fall Classes Begin
- **October 8-9, 2010:** SIUE Homecoming
- **October 8:** Alumni Hall of Fame Banquet (*Meridian Ballroom, Morris University Center*)
- **October 9:** Annual Chili Cook-off , Club Football vs. Ohio State University, Cougar Fest and Men’s Soccer vs. Bradley University (*Korte Stadium*)

Check out the new School of Engineering website at: www.siue.edu/engineering

Fourth Annual School of Engineering Awards Banquet



The School of Engineering honored the best and brightest students, faculty, and alumni at the Fourth Annual Awards Banquet held February 18th, 2010.

Faculty members recognized as "Outstanding Teachers" from each department are pictured from left: Dr. Chris Gordon, Construction; Dr. Sohyung Cho, Industrial & Manufacturing Engineering; Dr. Ryan Krauss, Mechanical Engineering; Dr. Ryan Fries, Civil Engineering; Dr. Andy Lozowski, Electrical & Computer Engineering; and Dr. Dennis Bouvier, Computer Science.

Dean Sevim and Dr. Narayan Bodapati are also pictured. Dr. Bodapati, an Emeritus Faculty member and former Chair of the Department of Construction, was honored for his years of distinguished service to the School and SIUE.



Outstanding Juniors, Seniors and Graduate Students were also honored by each of the departments. They are pictured above.

The evening was well attended by over 250 School of Engineering students, faculty, staff, alumni, and friends. Bruce Holland, President and Chief Executive Officer of Holland Construction Services, Inc., gave the keynote address. Mr. Holland, who has been a great friend to the school for many years, stressed hard work, balance and the importance of education in his speech. Dean Hasan Sevim instituted the Banquet four years ago upon his arrival at the School of Engineering and it has continued to be a great success.



Formula SAE Team Hosts "Gateway Rush" Event



The Formula SAE (Society of Automotive Engineers) racing team hosted "Gateway Rush," on the SIUE campus April 10, 2010.

Gateway Rush 2010 consisted of University teams from the region competing in four separate races including: acceleration, auto-cross, endurance, and

skid pad. The event was a great opportunity for the SIUE team members to see how their car measured up against other universities before the Formula SAE main event, hosted in May at the Michigan International Speedway.

Gateway Rush was organized by the SIUE Formula SAE team members and a group of SIUE students from the Department of Speech Communication as their Senior Capstone Project.



Over 100 spectators enjoyed watching exciting races by the Formula SAE teams from University of Missouri, SIUC, Washington University and of course SIUE.

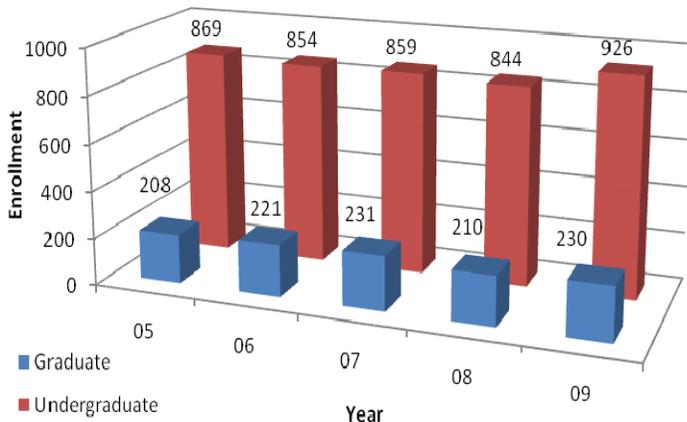
The SIUE car performed well early in the contest, but experienced some mechanical issues throughout the day. The team felt fortunate to examine these problems before taking the car to the national competition held in Michigan.

The event drew significant media coverage including features on radio and television and in newspapers throughout the region. The team promoted the event through WBGZ Radio in Alton, Fox 2 News in the Morning with Tim Ezell, the Alestle, the Edwardsville Intelligencer, and the St. Louis Post Dispatch.

School Achieves Record Accomplishments in 2009-2010 Academic Year

The SIUE School of Engineering had an incredibly successful 2009-2010 Academic year, reaching landmark numbers in the areas of enrollment, incoming student test scores, faculty publications, and external funding.

