

Engineering MOMENTUM

Dean's Report 2008

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Our Vision

The vision of the School of Engineering is to be a partnership of faculty, students, staff, alumni and other professionals who work together to provide the highest quality education and maintain innovative resources that support the technical growth and economic development of the region



On the Cover

Engineering student Duygu Sagiroglu is from Istanbul, Turkey. She spent her sophomore year studying at SIUE as part of the dual diploma program. Learn more on page 10.

Message from the Dean

Just over two years ago, the SIUE School of Engineering set out to become the center of engineering education in the region. We envisioned forming an “engineering community” comprised of students, alumni, faculty, staff, advisory board members, area high schools, community colleges and various engineering, construction and information technology companies. The 2008 SIUE School of Engineering Dean’s Report is a small collection of memorable accounts representing the true momentum gained on our road to shaping the “engineering community.”

The 2008 school year has been an exciting time for academic growth within our School. Each semester marked a significant educational milestone; the collaborative doctoral program with our sister campus in Carbondale in the spring and the inception of our Master of Science degree program in Industrial Engineering in the fall. These programs are designed to provide an opportunity to both residential students and industry professionals looking to advance their careers.

Under the mentorship of faculty and staff, our students have consistently demonstrated their ability to impress the engineering community with their student design projects. High school and community college students often credit

these projects with their attraction to the School. The School also gives high school students the opportunity to experience a week of hands-on enrichment activities with our Summer Outreach Program.

We are working hard to meet the needs of an ever-changing engineering world and have added an international dimension to our program. Our dual diploma degree program in industrial engineering with Istanbul Technical University (ITU) is in full swing, and several student groups have been active in educational international travel.

Our “engineering community” has gained great momentum since its inception in 2006. We will continue to work diligently to strengthen this establishment in 2009. Please join us in this very exciting time as we make our initiatives successful.

Sincerely,

Hasan Sevim, Ph.D.
Dean



SIUE is a nationally recognized university that educates and develops professional and community leaders through its excellent faculty and broad choice of degrees and programs ranging from liberal arts to professional studies. Undergraduate and graduate degrees are offered in the arts and sciences, business, education, engineering and nursing. Professional degrees are available in dental medicine and pharmacy. More than 13,600 students choose SIUE for the enlightening programs, engaging faculty and convenient location just 25 minutes from St. Louis.

Message from the Chancellor

SIUE is recognized nationally for the excellence of our programs and development of professional and community leaders.

For the fourth consecutive year, *U.S. News & World Report* "America's Best Colleges" commends SIUE for our Senior Assignment Program, an integrative learning experience required of all seniors prior to graduation. *U.S. News* also lists SIUE among the top 10 public universities in the Midwest-Master's category for the second consecutive year and in the top one-third of all public and private Midwestern universities.

While SIUE emerges as a national leader in higher education, the School of Engineering continues to prepare students to meet today's challenges with creativity and innovation. The University's values of Citizenship, Excellence, Integrity, Openness and Wisdom are evident in the students' commitment to enhancing their education through collegiate competitions, faculty support of international travel-study programs and the School's partnerships with industry leaders.

Enjoy this glimpse into one of the many outstanding programs at SIUE. I encourage you to visit campus and witness excellence in education as we develop and advance tomorrow's leaders.

Vaughn Vandegrift, Ph.D.
SIUE Chancellor

About the SCHOOL

Engineering degrees

The SIUE School of Engineering offers a comprehensive collection of professionally accredited engineering programs:

- Civil Engineering – BS, MS
- Computer Engineering – BS, Minor
- Computer Science – BA, BS, MS, Minor
- Construction Management – BS, Minor
- Electrical Engineering – BS, MS, Minor
- Industrial Engineering – BS, Minor
- Manufacturing Engineering – BS, Minor
- Mechanical Engineering – BS, MS, Minor
- Engineering Science Ph.D. Program
(Collaborative with SIUC)



Keeping a Pulse on the Industry

The School of Engineering Industrial and Professional Advisory Councils and the Industrial Advisory Board support the School in several ways. They help the School meet the constantly changing landscape of engineering education, provide student internship opportunities, help assess strengths and weaknesses of current curriculum, bring contemporary issues and directions to the attention of the administration and faculty, help students develop employment contacts, and add credibility to the engineering programs.

