SOUTHERN ILLINOIS UNIVERSITY EDWARDSVILLE
SCHOOL OF ENGINEERING

eNNOVATION

Volume 6, Issue 1 January 2012

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Message from the Dean

It is with great pleasure and satisfaction that I inform you about the exciting news of the School and the accomplishments of our faculty, staff, students, and alumni. Indeed, Fall 2011 started with the good news that we broke our undergraduate enrollment record three years in a row and reached 1,004 students, along with 234 graduate students. Thanks to the reputation our faculty, staff, alumni and students have been building, we are receiving increasingly well-prepared Freshmen. The average composite and math ACT scores of the 2011 Freshmen class has reached a record high of 26.4 and 27.9, respectively.

We have signed agreements with area community colleges to ensure that our transfer students receive the best curriculum and advice both at the community college and at SIUE for timely graduation. We signed one such agreement with Kaskaskia Community College in 2009 and most recently with St. Charles Community College. Three more agreements are in the development phases. These colleges will be the source of well–prepared students ready to embark on junior level courses when they come to SIUE.

The School graduated the first student from its cooperative Engineering Science doctoral program with SIU Carbondale in December 2011. Currently, this exemplary cooperative program enrolled fourteen outstanding students, and it is hoped that it will reach the targeted twenty students soon.

Our faculty, staff and students continue to excel in their fields. A number of our faculty members have been recognized nationally and internationally. Several students from our Civil Engineering program received prestigious scholarships. The faculty and graduate students with expertise in transportation engineering within the Civil Engineering department are gaining national recognition through their outstanding scholarship.

Please take a moment to glance through the names of our 173 outstanding Dean's List students on page seven. These are students who achieved a GPA3 of at least 3.5 in Fall 2011.

The Spring 2012 semester has begun at full speed, and we are all excited to witness the ground breaking ceremony of our much needed 32,000 sqare foot extension in early spring. Please join me in rejoicing about all the exciting news that is blossoming in the School of Engineering.

Hasan Sevim, Dean

Upcoming Events

Feb 11: MathCounts

Feb 21: 6th Annual Awards Banquet

Mar 24: Open House

Apr 1: Honors Day

Apr 21: Botball Tournament

May 5: Commencement

School of Engineering Graduates First Ph. D. Student

December's commencement held a historic moment when **Jiguang Zhao**, Ph.D. was hooded by his faculty advisor, Civil Engineering Assistant Professor Huaguo Zhou, and School of Engineering Dean Hasan Sevim. Zhao is the first student to earn the Ph.D. degree in Engineering Science through a cooperative program between Southern Illinois University Edwardsville School of Engineering and the College of Engineering at SIU Carbondale.

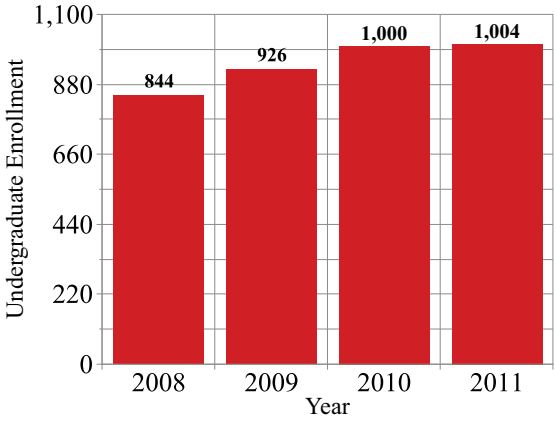
With his research focused on traffic operation and safety Zhao became involved in several external research projects funded by the Illinois Center of Transportation. He has published several journal papers and numerous conference papers based on this research. In June 2009 he received first place in the Missouri Valley Section of the Institute of Transportation Engineers student paper competition.

Zhao joined the Chicago office of CH2M Hill Inc., a consulting company on transportation engineering headquartered in Englewood, Colorado. His career goal is to make our roadways safer by becoming an expert on traffic operation and safety.

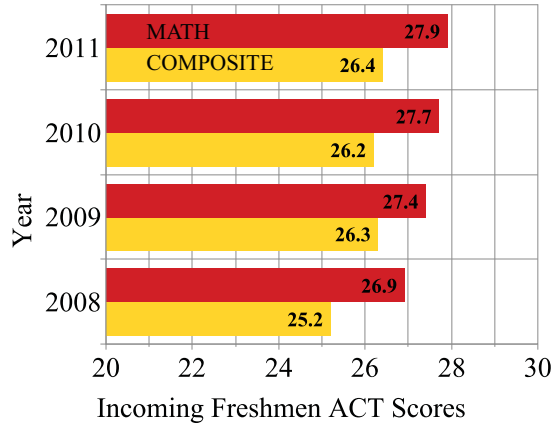
"This is just the beginning," said Hasan Sevim, "Jiguang has written an excellent dissertation. We have many more outstanding candidates in the pipeline. The cooperative doctoral program is an exemplary collaboration between the two campuses."