School of Engineering Enrollment



Applications for enrollment in 2009 have significantly increased, resulting in a student body that is not only larger, but also well-prepared. The average ACT math and composite scores of 2009 School of Engineering freshman reached record high, 27.2 and 26.3, respectively. From fall 2008 to fall 2009, engineering-enrollment numbers in undergraduate and graduate programs have increased by 9.7% and 8.3%, respectively. The chart above shows these numbers.

The School of Engineering network continues to grow, providing our students and alumni with greater professional opportunities.

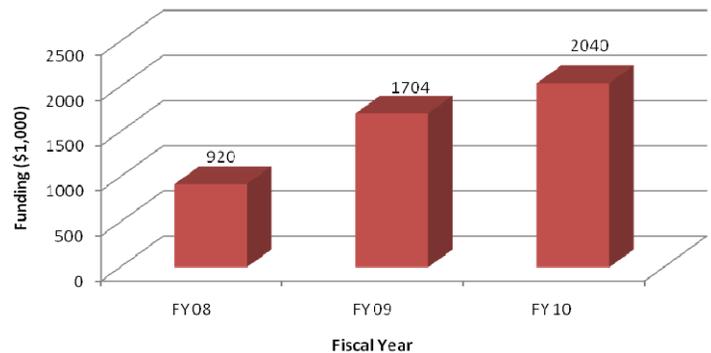
With the addition of eighteen new faculty members in the past four years and increase in student enrollment, the Engineering Building facilities are in need of more space. The plan for the Engineering Building extension is mentioned below.

School of Engineering faculty members have excelled not only in their teaching duties, but also in internal and external scholarly activities.

The chart below shows the significant increase in externally funded projects secured by the School of Engineering faculty in the past three fiscal years. The School has more than doubled its external funding from FY08 to FY10, obtaining \$2.04 million in the first three quarters of FY10 alone. These funds provide support to basic and applied research, student projects, and scholarships.

The number of faculty publications has also soared from 69 in 2007 to 103 in 2009. This is a notable accomplishment which includes 38 peer-reviewed journal articles and nine books and book chapters. Dr. Albert Luo deserves special recognition, as his fourth textbook was published in 2009. Dr. Luo's book is entitled, *Discontinuous Dynamical Systems on Time-varying Domains*, Monograph Series in Nonlinear Physical Science.

School of Engineering External Funding



Please join us in recognizing these fantastic successes by the School, its faculty, staff, and students.

School of Engineering Building Extension



The Engineering Building is a 129,000 square foot state-of-the-art facility which brought all engineering, computer science, and construction programs under one roof when it was completed in 2000.

The Engineering Building houses a three-story atrium, 100 seat auditorium, 12 classrooms, 28 teaching/research laboratories, six research-only laboratories and six computer labs. This ten-year old building has reached capacity with the recent growth in the School of Engineering.

The School is in the process of securing designs and funding for a new 32,000 square foot building extension. The building addition will provide much needed room for offices, classrooms, and laboratory space. The picture to the left is a conceptual drawing of the potential design for the Engineering Building extension. The design is not final, but does represent the anticipated location of the addition.

More Information about the building extension will be available as the University is able to secure funding for the project.

Advisement Office in Full Swing

Springboard to Success is a mandatory advisement/registration program for all incoming freshmen to SIUE. This year, the School of Engineering served as the pilot unit for introducing the COMPASS Math placement testing to the campus. The Engineering Student Services took the lead in testing, advising, and registering all students attending Springboard to Success with an interest in Engineering.



Our advisors met with 285 students and their parents. Regardless of whether or not students were able to declare engineering as their major, they

were treated to an informative overview by the Associate Dean, Dr. Alkin and were later advised by our outstanding professional advisement team.

This initiative was an attempt to facilitate the all-important proper placement in Math courses and provide students a sense of belonging to the School of Engineering. Students were able to receive professional advisement from our staff right away. For those with an interest in Engineering, the sessions allowed for a better understanding of the School's program requirements and the career opportunities available in School.



This was the first time in the history of the School that incoming freshmen were counseled by the Engineering Advisement staff. It turned out to be an amazing experience for all involved.

Summer Outreach Programs



The School of Engineering hosted two 5-day sessions of its Summer Outreach Program in June 2010 to introduce high school freshmen, sophomores, and juniors to the School of Engineering and its programs. The summer camp focused on how engineers impact our lives for the better.

