

THE UNIVERSITY OF IOWA COLLEGE OF ENGINEERING

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## Where the Rubber Meets the Simulated Road

THE NATIONAL ADVANCED DRIVING SIMULATOR AND MEDICALLY RELATED RESEARCH

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## Where the Rubber Meets the Simulated Road: The National Advanced Driving Simu

When ABC News correspondent Lisa Stark wanted to learn about the effects of taking sleeping pills on her driving performance, she chose to visit the National Advanced Driving Simulator (NADS) at the University of Iowa.

TEXT BY GARY GALLUZZO

Above left: The NADS-1 simulator. Above right: Array of high-resolution projectors inside the NADS-1. As she says in her ABC Nightline story: "With 60 million annual prescriptions for sleeping pills in the United States, there is increasing concern. That's what brought us to Iowa and the nation's most sophisticated driving simulator."

Following a day of simulated driving on the NADS-1 machine, she learned that a single sleeping pill caused her to drive on the wrong side of the road, sideswipe a truck, and generally drive in an unsafe manner.

But because it was a simulated drive—rather than a drive in a real car on a real highway—no one was hurt and no property was damaged. Additionally, she was able to get a feel for how



## lator and Medically Related Research

her own performance, and likely that of many other persons, was affected.

Scientifically valid data collected in a safe environment is the reason why many medical researchers and some pharmaceutical manufacturers have chosen and continue to rely on the NADS facility to examine the effects of medical conditions and treatments on driving performance.

The NADS-1 is similar in concept to flight simulators used to train commercial pilots, but it goes far beyond flight simulator capability by offering the high-fidelity sight, sound, vibration and motion cues that result from the complex interaction between a vehicle's tires and varying road surfaces.

The NADS-1 consists of a 24-foot-diameter dome that sits about 10 feet above a framework of a dozen gleaming metal rails. When the test driver of a specially modified passenger sedan, SUV, heavy truck or farm tractor inside the dome starts the vehicle, a battery of computers instantaneously projects 360 degrees around the driver images of roadways, buildings, trees and other elements—as well as oncoming traffic—for a pre-selected roadway environment.

Importantly, when drivers brake, accelerate and steer, they

experience real-time sensory stimuli, thanks to a unique 13 degrees of freedom motion system. Also, drivers experience an audio system that recreates wind, tire, engine and noises from other vehicles, including special effects such as the explosion (and coordinated vehicle behavior) that occurs when a tire blows out.

Omar Ahmad, NADS director of operations, says the growing use of NADS-1 to examine questions involving driving performance and medically related issues is understandable because there is an emerging need for safe driving tests to evaluate the effects of sleeping pills and many other medications and medical conditions that affect the central nervous system.

"The NADS-1 is sensitive to the effects of various kinds of impairments from alcohol, drowsiness, distraction and pharmaceutical drugs. Driving the NADS-1 is the closest that you can get to driving a real car without being in one," he says.

Ahmad offers visitors a summary of research projects that illustrate the breadth of medically related tests being done at the NADS. The projects include studies of: cannabis and driving, autism and driving, the validation of a portable driving simulator for testing alcohol and driving, advanced brain monitoring and driving, and vision and driving.



#### **Autism and Driving**

"As the description suggests, this current study looks at young people with autism and their ability to drive," says Gaffney. "However, it isn't as obvious as it sounds. That's because many people think that people with autism don't drive, but they do."

The study's co-principal investigators are Brown and Gaffney, whose research specialty includes autism studies. Clinical experience as well as emerging research findings indicate that higher functioning autism spectrum patients are using various modalities of transportation for education, therapeutic, and occupational goals.

Driving is one option for these patients. Although it was once unheard of for an autistic patient to drive, preliminary studies indicate a significant number of the students independently drive to various activities. The plan is to study particular obstacles to safe driving in these patients, as well as design programs to enhance their safety, and reassure their parents' worries, according to the co-investigators.

Says Ahmad, "My colleagues Tim Brown and Gary Gaffney are true pioneers in this area, a research field that some people surprisingly—may still believe doesn't need to be studied."