School of Engineering Industrial Advisory Board

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James Weiss, Ameren UE

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Robert E. McClellan, Hortica
Dr. Michael S. McCoy, The Boeing Co.
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Timothy L. Stamate, Pearl Technology
Ming Zhang, Hussmann Corp.

Center of ENGINEERING EDUCATION



Shaping Perceptions of the Profession

There is more to the average engineer than an aptitude for math and science. Few occupations have such a direct and positive effect on people's everyday lives.

This positive image of engineering is not reaching the mainstream population. An 18-month study sponsored by the National Academy of Engineering, found that the majority of middle and high school students don't fully understand the nature of what engineers do or the opportunities available through an engineering education. In addition, many students don't think they are smart enough to become an engineer.

The School of Engineering is doing its part to change those perceptions. The School has offered summer outreach programs to area high school students for several years and recently made changes to their programming based on the above findings. "Engineers have opportunities to make a positive impact on the quality of our lives and the environment in which we live," said Associate Dean Oktay Alkin. "We are making sure the outreach programs we offer reflect this message."

In order to appeal to the higher aspiration of young people, the enhanced summer programs incorporated more green activities. Students had the opportunity to design and build a rain garden and build a small-scale replica of a fuel cell car. They also experimented with solar energy, constructed a working bridge made of PVC pipes and built robots.

Student response and feedback were extremely positive. "I learned a lot about how many different kinds of engineering there are," commented a female high school student from St. Louis. "Now I just have to decide which one I want to do!"

In order to build an ongoing relationship, Alkin invited summer outreach students back to campus last fall to reconnect with fellow participants and learn more about what SIUE has to offer. "We need to keep in touch with these students and help them feel a part of the engineering community at SIUE," he said. "Ultimately, we want them here as students."

"Engineers have opportunities to make a positive impact on the quality of our lives and the environment in which we live. We are making sure the outreach programs we offer reflect this message."

Associate Dean Oktay Alkin

Bringing Engineering to Life

The School of Engineering offers high-tech, high-energy outreach activities to middle and high school students. These activities offer teens an education in leadership, teamwork and organization and most importantly, get them excited about career opportunities in engineering and science.

That's how it worked for Aaron Parker. Aaron was very familiar with SIUE before enrolling in the School of Engineering in fall 2008. He competed in Botball tournaments at SIUE while attending Edwardsville High School, located just down the road from the University. He spent part of each summer working as a high school technician at the School of Engineering summer programs, helping middle school students build robots. When it came time for college, he knew he wanted to pursue a career in robotics and didn't even consider any other schools. "SIUE has been a big part of my life," he said.

Now he's paying it back. The freshman computer science major builds demo robots and visits middle schools on behalf of SIUE to talk about robotics and the importance of robots in our lives. "I hope I can encourage other kids to get interested in robots like I did," he said.

As a past "Botballer," he is enhancing future competitions as one of 13 worldwide members of the Youth Advisory Council for Botball. And he was there when the School of Engineering hosted The 2009 Greater St. Louis Botball Regional Tournament. Botball incorporates principles of mathematics, science, engineering, project management and technology.

"Botball encourages out-of-the-box thinking," Aaron said. "Programming a robot can be complicated. It makes me smile to see it actually work."

The Botball competition begins with a two-day workshop where participants learn about design and programming strategies and receive their robotics kit and game rules. Student teams have approximately two months to design, build and program a mobile, autonomous robot. Teams compete against each other on a game board in non-destructive two-minute matches.

The School of Engineering uses Botball to reach out to middle and high school students, helping to prepare and motivate individuals to become interested in engineering, science and technology as a career path.



Collegiate COMPETITION



A Rock Solid Experience

“I really like concrete, asphalt and construction,” said Laura Niemeyer, a junior civil engineering major and concrete canoe team leader at SIUE. “I helped build my first house in high school and I’ve loved it ever since.”

Comments like this are common in the School of Engineering, particularly from members of the concrete canoe team. The American Society of Civil Engineers National Concrete Canoe Competition challenges civil engineering students from across the country on their knowledge, creativity and stamina, while showcasing the versatility and durability of concrete as a building material. The concrete canoe race is one of several student competitions supported by the School.

The concrete canoe team spent several months developing a concrete mix that was light enough to float while holding the weight of several students. Senior civil engineering student Ryan Zwijack said his team used what they learned in class about the properties of concrete when they selected hollow glass spheres and ceramic spheres as the base for their mix.