Undergraduate Enrollment another Record High

In Fall 2009, the School of Engineering's undergraduate enrollment reached 926, a record high in the history of the School. Since then, that record has been broken twice, in Fall 2010 and, most recently, in Fall 2011.



The average math and composite ACT scores of our freshmen class have also been increasing every year, reaching a record high in Fall 2011!



SIUE School of Engineering Signs 2+2 Agreement with St. Charles Community College

In December, SIUE and and St. Charles Community College signed a 2+2 agreement between the School of Engineering and St. Charles Community College. The 2+2 engineering program allows students to obtain bachelor's degrees in Civil Engineering, Computer Engineering, Electrical Engineering, Industrial Engineering, Manufacturing Engineering or Mechanical Engineering by attending St. Charles Community College for the first two years and SIUE for the remaining two years. The purpose of the program is to offer a well-structured curriculum at both institutions so that the students can graduate in a timely fashion. The School has had a similar program with Kaskaskia Community College since Fall 2009. A similar agreement is in the final stages of development with Lewis and Clark Community College.

Personnel Changes in School of Engineering

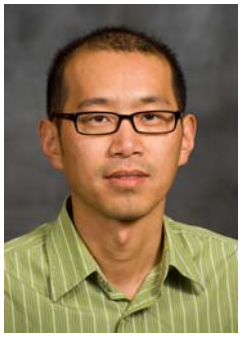
The School of Engineering welcomes Dr. **Chris Gordon** to the Dean's Staff as an additional associate dean. The activities of the School have precipitously increased in the last five years requiring a second associate dean. Chris will be responsible for student development, outreach programs, recruitment and retention, public relations, and physical plant. Chris received his BS and MS in Civil Engineering from Stanford University in 1998 and 1999, respectively, and PhD in Civil Engineering from Carnegie Mellon University in 2006.

Dr. **Bryon Ehlmann** retired this December after serving eleven years in the School's Department of Computer Science. Bryon's expertise has been in the area of database management. He has taught both undergraduate and graduate level courses in database management systems, as well as advanced algorithms and computing for engineers. The culmination of his research is published in his book "Object Relationship Notation (ORN) for Database Applications," which was published in 2009. We wish Bryon and his wife Barbara happy retirements.

Transportation Engineers Making Highways Safer

Traffic accidents place incident responders such as law enforcement, fire and rescue, and tow operators in danger every day. **Huaguo Zhou** and **Ryan Fries**, assistant professors of Civil Engineering, have developed a Highway Incident Management Operational and Training Guide designed to improve responder safety by creating a training that details the roles of all agencies.

Dr. Ryan Fries



Dr. Huaguo Zhou

After fourteen training sessions scheduled by the Illinois Department of Transportation (IDOT), the Transportation Research Board (TRB) published the innovative final report from this research in its weekly newsletter in September 2011.

According to Acting Illinois Transportation Secretary Ann Schneider, "The highway incident management training program has greatly improved operations in response to traffic incidents. The goal of this program is to reduce a variety of incidents that may cause congestion and lead to roadway fatalities. The fundamental point of this training is to ensure responders understand all safe practices, along with the equipment and resources currently available to more effectively react to incidents statewide."

After receiving positive feedback from pilot tests conducted in Chicago and St. Louis, the researchers released the manual to IDOT. A copy was also sent to the National Fire and Police Academy to be considered for national accreditation in September.

Revolutionizing the Power Industry

Dr. Andy Lozowski

The beginning of the Fall 2011 semester brought a key donation to researchers at Southern Illinois University's School of Engineering who are developing technology that will revolutionize the current power industry. The Bitrode Corporation in Green Park, Missouri, contributed thirty-five control system modules valued at $10,000, to help with the research project.

Homes with solar roofs have the potential to generate more energy than the household can use. In the future, these homeowners will have the option to sell the excess power to the power company. However, the technology for feeding the "big grid" from homes is not ready.