Above: NADS safe driver training: rural (left) and urban (right).

Right: High-frequency actuators-shown on this Jeep Cherokee-are used on the NADS-1 to recreate road effects.

#### **Cannabis and Driving**

"It's well-understood how alcohol affects people's ability to drive," says Ahmad. "What is not well-understood is how people drive under the influence of cannabis; there haven't been a lot of studies conducted."

The cannabis and driving study currently being conducted at the NADS aims to intensively investigate the effects of cannabis and alcohol in 20 drivers between the ages of 21 and 55 facing a variety of simulated driving conditions. Before participants are allowed to enter the testing environment, they must spend a night in the University of Iowa Hospitals and Clinics Clinical Research Unit (CRU) to ensure they haven't been drinking or smoking in advance of the test.

The pharmacological aspect of the study is equally as important as the information learned from the behind-the-wheel test, according to Dr. Tim Brown, Ph.D., an associate research scientist at NADS and co-principal investigator of the cannabis and driving study. Brown, a human factors engineer by training, is joined on the study by Dr. Gary Gaffney, M.D., associate professor of psychiatry at the UI Roy J. and Lucille A. Carver College of Medicine, and Dr. Gary Milavetz, Ph.D., associate professor in the UI College of Pharmacy, pharmacotherapeutics researcher and author.

"The UI will work cooperatively with the National Institute on Drug Abuse (NIDA) and the National Highway Traffic Safety Administration (NHTSA) to conduct this unique study of the effects of inhaled cannabis on driving performance," says Brown. "We will examine the impact of the combination of cannabis with alcohol on the driving task. This research is needed, as recent NHTSA roadside surveys have shown that when drivers identified as alcohol positive were also identified as drug positive, then cannabis stood out as the most commonly detected drug."

THE NADS-1 IS SIMILAR IN CONCEPT TO FLIGHT SIMULATORS USED TO TRAIN COMMERCIAL PILOTS, BUT IT GOES FAR BEYOND FLIGHT SIMULATOR CAPABILITY BY OFFERING THE HIGH-FIDELITY SIGHT, SOUND, VIBRATION AND MOTION CUES THAT RESULT FROM THE COMPLEX INTERACTION BETWEEN A VEHICLE'S TIRES AND VARYING ROAD SURFACES.







#### Validation of the MiniSim<sup>™</sup> Driving Simulator for use in Alcohol and Driving Tests

This 2011 project, conducted in partnership with the private contract research organization Cognitive Research Corporation (CRC) of St. Petersburg, Fla., examined a commercial application of the portable NADS MiniSim<sup>™</sup> Driving Simulator. Developed entirely at the UI's NADS facility, the NADS MiniSim<sup>™</sup> is used often in commercial settings and at sites that don't have access to or the need for the full capabilities of the larger NADS-1 simulator.

CRC, an organization with extensive experience in conducting and managing clinical research trial research aimed at investigating the effects of medications on driving, selected the MiniSim<sup>™</sup> as their standardized platform for driving research. To establish the validity of the MiniSim<sup>™</sup> for use in drug research, CRC conducted a study together with co-investigators Brown and Gaffney to assess the sensitivity of the MiniSim<sup>™</sup> to various levels of alcohol exposure (i.e., 0.10, 0.07, 0.05, and 0.0 blood alcohol level or BAC).

The MiniSim<sup>™</sup> has some of the same capabilities as its larger sibling, and its flexible design and low cost bring driving simulation technology to new areas of application, says Andrew Veit, MiniSim program manager and co-inventor of the system along with Ahmad. The PC-based system can be configured many ways, from a simple desktop system to more complex configurations with multiple displays and a variety of vehicle and truck cabs. In addition, driving scenarios developed on the MiniSim<sup>™</sup> will run on the larger NADS simulators. "The NADS MiniSim<sup>™</sup> is a portable, high-performance driving simulator designed for research, development, clinical and training applications," says Veit.