Once the concrete mix was ready, the team carefully fabricated their canoe by layering the concrete with lightweight carbon fiber and fiber glass mesh reinforcements. Concrete gets most of its strength from high humidity levels, so the canoe cured in a tank of water for several days. The canoe is not the only thing that needs to be as strong as possible. Team members build a practice canoe which they use to build their stamina in preparation for the sprint and endurance races.

Zwijack is interested in a career as a project manager in environmental waste water treatment. “Working as a concrete canoe team leader is helping me develop important communication and project management skills, as well as practical experience,” Ryan said. “This team activity gives me the chance to better understand how processes work. I will take these experiences with me as I move through my career.”

Competitions give students the opportunity to apply their classroom learning in a team environment while gaining valuable communication and leadership skills.

Student Competition Results

American Society of Civil Engineers Concrete Canoe Competition

2nd place: Overall

1st place: Final Product, Men's Final Sprints, Women's Slalom/Endurance Race,
Men's Slalom/Endurance Race

2nd place: Design Paper, Coed Final Sprints

3rd place: Oral Presentation

5th place: Women's Final Sprints

Society of Automotive Engineers Mini Baja Competition

1st place: Sled Pull

6th place: 4-hour Endurance Race

15th place: Overall

American Society of Civil Engineers Steel Bridge Competition

2nd place: Aesthetics

American Concrete Institute (ACI) Missouri Golden Cylinder Competition

1st place

ACI Fiber-Reinforced Concrete Bowling Ball Competition

3rd place

ACI Fiber Reinforced Polymer Competition

1st place: Highest Ultimate Load-to-Weight Ratio

ACI Fiber Reinforced Polymer Beam Contest

1st place

CAD/CAM/CAE Student Competition, Product Lifecycle Management World Conference

1st place: Overall

Society of Automotive Engineers Formula Racing Competition

Team of first-year members placed 25th out of 43 teams in their first year of competition

Association for Computing Machinery International Collegiate Programming Contest

4th place: Mid-Central Regional

Mini Grand Challenge Autonomous Vehicle Competition

Special Recognition for Best Crowd Interaction

IEEE Symposium on Visual Analytics Science and Technology

Innovative Trace Visualization Award

23rd Association for the Advancement of Artificial Intelligence Conference Robot Exhibition

Technical Award for System Integration



New Graduate PROGRAMS

The Research Environment

The SIUE School of Engineering has well-equipped laboratories and computer facilities located in an award-winning 129,000 square-foot building. This modern facility houses 34 engineering laboratories, including facilities for:

- Materials testing
- Earthquake simulation
- Vibration analysis
- Aerodynamic testing
- Very large scale integration
- Information technology development
- Soil mechanics
- Fluid mechanics
- Robotics
- Environmental testing
- Signal and image processing
- Nondestructive testing and analysis
- Control and automation
- Visualization and virtual reality



Digging Deeper

The new Master of Science in industrial engineering program expands the School of Engineering's reach to professionals in the engineering and manufacturing community who want to advance in their careers.

Daniel Crain knows that the right training can make all the difference when it comes to seizing opportunities. Which is why he decided to earn his master's in industrial engineering at SIUE.

Crain earned a bachelor's in industrial engineering at SIUE. He said his experience as an undergraduate prepared him well for the challenges he has faced as a working professional and a graduate student.

"Choosing SIUE was the easy part," he said. "My undergraduate experience was exceptional—the faculty is excellent and the University is very affordable. A master's degree in industrial engineering will help me gain new skills, enhance my job performance and advance my career."

The industrial engineering master's program provides students with valuable and relevant knowledge that is immediately applicable in the real world. Crain works in Greenville as a process engineer for Covidien, a leading provider of medical devices, supplies and pharmaceuticals. He said the program not only makes him more individually competitive, but it enhances his ability to work as part of a team.

"The flexibility of the program allows me to work on academic projects in correlation with my professional projects," he said. "The faculty and students in the industrial and manufacturing engineering department foster a great deal of collaboration and team building, providing the basis for success as a working engineer."

"I know that the education I receive through the SIUE School of Engineering will more than adequately prepare me for the future." He is so sure of this that he has already recommended the master's in industrial engineering program to several of his colleagues.

The Road to Research

The community of engineers at SIUE has expanded to include the engineering faculty at SIU Carbondale (SIUC). A cooperative agreement between the two SIU system schools gives students access to a combined engineering faculty of 100 while they earn a doctorate in engineering science from SIUC and attend all courses on the Edwardsville campus.