The students lived on campus in an SIUE residence hall for five days and had the opportunity to experience a taste of college life. Throughout the program, students interacted with School of Engineering

faculty, staff, and students. The campers took part in many hands-on activities designed to spark their interest in a future career in engineering, computer science, and construction management.

The campers participated in laboratory experiments, designed and built various projects such as robots, bridges, hovercrafts, and small-scale fuel cell cars. They also developed blue-screen graphic effects similar to those used in movies and experimented with digital audio. The students also were treated to talks from the SIUE Engineers Without Borders Chapter about their recent trip to Pimenta, Honduras and from SIUE alumna, Tyria Riley, an electrical engineer with the Boeing Company. Many of the campers commented that they wished the programs were longer!



Student Design Team Results

American Society of Civil Engineers (ASCE) Student Chapter

Steel Bridge and Concrete Canoe Teams



The ASCE Concrete Canoe and Steel Bridge teams again performed extraordinarily well at the ASCE Mid-

Continent Regional Conference, held at the University of Oklahoma, in Norman, OK. For the second year in a row, both teams earned the right to compete in their respective National Competitions.

The Concrete Canoe team earned first place overall in the regional competition, dominating the race events and several of the technical categories. The Steel Bridge team won the aesthetics category and various others, earning them third place overall.

The ASCE National Concrete Canoe Competition was held at California Polytechnic State University, in San Luis Obispo, CA. The students worked for hundreds of hours designing and fabricating their canoe for the competition. Unfortunately, the canoe did not survive the trip out to California. The team still attended the conference, which was a great learning experience.



The Steel Bridge team participated in the National ASCE- AISC (American Institute of Steel Constructors) Steel Bridge Competition, held at Purdue University, in West LaFayette, IN. The team

placed 37th out of 46 entries, finding the assembly time constraint the most challenging aspect of the competition.

Society of Automotive Engineers (SAE) Student Teams

Cougar Baja and Formula SAE Teams

The Cougar Baja team was very successful at the 2010 SAE International Baja Competition held at Clemson, University in Greenville, SC. The team placed 17th overall out of 106 teams from around the world, and 10th out of teams from the United States. This is only the fourth year the Cougar Baja team has competed.



The team's main focus this year was to improve its performance in the maneuverability event. They placed 11th overall in maneuverability, validating all of their hard work throughout the year.

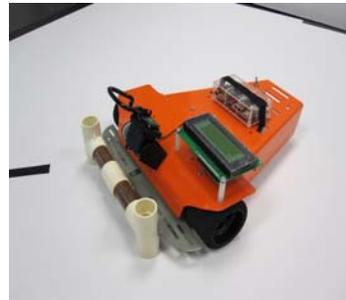
The Formula SAE Racing Team competed in the International SAE Michigan event, held at Michigan International Speedway, in Brooklyn, Michigan. They received 97th place out of 120 teams. The car had mechanical issues, which did not allow for the team to compete in any of the race events. The returning team members look forward to hosting another Gateway Rush event and driving next year's car in the Michigan event.



IEEE (Institute of Electrical & Electronics Engineers) Robotics Team

The IEEE Robotics team, consisting of students from the computer science and electrical and computer engineering departments, earned 7th place overall out of 27 teams at the IEEE Region 5 Robotics Competition hosted by the University of Texas- Arlington, in Grapevine, TX.

The objective of the competition was to fabricate an autonomous robot which would pick up and deliver "fuel rods" to specified locations on a game board. The members of "Team Reckoning" spent nine months preparing, which included designing and building the robot from scratch, building the circuitry boards, and writing all of the code for the robot to be able to perform the designated tasks of the competition.



Mini Grand Autonomous Vehicle Challenge

The SIUE Autonomous Golf Cart team earned third place out of 12 teams at the Mini Grand Challenge held on the campus of Pennsylvania State University- Abington. The interdisciplinary team, comprised of students from electrical & computer engineering, computer science and mechanical engineering, spent hundreds of hours designing and building a vehicle that could not only find its way around the campus of Penn State Abington, but also avoid obstacles and entertain spectators at the same time. Team members believe their collaborative experience was invaluable to their career development.