The NADS MiniSim<sup>™</sup> is often used in commercial settings, but the device must be validated for use in very specific tests, Brown says. "Validation for an alcohol and driving study done in 2011 with the Florida firm involved granting them a commercial license," he says.

The results of the study demonstrated that the MiniSim<sup>™</sup> was able to reliably detect impairment of simulated driving even at the lowest level of exposure–0.05 BAC. Furthermore, says Dr. Gary Kay, Ph.D., and CRC President, "these results are very useful in calibrating findings from other drug trials and investigators are able to relate a finding of impairment to a 'blood alcohol equivalent."

Ahmad adds that the MiniSim<sup>™</sup> will be marketed as tool for studying the effects of a variety of pharmaceuticals on driving performance.









#### **Vision Research**

This series of studies, conducted during the last decade, were designed to evaluate visual aids that could improve driving vision for aging eyes.

Brown notes that as people enter middle age, their visual acuity and peripheral vision decline, making it necessary to improve vision if they wish to continue to drive safely. It can become especially challenging for older drivers to drive at night.

Conducted by Brown and Dr. Mark Wilkinson, O.D., clinical professor of ophthalmology at UI Hospitals and Clinics, the FDA and NHTSA-funded study assessed the applicability of driving simulators as a tool in conducting vision studies. Then, industry-funded studies evaluated two possible vision aids. The first was an intraocular implant, while the second was a soft, contact lens. The study tests involved evaluating the driving performance of test subjects who had independently chosen to use one of the two aids.

"These series of studies helped relate changes in vision to driving performance. We were able to evaluate how different intraocular and contact lenses helped improve the driver's ability to see while driving at night and in low visibility driving conditions," says Ahmad.

Above: Triple-wide screenshot of a typical NADS suburban scenario. Left, top: The NADS-2 simulator. Left, middle: 3-channel quarter cab MiniSim. Left, bottom: A heavy loader in the NADS-1. Additional projection was used outside the normal NADS array.

#### **Advanced Brain Monitoring**

This study, says Brown, is currently being conducted with a California company that develops brain scan devices. Together with Milavetz and Gaffney, co-investigator Brown is helping to improve the accuracy of the devices. He notes that the NADS used the company's devices in several recent studies.

Brown says: "By studying changes in brain activity, we've improved the accuracy of the system in identifying decrements in driving performance. Moving forward, this will help researchers better understand the side effects of drugs on everyday tasks like driving."

In summary, medically related research lies at the heart of many of the most important studies conducted at the NADS.

Says NADS Director of Research Dr. Susan Chrysler, Ph.D.: "We value our collaborations with medical researchers because it fits into our overall research program of examining driving performance of special populations and understanding how vehicle technology could be developed to accommodate individual needs."

NADS Director Herm Reininga says the role of NADS in developing medically related driving research is well-established and will continue far into the future.

"So long as automakers are developing advanced evolutions in technology and medical researchers are improving methods and drugs to treat patients, NADS will provide the connection through research between human-directed motor vehicles and driver-state detection to improve driving safety."

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NADS DIRECTOR HERM REININGA



Assistant professor of biomedical engineering Sarah Vigmostad conducts class in a TILE (Transform, Interact, Learn, Engage) classroom. In the small photo, Iowa Gov. Terry Branstad was on campus March 8 to witness firsthand the new way of teaching.

# Socrates and technology reinvent the classroom

ometimes, everything old is new again. That certainly could be said about certain innovative teaching strategies that two University of Iowa College of Engineering professors are implementing in their classrooms. Sarah Vigmostad and Mona Garvin are employing 21st-century technologies to apply teaching strategies perfected by Socrates: frequent student/instructor interaction, challenging questions that build on one another, peer instruction, and frequent, low-stakes assessment.