Raymond Walter is one of seven students who began the doctoral program in fall 2008. Earning a Ph.D. is something he has always wanted to do. An employee of The Boeing Company for more than 20 years and currently a targeting and weapons systems engineer, a doctorate will offer Raymond several options in the future. “This level of education can open the door for a research or mentoring role at Boeing or possibly a second career such as teaching or consulting when I retire,” he said.

A two-time SIUE graduate, Raymond earned a BS in 1986 and a master’s in 1993, both in electrical engineering. He admits he’s always had a soft spot for the SIUE School of Engineering and was very pleased to learn that his alma mater offers a Ph.D. program. “I like the idea of being part of a growing program,” he said.

Pelin Guvenc came to SIUE from Ankara, Turkey, where she earned a BS in 2005 and a master’s in 2008, both in computer engineering. While completing her master’s, she spent nearly a year looking for just the right place to earn her doctorate in engineering. Knowing she wanted to study in the U.S., a professor suggested she contact the SIUE School of Engineering.

When Pelin contacted the School, the responsiveness of the faculty and staff impressed her, and she was particularly interested in the School’s computer vision and image processing lab. “That’s when I was certain I wanted to come to SIUE,” Pelin said. “The doctoral program requires a high-level of detailed research and is challenging me to develop new ideas.”

“Highly capable doctoral students with advanced knowledge and ability—like Raymond and Pelin—are developing dynamic research partnerships with our faculty,” said Associate Dean Oktay Alkin. “Together, they are creating knowledge and enhancing the quality and caliber of our research programs in the School of Engineering.”

**“This level of education will open the door
for a research or mentoring role.”**

Raymond Walter, The Boeing Company





Creating a Competitive Edge

Through a new dual diploma program, the SIUE School of Engineering and Istanbul Technical University (ITU) are providing Turkish students the opportunity to earn two diplomas while gaining international exposure. The industrial engineering dual diploma program at SIUE is the first of its kind in both the U.S. and Turkey.

Through the four-year program, students spend their freshman and junior years at ITU and their sophomore and senior years at SIUE. Upon successful completion, the Turkish students earn a bachelor's in industrial engineering from a highly-regarded U.S. university, a tremendous advantage in the Turkish job market. At the same time, they earn a second degree from ITU, one of the top universities in Turkey.

The collaboration between the two institutions improves the global name recognition of SIUE and opens the door to international teaching and research activities for the School of Engineering. The School is also benefitting from the boost in industrial engineering enrollment.

"We are enriching the global diversity of students at SIUE and building enrollment with high-quality international students who may choose to remain at the University and enroll in our new industrial engineering master's program," said Cem Karacal, professor and director of industrial and manufacturing engineering.

According to Karacal, earning two diplomas can significantly enhance a student's job prospects. "In today's global economy, students who have international exposure have a significant advantage in terms of their educational and life experiences," he said.

"In such a competitive world, it is important to know what is going on around the globe," said Duygu Sagioglu, a sophomore in the dual diploma program. "Companies are not satisfied with 'good' anymore; they want the best. This experience is providing me with a broad perspective of the world and a much-needed competitive edge."

"Companies are not satisfied with 'good' anymore; they want the best. This experience is providing me with a broad perspective of the world and a much-needed competitive edge."

Duygu Sagioglu



The Impact of Culture and Customs

Today's globalization and international development is unprecedented in its magnitude and reach. The School of Engineering recognizes the importance of these trends and the need to incorporate them into the learning environment.

An assistant professor in the School of Engineering Department of Construction, Chris Gordon wants his students to be aware of how these trends are affecting the construction industry and be prepared for a globalized future.

He understands the challenges of entering and operating in a foreign market. Before coming to SIUE, he worked on a commercial development on the site of the Berlin Wall and was part of a wind turbine design and installation team in Malawi, a country in southeastern Africa. "It was an inspiration to see construction performed differently in other countries. I want my students to have that same experience," he said. "We saw an opportunity to expand the reach of our student body with exposure to topics in international construction."

What better way to teach students about international construction issues than to travel to another country. Gordon and School of Engineering Instructor Carla Lòpez del Puerto, along with seven construction management students, recently traveled to Mexico and immersed themselves in the Mexican culture as part of an international construction travel-study course.