Dr. **Andy Lozowski**, associate professor in the Department of Electrical and Computer Engineering, has watched the interest in solar power grow and has been leading research to design efficient micro-grids to help the home owners willing to sell their extra power. "With these specially developed boards donated by Bitrode, the School of Engineering researchers will be able to progress toward the first deployment of an experimental micro-grid," he said.

ERTC Featured: Going Green

In December 2011, local news channel KMOV featured the Environmental Resources Training Center on its Go Green segment, calling it one of the most unique training centers in the country. Besides classrooms and laboratories, it houses a 30,000 gallon training-scale water treatment plant to provide hands-on training for the students. News 4's Kristen Cornett called water treatment the greenest of all industries, because all water in use is recycled, and no new water is being added, and when interviewed, Director Paul Shetley highlighted the economic impacts as well, citing workers laid off from local plants who trained with ERTC for just one year and were ready for the job market again.

SIUE Engineering: International Impact

Electrical Engineering Professor Recurring Lecturer in South Korea

In October 2011, **Luis Youn**, professor and chair of the Electrical and Computer Engineering Department in the Southern Illinois University Edwardsville's School of Engineering conducted a lecture series on the energy deregulation process at Hanyang University in South Korea.

According to Youn, while deregulation began in Chile about fifty years ago, many countries, including Korea, are only in the early stages of the process of breaking the control of energy generation, transmission and distribution from one entity. Having studied the history of the deregulation process for 15 years, Youn is well prepared to address the successes and failures of the various governments that have already deregulated their energy industry.

Youn's first lecture series at Hanyang University was held in March 2011, while his second was held last October. He has been invited to conduct a third series in March 2012. Youn explained, "They want graduate students to be exposed to the international arena. Eventually they think these students will lead the country."

Dr. Luis Youn

Luo's Monograph Translated and Published in Russian and Chinese

"Discontinuous Dynamical Systems on Time-varying Domains" is one of eight monographs written by **Albert Luo**, a professor of Mechanical Engineering in the School of Engineering. The monograph, originally published in 2009, was translated and subsequently published in both Russian and Chinese in 2011.

According to Luo, Discontinuous Dynamical Systems on Time-varying Domains is "about the interaction between two dynamical systems such as two gears in an engine. They have to work in perfect harmony like a happily married couple. The concepts covered in this monograph ensure that the components of such complex systems understand each other and adjust their behavior accordingly. This theory helps us understand not only mechanical systems but social as well as economic and financial problems."

Dr. Albert Luo

Luo's book is the first to focus on this topic to change traditional approach through calculus. "The discontinuity causes our world to be diverse, complicated and chaotic" he says. He adds, "We are trying to bring a simple explanation to all that."

Award-Winning Faculty

Dr. Andreas Stefik

Andreas Stefik, assistant professor in the Department of Computer Science, received the 2011 Java Innovation Award at the October JavaOne Conference held in San Francisco, California. The award, also known as the Duke's Choice Award, recognizes extreme innovation in the world of Java technology and is granted to the most innovative projects using the Java platform.

Stefik and his team of researchers were recognized for working to make the NetBeans development environment accessible to the blind and visually impaired. NetBeans is a specialized computer program that facilitates software development. Computer programming is more challenging for the blind and visually impaired due to its visual orientation. With support from the National Science Foundation's Broadening Participation in Computing program, Stefik's research team aims to empower blind and visually impaired individuals to overcome the barriers of programming and ultimately obtain careers in the computing profession.

2011 Duke's Choice Award Winners

Dr. Ryan Fries

Ryan Fries, assistant professor of Civil Engineering, was named the recipient of the 2011 Central District Excellence in Teaching Award from Chi Epsilon, the National Civil Engineering Honor Society. He is the second SIUE Civil Engineering professor to receive the honor since the induction of the chapter 1997. The first was Mark Rossow, professor emeritus.

Fries was nominated by the SIUE Chi Epsilon student chapter members in December 2010. He was selected as the standout professor to receive the high honor among many candidates from the fourteen chapters that comprise the Central District.

Fries has also been honored previously with the prestigious national 2011 ExCEEd New Faculty Excellence in Teaching Award from the American Society of Civil Engineering.

Brent Vaughn, Civil Engineering laboratory specialist and lecturer, was presented with the Outstanding Faculty/Practitioner Advisor Award in August at the American Society of Civil Engineers (ASCE) Region 7 Annual Meeting in Jackson, Wyoming. The event marked the first time the award was given. It honors civil engineering professionals deserving of recognition for service to student chapters and to ASCE.