Both assistant professors—Vigmostad in biomedical engineering with an affiliation in IIHR and Garvin in electrical and computer engineering and the Iowa City Veterans Affairs Health Care System—earned their BS, MS, and PhD degrees from Iowa and joined the UI faculty in 2008. Vigmostad researches the design and impact of biomedical devices related to blood flow dynamics and heart valve mechanics. Garvin is developing new methods for extracting quantitative data from 3-D ophthalmic images. In addition to conducting leading-edge research, both faculty members are accomplished, creative teachers whose classroom excellence recently earned them Collegiate Teaching Awards.

After teaching Statics for four semesters, Vigmostad decided to redesign the course around several "big questions" and transform class time into a more personal, active learning experience for her students.

"I realized that students often would get stuck on one or two little things that prevented them from progressing farther," she says. "Traditional large-lecture courses make it difficult to work with students individually, and I was frustrated that these little bumps in the road were only being resolved for those who came to my office hours."

TEXT BY JEAN FLORMAN



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Sarah Vigmostad, assistant professor, biomedical engineering

Vigmostad says Iowa's new Engineering Grand Challenge Scholars Program and several Center for Teaching workshops "opened my eyes to many different techniques that I could use to engage more personally with students during class and encourage them to actively think, not just passively listen." She began transforming her teaching to incorporate challenging questions that inspire students to think deeply and across many different fields of study.

In certain past courses, Vigmostad would have devoted two lectures to marching through the FDA regulatory classifications for the approval of medical devices. The students were expected to memorize policies that were disconnected from any authentic context. Today, however, she begins the unit by asking students to examine questions such as, "Why does the FDA exist?" and "How does the regulation of medical device manufacturing differ from the oversight of that of tennis shoes?" In class, students work in teams to explore the FDA web site, delve into authentic, real-world problems, debate the pros and cons of policies, and apply what they have learned to the challenging scenarios Vigmostad poses.

"Once they have engaged with the material, they then can figure out the actual criteria the FDA has developed to categorize and regulate devices," she says. "This makes them better able to answer questions about how and why the FDA makes its determinations and provides real context for the information they need to know."

Students not only actively engage with course material, they also engage with each other through teamwork and peer instruction. By wrestling with questions together and trying to



After assistant professor of electrical and computer engineering Mona Garvin (above) poses a multiple-choice question, students respond with their electronic clickers. She then tells them to "turn to your neighbors and convince them of your answer." After a brief small-group discussion, students again individually click in their answers. Research has shown that, fairly consistently, the number of correct answers increases the second time around.



Above: Students take advantage of in-class time to interact with each other and the instructor in an engineering class.

Right: Assistant professor of biomedical engineering Sarah Vigmostad is able to interact one-on-one with her students during class. explain and defend answers and critical thinking processes to each other, students learn more and learn how to learn.

Assistant professor of electrical and computer engineering Mona Garvin also puts these principles of good teaching into practice. In 2008, Garvin attended a series of UI Center for Teaching peer instructions workshops presented by Harvard Physics professor, Eric Mazur. She was intrigued by his use of student response systems ("clickers") to assess student learning in large lecture classes. After Mazur poses a multiple-choice question, students respond with their electronic clickers. Mazur then tells them to "turn to your neighbors and convince them of your answer." After a brief small-group discussion, students again individually click in their answers. Research has shown that, fairly consistently, the number of correct answers increases the second time around.

Garvin says this peer instruction technique not only helps her students learn, but the clicker data also effectively and efficiently captures what students understand as well as where they are confused. She then can respond on-the-spot to clarify problems or move on without belaboring points most students understand.

In her quest to actively engage students in the learning process, Garvin also employs computers and small robots during class time in her Computers in Engineering course. Although not exactly as adroit as R2-D2, the robots are beguiling in their own way. They can play music, display text, move around the tables, and even follow a path. Garvin uses the robots to enhance students' programming skills and provide a taste of the kinds of devices they may be working with in the future.

"Students work in teams to think through a series of challenge questions and tasks," Garvin says. "So, for instance, I might ask them to figure out how one might password-protect a robot so it requires a 'secret' sequence of button pushes before it can do a particular task or find its way through a maze."