SIUE Student Chapter of Engineers Without Borders Wins Meridian Award



The SIUE Chapter of Engineers Without Borders (EWB) won a 2010 Meridian Award to help fund a trip to Pimienta, Honduras. The EWB group was presented with a certificate and a \$3,000 grant at a Meridian Society ceremony in April.

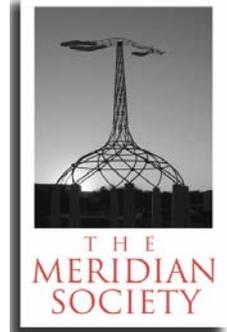
The EWB chapter traveled to Honduras in May to install a storm water

drainage system in cooperation with the Pimienta community and members of the Gateway Professional Chapter of EWB. The purpose of the system is to reduce erosion on a hillside development and greatly improve the quality of life for the residents of Pimienta.

The SIUE EWB Chapter members spent numerous hours designing a gutter and drainage ditch system for the people of Pimienta as their Senior Capstone Project. They also installed the gutters and drainage ditch system on this particular trip.

The faculty advisor for the SIUE EWB Chapter, Dr. Chris Gordon, is extremely proud of the team and grateful to the Meridian Society for their generous grant.

The Meridian Society is a group of women associated with SIUE, who through their pooled membership resources, provide support to community based projects. The Meridian Society has granted over \$110,000 in awards since their inception in 2004.



Constructor's Club Wins Community Service Award

The SIUE Constructor's Club won the 2010 Kimmel Leadership Center "Outstanding Community Service Project of the Year" Award.

The Constructor's Club spent over 300 hours drilling footings, assembling equipment, and pouring concrete to erect a playground for the Village of Summerfield, a small community of 500 residents. The Summerfield Park Committee Treasurer, Melissa Stoltz, called a myriad of private companies for help building the playground after the Village received a grant to update their 60 year old playground equipment. The SIUE Department of Construction was the only one who returned her call.

Ms. Stoltz estimates that the Constructor's Club saved the community an estimated \$7,000 in installation costs with their hard work.



Garden Created in Memory of Construction Student



Students in the Department of Construction spent several weeks creating a garden in memory of their fellow

classmate, senior, Thomas Michael Ordner, who passed away in January 2010. The students, with the help of the Gardens at SIUE Director Doug Conley and his staff, took the initiative to honor Tommy with a permanent memorial tucked into a beautiful area of the Gardens. The students began by designing a concept for the site and worked tirelessly to complete it. The group excavated the grounds, built a stone walkway and memorial bench, and landscaped the site.

Over forty people, including Tommy's family and friends, Doug Conley, Dean Sevim, Construction Department Chair, Dr. Chris Gordon, and the students who made the Memorial Garden a reality, attended a dedication ceremony for the Garden on April 24th.

Our students, faculty, staff, and the Ordner family are truly grateful to Mr. Ralph Korte of The Korte Company, Mr. Bob McClellan and Ms. Mona Haberer of Hortica Insurance, and Mr. Chuck Tosovsky of Home Nursery for their contributions to the site. Their generosity made the Ordner Memorial Garden a possibility.

The School is sad to report another loss this spring. Computer science senior, Dirk Tyson Masonholder, passed away in June. Dirk and Tommy will be truly missed by both their classmates and teachers.

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Botball Robotics Competition



Twenty teams from four states participated in the 2010 Greater St. Louis Regional Botball Tournament hosted by the School of Engineering in April. Botball is an educational robotics

competition that challenges middle and high school students to design, build, and program an autonomous robot to perform various tasks on a standard game board.

Students and mentors attended a two-day professional development workshop in February in which the teams were given their reusable robotics kits to keep. The robotics kits can be used in future classroom applications after the competition.

Botball, which is an innovative program implemented by the KISS Institute for Practical Robotics (KIPR), provides an especially signifi-

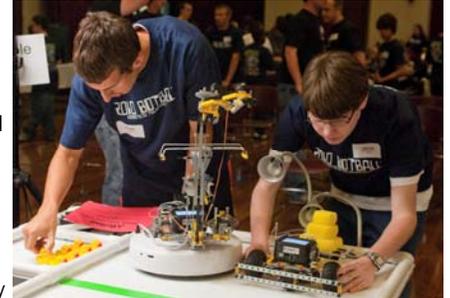
cant educational experience for students. Teams are not only judged on the performance of their robots (science, technology, engineering, and math- STEM) but also on their project documentation and final presentation. Students gain hands-on STEM knowledge and improve their written and verbal communication skills.