Brent Vaughn

Vaughn serves many roles within the ASCE. He is the SIUE ASCE Student Chapter faculty advisor, the ACSE newspaper editor for the St. Louis section, and a member of the Environmental and Water Resources Committee and the History and Heritage Committee for the St. Louis section.

ASCE
American Society of Civil Engineers

Alumna Wins Gold

SIUE Civil Engineering alumna, **Alicia DeShasier**, won a gold medal for Team USA in the javelin competition at the 2011 Pan American Games held in Guadalajara, Mexico. DeShasier, a 2007 graduate, had never competed in track and field until her Senior year at SIUE. Despite the late start, she was an immediate success. In her first competition, she broke SIUE's javelin record and went on to finish 10th at the 2007 NCAA Division II Outdoor Championship.

Photos courtesy of Daylife and the AP respectively.

After graduation, DeShasier competed nationally while working at Oates Associates in Collinsville as a civil engineer. In 2010 she took a job with Strand Associates in Madison, Wisconsin where she helps design roadways and is a volunteer assistant coach for the University of Wisconsin-Madison track and field team.

DeShasier's goal is to achieve a place on the 2012 U.S. team for the Olympic Games in London, and with that in mind, the next stop on her amazing journey is the June 2012 Olympic Trials to be held in Eugene, Oregon.

Civil Engineering Students Putting SIUE on the Map

Jing Huang, a Civil Engineering graduate student, has been named the recipient of the 2011 Illinois Section of the Institute of Transportation Engineers (ILITE) Student Paper Competition Award. Huang's paper was selected by the ILITE based on originality, significance, validity and applicability of the research outcomes among students from all the universities in Illinois that have transportation programs at a graduate level.

Civil Engineering student **Michael Williamson** has been selected by the Illinois section of the Institute of Transportation Engineers (ILITE) as the recipient of its annual graduate scholarship. Each year the ILITE selects only one student for the award from universities across Illinois. The winner is selected based on educational background, transportation course work, employment history, campus activities, community activities, leadership, and professional references. Williamson is the second SIUE Civil Engineering student to receive this award after Jiguang Zhao won the award in 2009.

The District 8 Branch of the American Public Works Association (APWA) recently announced that $3,500 will be awarded to five Southern Illinois University Edwardsville Civil Engineering students. The objective of the scholarship is to encourage students interested in the field of public works,. The following Civil Engineering students are the recipients: **Jacob Allen, Kendra Deerhake** (not pictured), **Tyler Hazelwonder** (not pictured)**, Brittnee Radcliffe,** and **Evan Wilson**.

Melissa Strzelczyk was one of the recipients of the ASCE St. Louis Section scholarship. Former ASCE President Niel Palmer presented the award to Melissa at the 2011 ASCE St. Louis Section annual dinner in September. Scholarships funded through donations, dues and sponsors are awarded to students from universities in the St. Louis Section. Previously, Melissa was awarded a 2011-2012 scholarship by the American Council of Engineering Companies of Illinois and also was named the Civil Engineering Department's Outstanding Junior at the 2011 School of Engineering Awards Banquet.