Garvin sometimes programs the robots to play the Iowa Fight song and then asks students to examine the code and analyze how it works. They also figure out how to store a sequence of light sensor values obtained after each push of a button, and then display the median value.

Programming robots with teammates is intrinsically more motivating than simply writing code, which can be a tedious, solitary exercise.

"Instead of providing a stream of information in a lecture," Garvin says, "I provide a brief presentation, and then ask students to grapple with some engaging questions. Their engagement goes far beyond a pat, 'Oh, yeah, I understand and can regurgitate this," to 'Oh yeah, I think I understand this, but now I also need to apply it, analyze it, defend it, and then question my peers about their answers."

While Garvin's students can take their robots home to complete their assignments, for Vigmostad's students, classroom technology is more firmly rooted in place. She teaches in one of the University's new TILE (Transform Interact Learn Engage) classrooms—technology-enhanced rooms with round tables that seat nine students, extensive whiteboard space for student collaboration, and LCD screens where they can display their computer work for tablemates or the entire class. A three-day TILE Institute sponsored by the Office of the Provost helped her begin redesigning Statics from a stand-and-deliver lecture to an interactive, team-based, inquiry-guided course. As student teams tackle questions during class time, Vigmostad moves around the room to provide guidance. Sometimes this means helping them get "unstuck" the way she used to do one-by-one during office hours. Often, it means pushing them to the next level of critical thinking after they have gained a good understanding of the material. In a 50-minute class, she easily can connect individually with all 81 students—an impossible task in an auditorium.

"They end up doing much more than regurgitating information," Vigmostad says. "Even as undergrads, they actually start to generate information and ideas. You can see them having those 'Ah-ha!' moments. It's very rewarding for them and for me."

But do they learn the fundamental material?

"Absolutely!" she says. "In my four previous Statics classes, the average grade for the first exam was 40-50 per cent. The average in the TILE classroom was 78%. Even more important, the deeper questions I used to hear the day before an exam, the students now ask on the second day of class."

Vigmostad has mentored a number of other UI faculty members in the team-based, inquiry-guided approach. In March, she also showcased the benefits of a TILE classroom to Iowa Governor Terry Branstad and Lieutenant Governor Kim Reynolds, who visited campus at the invitation of Student Government President Nic Pottebaum. A former president of the UI Graduate Student Senate, Vigmostad assigned "student" roles to the state leaders, who enthusiastically joined UI student leaders in tackling inquiry-guided questions about circulatory devices.

Vigmostad also is has transformed her Senior Design Course by "flipping" basic course content into 15-minute podcasts that present new content or concepts. Created on Vigmostad's tablet PC, each online presentation is followed by another brief podcast where she applies the new concepts to solve a simple problem. By watching the podcasts, students achieve a basic understanding of concepts before coming to class. They then build on that knowledge in class through teamwork and interaction with Vigmostad. Thus the classroom experience effectively models what engineers do in their professional lives.

Despite their recent collegiate kudos, neither Vigmostad nor Garvin are resting on their teaching laurels. Garvin hopes to develop an online course that will help students learn or review the programming languages and other knowledge and skills that are pre-requisite to her Computers in Engineering course. Vigmostad currently teaches an online course that employs WACOM Bamboo tablets which students use to communicate with her and each other via asynchronous podcasts and real-time discussion, problem-solving, and peer instruction. While most students are relatively local, one "beams in" from China.

The two teaching award winners continue to create fresh and effective approaches to actively engage engineering students in learning, while remaining ever mindful that the ultimate goal is to help students become successful engineers who can both identify and solve real-world problems.

"After all," Vigmostad says, "engineers aren't hired because they know the answers, but because they know how to discover answers."



We promote and ensure equal opportunities for minority and women-owned businesses...and we recognized the encourage the balance of career, family, health and fi

## A Korean couple's journ

TEXT BY JEAN FLORMAN

From the time they arrived in Iowa City in the mid-1960s, Kwang-Kuk and Kook-Wha Koh began to create a shared life story unlike any other. After fifty years, their story remains as unique and captivating as the day they left their native Korea to begin graduate studies in chemical and biochemical engineering at the University of Iowa.