Rolla Regional Robotics, which is a group of home-schooled students, won first place overall in the competition.

Edwardsville High School and Wolf Branch Middle School earned second and third places, respectively.

In July, the School hosted the Global Conference on Educational Robotics (GCER), which is a four-day Conference for students,

educators, and robot enthusiasts. The GCER will be highlighted in the 2010 School of Engineering Dean's Report.



Civil Engineering Department Hosts Transportation Institute Outreach Program



Drs. Ryan Fries and Huaguo Zhou hosted 20 junior high school students for a 10-day Transportation Institute Outreach Program. The students learned about structures and bridge design, road safety engineering, road materials, geotechnical engineering, water and air transportation, and emergency traffic response. The students not only participated in corresponding activities, but also went on field trips to SIU Carbondale, a concrete plant, the Alton Lock and Dam, the Downtown Airport, the IDOT Traffic Management Center and a construction operators site. The two-week program concluded with a reception and awards ceremony.

Personnel Changes in the School of Engineering



Dr. Dennis Bouvier was appointed as the Chair of the Department of Computer Science July 1, 2010. Dr. Bouvier is an associate professor who has been with the School since 2006. Dr. Bouvier's research specialties include Visual

Analytics and Computing Education.

Dr. Bouvier is taking over the position of Department Chair from **Dr. Jerry Weinberg**. Dr. Weinberg has been appointed Acting Associate Provost for Research and Dean of the Graduate School. We are very proud to have one of our own as a member of the SIUE administration.



Dr. Weinberg put SIUE on the national map with his work in educational robotics. According to Dr. Weinberg, "While I will miss being down the hall from my colleagues in the School of Engineering, they will see me haunting the Robotics Lab now and then."

Kate Betz, Director of Development, resigned her position at the end of June. Kate's husband is active duty Air Force and was assigned to Altus, Oklahoma Air Force base in July. Kate has been with the School of Engineering for a year and a half and worked with alumni and industry friends to advance the School of Engineering and its programs.

She will be greatly missed. She brought enthusiasm, energy and success to the



position. The good news is that Kate will continue working for the School as a contractor until we can find a replacement for her. Please continue to send your news to Kate at kbetz@siue.edu.

Dr. Oktay Alkin resigned his position as Associate Dean July 15, 2010. Dr. Alkin is a professor and former chair in the Department of Electrical and Computer Engineering. He has been with the School of Engineering since 1986. Dr. Alkin initiated and strengthened a number of academic and outreach programs for the School as Associate Dean since fall 2007. He mentored several junior faculty members and advanced their efforts for professional development.



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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.

Holland Construction Services, Inc. and Oates Associates, Inc. Gifts

The School of Engineering was fortunate to receive generous gifts from two of our greatest industry friends this year, Holland Construction Services, Inc. and Oates Associates, Inc.



Holland Construction Services, Inc.

Holland Construction Services, Inc. and its President & CEO, Mr. Bruce Holland, have been loyal supporters of the Department of Construction and School of Engineering for over a decade. Holland's \$25,000 pledge will fund programs and initiatives in the Department of Construction. The company also supports a \$2,000 annual scholarship for an outstanding student in Construction Management.

Mr. Holland has served the Department of Construction in a myriad of ways throughout the years. Most recently, he delivered the keynote speech at the 4th Annual Awards Banquet. Mr. Holland is a member of the SIUE Foundation Board and is an enthusiastic advocate of community service.

Oates Associates, Inc.

SIUE and the School of Engineering has benefitted from the generosity of Oates Associates, Inc. for over 20 years. Mr. David Oates, Founder of Oates Associates, Inc., established a civil engineering scholarship in 1994 and encouraged his employees to do the same. In 2003, SIUE School of Engineering alumni employed at Oates began their own scholarship, which was matched, dollar for dollar by Oates Associates. The Oates \$25,000 pledge will support these two scholarships.

Mr. Bruce P. Schopp, a 1982 SIUE civil engineering graduate, was recently named President and Chief Operating Officer of Oates Associates. Bruce, who is a member of the School of Engineering's Industrial Advisory Board, has been employed at Oates Associates as a structural engineer.