While in Mexico, students learned first-hand about the differences and similarities between U.S. and Mexican safety and quality standards, construction methods and supply chains, as well as how a country's culture and customs can impact business.

The group visited several world-class construction projects in Mexico City, a \$350 million cement plant in Puebla, and several colonial and pre-colonial sites. They found that some building materials have cultural roots. For example, a construction method using adobe bricks made of sun-baked clay and straw was used to build the ancient pyramids and is still used in contemporary construction.

Classroom Without Borders

Reflective of the School of Engineering's expanding international reach, four mechanical engineering students had the opportunity to explore China and gain an understanding of Chinese culture and history while completing their required senior design classes. Joined by Keqin Gu, professor and chair of the Department of Mechanical and Industrial Engineering, students spent two months in China, working closely with faculty and students at the Henan University of Science and Technology. "It is increasingly common for engineers to work closely with colleagues of different cultures," said Gu. "Therefore, it is imperative that we offer these international opportunities to our students."



Going Green

Green roofs have been growing in popularity in the U.S. because of their many environmental advantages. SIUE engineers and scientists are evaluating the environmental benefits of green roof technology and the performance of various green roof materials and techniques.

The research, which is part of the University's Green Roof Environmental Evaluation Network (GREEN), is taking place on top of the School of Engineering Building, as well as at a ground-level field site. Research conducted by SIUE students and faculty has the potential to influence green technology and future environmental trends.

GREEN is a collaborative initiative lead by the School of Engineering and the Department of Environmental Sciences. The effort involves local St. Louis companies Green Roof Blocks and Jost Greenhouses and other environmental industry leaders and universities.

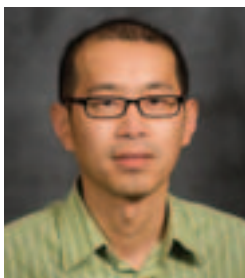
Susan Morgan, professor of civil engineering and chair of that department, works closely with students to study the quantity and quality of the storm water runoff. "While there is the potential for green roofs to add pollutants from the growth media and fertilizer, our data so far shows little contamination," she said. "There is, however, a significant reduction in the amount of runoff from green roofs compared to traditional roofs."

Serdar Celik, SIUE assistant professor of mechanical engineering, studies the thermal benefits of having a green roof. "The green roof acts as insulation," he said. "By having a green roof, the plants promote less building heat gain in summer and less building heat loss in winter." Celik is quantifying the R-values, or thermal resistance, of different growth media-vegetation-fertilizer combinations.

According to Bill Retzlaff, associate professor of biological sciences and chair of that department, a green roof on the SIUE Engineering Building lowers the roof temperature in the summertime as much as 70 degrees. "The cost savings from green roofs can be significant," Retzlaff said. "The city of Toronto, Canada, has estimated that they could reduce annual heating and cooling costs by \$1 billion if six percent of the rooftops were green roofs."

Engineers have a unique opportunity to influence society by incorporating green initiatives in their designs.

Committed to Teaching, Scholarship and Service



Huaguo Zhou

Assistant Professor
Department of Civil Engineering

“SIUE is a great university with a very solid engineering program. The Department of Civil Engineering at SIUE has set a goal to build a strong transportation program in the St. Louis Metropolitan area. My goal is to educate and train aspiring transportation engineers.”

Education

Ph.D., transportation engineering,
University of South Florida
B.S. and Ph.D., railway engineering,
Beijing Jiaotong University



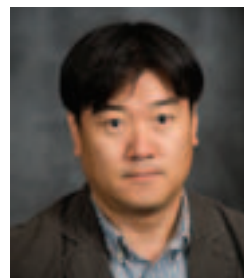
Ryan Fries

Assistant Professor
Department of Civil Engineering

“When I realized the character and the quality of the faculty at SIUE, I knew I wanted to be a part of it. The support has been tremendous. My goal as a teacher is to provide students with the skills, knowledge and motivation to become the practitioners, researchers and leaders of tomorrow in science and engineering.”

Education

Ph.D. and M.S., Clemson University
B.S., Civil Engineering, University
of Delaware



Sohyung Cho

Assistant Professor
Department of Industrial and
Manufacturing Engineering

“My teaching philosophy is to motivate my students and stimulate their interests by helping them answer these questions: How is this subject related to real life applications and the engineering profession? How can I use what I learn in the classroom in practice? How is the knowledge I’ve gained related to the other courses and disciplines?”