The couple met as children and both earned BS degrees in chemical engineering at Seoul National University. They married in 1963 and decided to continue their engineering studies in the United States.

"We looked up a list of Big Ten Universities in the library and found the address of the University of Iowa," Kook-Wha says. "We were able to come to the UI because we both received assistantships and scholarships."

But their plan to begin graduate school together took a bit of a turn when Kook-wha became pregnant. Considering this an opportunity to reframe their dreams, the couple decided Kwang would begin at Iowa in 1964 and Kook-wha would join him in July 1965 after their first child was born. When the new mother finally arrived in Iowa City, however, her son was not with her, but back home being cared for by two sets of loving grandparents. While extended families pitching in to raise children might have seemed unusual to mid-century Americans, it was valued by Korean couples, particularly in the post-Korean War years when Koreans sought education and connection with the wider world.

The College of Engineering welcomed the young couple not only with financial aid but also research opportunities and mentoring support. Professors Karl Kammermeyer and James Osborne helped the Kohs succeed academically and offered friendly advice. The Kohs later developed a close bond with Professor of Biomedical Engineering (now Emeritus) Kwan Rim.

"From the first day, Professor Kammermeyer told us to speak only in English—in the home, the lab, everywhere," Kook-Wha says. "You will not forget your native tongue,' he said, 'but by speaking English all the time, you will learn English fast.' Unfortunately, we did not take his advice, and for the first oral pop quiz, our ears and mouths did not open." Written exams and research were no problem for the Kohs, however, and they achieved success in the classroom and the lab. Kwang conducted his research during the day, and Kook-Wha carried out hers until midnight and later. And they kept up the academic pace despite the arrival of two more children, both born at University of Iowa Hospital.

"During the last year of my PhD studies, I had children who were three-and-a-half years old, two, and almost one," Kook-Wha says. The five-person family lived in a two-bedroom apartment converted from WWII army barracks—accommodations that served as the University's married student housing near Finkbine Golf Course. Despite tight quarters and academic pressures, Kook-Wha marvels at the fact that the "big house" with a gas stove and small refrigerator was a vast improvement over the houses most Korean families lived in after the end of the Korean War.

After earning their PhD degrees (Kwang in 1968 and Kook-Wha in 1970), the Kohs moved to Baytown, TX, where Kwang joined Esso (the international affiliate of ExxonMobil) where he worked in the synthetic fuel program for coal gasification. Eager to continue her own professional trajectory, Kook-Wha secured a postdoctoral fellowship at Rice University where she joined the renowned artificial heart program led by Michael DeBakey, MD.

Eight years later, the Kohs–who by then had a fourth child– moved to Detroit where Kwang began working for American Natural Resources (now Coastal Corp in Houston, TX) as an administrator in coal technology. For Kook-Wha, the change of venue also meant a change of career direction when she seized the opportunity to launch a new commercial venture: Chrysan Industries, Inc. Born in November 1977 and headquartered in Plymouth, MI, the company has become a leading global supplier of automotive lubricants and specialty chemicals. Chrysan (the name means "chrysanthemum" in Korean) owns several patents in metalworking fluid technology, formulated cutting oils, and synthetic coolants, and has repeatedly been recognized for product and supplier excellence by major manufacturers such as General Motors and Ford. The company exports to and has established distributors in Asia, Africa, and South America. business enterprises importance and tness, and faith.

## ey to success

Kook-Wha says she was inspired to leap into the corporate world by Professors Kammermeyer and Osborne, who had published about opportunities for commercial success in the field of chemical engineering. As Chrysan's profits began to demonstrate that connection in a significant way, Kwang joined the company in 1985. The Kohs' chemist son, Suk-Kyu, now serves as company president and CEO.

Although Kwang and Kook-Wha officially retired in 2006, Kook-Wha continues to work there when they are not traveling—and they have taken on traveling with as much passion and dedication as they devoted to their academic and professional careers.