Fall 2011 Dean's List

Abendroth, Phillip K.
Ahrens, Daniel E.
Albers, Lacey E.
Alvis, Brandon K.
Anderson, Nathaniel E.
Avci, Cansu
Badger, Charles N.
Baris, Muge Tugce
Beebe, Austin M.
Beelman, Brett W.
Bettis, Jackson E.
Blumhorst, Nicole V.
Boddy, Christina M.
Boeser, Jared A.
Borre, David
Borwey, Jeffrey K.
Branch, Christopher J.
Brinkley, Ryan M.
Brown, Terrence D.
Brune, Ryan
Castel, Seth J.
Catron, Ivan R.
Combes, Matt T.
Cook, Benjamin R.
Corkern, Joanna
Croft, Emily C.
Danaher, Keith E.
Davis, Cody M.
Demir, Burcu
Demirci, Burcu
Denning, Jonathan D.
Dragovich, Matthew J.
Dudas, Michael J.
Dust, Maria R.
Enderer, Furkan
Entwistle, Dennis A.
Farniok, Jared D.
Fehrenbacher, Joseph R.
Fehrenbacher, Mark R.
Fischer, Dana M.
Flood, Kenneth R.
Fox, Nathaniel E.
Fraley, Judson L.
Franken, Martin J.
Friederich, Timothy S.
Fuller, Brandon M.
Gagen, Joshua P.
Galle, Kevin P.
Garrison, Kassidy C.
Geppert, Tiffany F.
Glaspell, Meghan S.
Glass, Brian J.
Goedelman, Gregory R.
Graminski, Bryon M.
Graves, Clayton M.
Hager, Jeffrey N.
Hale, Colin K.
Hamilton, Travis G.
Hanley, Benjamin E.
Hann, Ryan Z.
Harmon, Kyle R.
Harris, Jeremy M.
Hartnagel, Trevor A.
Hatch, Timothy L.
Haverfield, Aaron S.
Hayden, Loree A.
Heiden, Justin R.
Hoekstra, Ryan M.
Hoerchler, Derek R.
Hoerchler, Steve A.
Hogan, Lee M.
Hogan, Lynn M.
Holdener, Ryan K.
Hooks, Jason D.
Howe, Thomas C.
Hunt, Luke A.
Jerrels, Travis J.
Johnson, Christopher M.
Karaianis, Benjamin T.
Kaya, Leyla M.
Kenney, Nick M.
Kinney, William J.
Kirkton, Kimberly E.
Kluthe, Timothy J.
Knebel, Adam D.
Knight, Forrest A.
Koehn, Joshua D.
Koltveit, Cory D.
Kreke, Matthew D.
Kucer, Nil Irmak
Langendorf, Andrew P.
Larsen, Kenneth R.
Lawson, Matthew R.
Lawson, Nathaniel E.
Lemaster, Shawn J.
Lievens, Matthew J.
Linn, Stephen M.
Littmann, Elizabeth H.
Lorts, Kerry C.
Luitjohan, Justin P.
Lynn, David W.
Margaritis, Brandon R.
Marsland, Clayton D.
Maschhoff, Devin S.
McEldowney, Randolph
Mcleod, Brian
Meuth, Curtis A.
Mewes, Jason L.
Middendorf, Nolan D.
Miller, Erica L.
Minks, David G.
Moore, Craig M.
Moore, Dennis W.
Munter, Keith D.
Murphy, Clinton E.
Okumus, Cengiz E.
Ozen, Kadir Ruhican
Ozturk, Eray
Packman, Thomas J.
Park, Robert C.
Parker, Richard L.
Patton, Alyssa D.
Peabody, William R.
Phillips, Joseph O.
Plattner, Justin T.
Potthast, Luke A.
Puri, Mukta
Ratermann, Brandon M.
Raube, Zachary T.
Reveldez, Gaudencio P.
Rich, Garrett M.
Ripley, Bradley W.
Rivera, German A.
Rizov, Galin V.
Rohner, Nathan A.
Rosa, Michael T.
Roustio, Tim L.
Russell, Brandon S.
Sahin, Meral
Schaefer, Chad T.
Schmittling, Kaitlin A.
Schneider, Jared A.
Schnettgoecke, Cody J.
Schukar, Quentin N.
Scribner, Jacob C.
Serena, Domenic
Shelton, Lindsey L.
Sleeper, Ryan C.
Smith, Patrick M.
Smith, Zachary P.
Sodam, Katelyn M.
Sottosanto, Frank J.
Sprehe, Daniel R.
Steele, Ryan R.
Steinman, Allison B.
Stewart, Keith M.
Stilt, James E.
Stoltz, Trevor J.
Strackeljahn, Daniel
Sullivan, Aaron M.
Teague, Thomas D.
Thompson, Jessica C.
Timmermann, Ashley N.
Verdun, Joshua L.
Watson, Aaron C.
Weber, Chico N.
Wendler, John D.
Williams, Caroline A.
Wilson, Jeffrey A.
Wiseman, Oran H.
Wismer, Mikel R.
Woelfel, Keith W.
Zuber, Joshua J.

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Southern Illinois University Edwardsville
School of Engineering
Campus Box 1804
Edwardsville, IL 62026

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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.

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STEM Effort at the Preschool Level

Preschool-aged children from Southern Illinois University Edwardsville's Early Childhood Center and their teachers recently set out on a field trip to see the SIUE science building construction site. The preschoolers were delighted to watch as a wall panel was loaded on a crane and lifted into place. After watching the placement of the wall panel, Mark Grinter, assistant professor in the Department of Construction, led the children in an activity to measure distance by pacing. The trip concluded with a hands-on exercise using surveying equipment with the help of Dan Baker, Civil Engineering student, Ryan Fries, assistant professor of Civil Engineering, and Susan Morgan, chair and professor of Civil Engineering.