Education

Ph.D., industrial and manufacturing
engineering, Pennsylvania State
University
B.S. and M.S., mechanical engineering,
Seoul National University at Korea



Yun Wang

Assistant Professor
Department of Computer Science

“The mission of the Department of Computer Science is to provide high quality education and develop excellence in research, teaching and service. This mission matches my career goals—devoting myself to the academic profession and helping my students develop critical thinking, problem solving and communication skills. I believe these attributes will positively impact their lives as engineers and citizens.”

Education

Ph.D., computer science and
engineering, University of Cincinnati
B.S., computer science and engineering,
Wuhan University, Hubei, China



A Welcome Connection

Melanie Rodrigues and Jyoti Dharna traveled thousands of miles from vastly different continents to become next door neighbors and co-workers.

The two School of Engineering alumnae occasionally work on the same agricultural-based project team at Monsanto in St. Louis. Jyoti is a functional architect, a role that encompasses project management, software and user interface design, testing and analysis. A network technician, Melanie is involved in the monitoring, maintenance and analysis of the Monsanto networks.

Although they've only known each other a few years, their educational and career paths are remarkably similar.

Both Melanie and Jyoti came to the SIUE School of Engineering as international students. Born and raised in Abu-Dhabi, United Arab Emirates, Melanie earned a bachelor's in computer engineering in 2006 and a master's in electrical engineering in 2007. "My experiences at SIUE helped me become more confident and responsible and develop my own sense of individuality," she said.

A native of Nairobi, Kenya, Jyoti decided to come to SIUE based on advice from her cousin who was already attending the University. She earned a bachelor's in computer science in 2004. "I never felt like an international student," Jyoti said. "The enriching environment allowed me to develop confidence. I was comfortable enough to have a voice."

Melanie and Jyoti both thrived in the School of Engineering's welcoming environment. Everything they needed was in the state-of-the-art Engineering Building and faculty members were very accessible. Students studied in groups, often working together to develop solutions to various problems. "This is exactly what we do at work. My SIUE education fully prepared me for a successful career," Jyoti said.

Jyoti was chosen among the St. Louis Business Journal's Top 30 Under 30 for the class of 2008. The list recognizes young professionals who are already making names for themselves in the business world.

Both alumnae are members of Monsanto's SIUE recruitment team, attending career fairs, giving presentations and conducting interviews. "SIUE offers the total college experience—a focused education that is extremely cost effective and many opportunities to become involved and develop friendships," Melanie said.

**"My experiences at SIUE helped me become more confident
and responsible and develop my own sense of individuality."**

Melanie Rodrigues

Raising the Bar

Many engineering firms in the region are vital, dynamic members of the engineering community at SIUE. Numerous industry leaders are SIUE graduates and several are members of the School of Engineering Advisory Board. They support the School financially, provide input which helps shape curriculum, offer student internships and hire our graduates. One of those firms is Oates Associates Inc.

A civil and structural engineering firm offering services from concept through construction, more than half of Oates Associates' 42 employees are SIUE alumni. "SIUE graduates have strong communication skills and are always well-grounded in the basics," said David Oates, founder and president of Oates Associates. "They come to us ready to work and are committed to making the St. Louis Metro East a better place."

As a staunch supporter of the University, Oates is currently a member of the SIUE Foundation Board and previously served as its president and chair. The firm's chief structural engineer Bruce Schopp, BS '82, serves on the School of Engineering Industrial Advisory Board, and traffic engineer Tom Cissell, BS '97, MS '04, serves on the Civil Engineering Industrial and Professional Advisory Council.

When SIUE civil engineering students think about where they want to work after graduation, Oates Associates is top-of-mind for many. Maisie Graser, BS '07, interviewed with several engineering firms before joining Oates Associates as a junior engineer. "This was the only place I wanted to work," she said. "I appreciate the fact that we are encouraged to continue learning and get involved in the engineering community as well as our own community."

"They come to us ready to work and are committed to making the St. Louis Metro East a better place."

David Oates

Oates Associates has directed numerous transportation and building projects that have benefited the University and the surrounding community, including several major projects on the SIUE campus.

- **SIUE's state-of-the-art Engineering Building including improvements to surrounding roads and parking areas**
- **The SIUE Student Fitness Center addition**
- **The track and field facility at Korte Stadium**



SIUE School of Engineering

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