"About ten years ago, we saw a National Geographic list of the 50 places everyone should see in their lifetimes," Kook-Wha says. "We have followed that list, one-by-one, and now have only one place left: the Seychelles."

The couple's book, *Hopping Seven Continents*, documents their travel adventures, including their ascent of Mount Kilimanjaro, which at 19,341 feet is the tallest free-standing mountain in the world.

"We are proud," Kook-What says, "because we climbed it in our 70s. I'm not sure I'd do it again, though; it was cold and difficult to breathe."

Given the impressive professional and personal accomplishments the Kohs have packed into their lives since graduating from Iowa, it's understandable that they would like to catch their breath. Once the final checkmark completes the National Geographic list, however, the Kohs will continue to travel. They recently explored the ancient Silk Road by train.

And not surprisingly, the language of Chrysan's core values and mission will continue to reflect the unique story of their very special journey through life:

We promote and ensure equal opportunities for minority business enterprises and women-owned businesses...and we recognized the importance and encourage the balance of career, family, health and fitness, and faith.









#### Mena-Carrasco Receives 2013 Distinguished Young Alumni Award

Marcelo Mena-Carrasco (MS 2003, PhD 2007 civil and environmental engineering) has received the 2013 Distinguished Young Alumni Award from the University of Iowa Alumni Association. The award honors UI graduates under the age of 40 at the time of their nomination who have attained significant accomplishments in their personal or professional lives.



Mena-Carrasco, director of the Center for Sustainability Research at the Universidad Andres Bello Santiago in Chile, continues the civil and environmental engineering research he began at the UI to improve air quality in his home country. Described as an international game-changer who understands well the social, economic,

#### Guymon Appointed Sharon K. Tinker Professor of Chemical and Biochemical Engineering

C. Allan Guymon, professor and departmental executive officer of chemical and biochemical engineering, has been appointed the first Sharon K. Tinker Professor of Chemical and Biochemical Engineering, effective July 1, 2013.

Guymon, who joined the college in 2002, also is a researcher



in the Photopolymerization Center (NSF IUCRC) and the Optical Science and Technology Center. His research interests are in polymer reaction engineering; UV curable coatings; polymer/liquid crystal composites; controlled release; and templated and ordered polymerizations.

He earned BS degrees in chemistry and applied mathematics in 1993 from Weber State University and MS and PhD

degrees in chemical engineering in 1995 and 1997 respectively from the University of Colorado-Boulder.

The endowed professorship is named after Engineering alumna Sharon Tinker (BSE 1980 chemical engineering), unit maintenance department manager of the Baytown Refinery at the ExxonMobil Chemical Company, where she works with a team of engineers, machinists, electricians, instrument technicians, and supervisors to ensure that the plant meets its important maintenance requirements. Tinker is a member of the College of Engineering Campaign Task Force and has served on the Chemical and Biochemical Engineering Advisory Board. and political consequences of local environmental quality, Mena-Carrasco possesses the rare ability to translate engineering research into improved public policy. In confronting the complex mechanisms of climate change and pollution, this inspirational and dedicated engineer has already made a positive and lasting impact.

Mena-Carrasco was among 12 notable alumni and friends selected by the UI Alumni Association (UIAA) to be honored at the 2013 Distinguished Alumni Awards luncheon June 8 at the Levitt Center for University Advancement, Iowa City.

Presented annually since 1963, the Distinguished Alumni Awards are the Alumni Association's highest honor. They recognize the outstanding achievements and service of UI alumni and friends. This year's awards are given in four categories: Achievement, Service, Faculty/Staff, and Young Alumni.

#### UI Presents Inaugural Information Technology Leadership Award to Eltoft

Doug Eltoft, chief technology officer for the College of Engineering, received the University of Iowa's inaugural Information Technology Leadership Award in recognition of his visionary capacity to imagine, collaborate, design, and create an ever-changing and robust computing environment.

Co-sponsored by the IT Leadership Development Team and the Chief Information Officer (CIO), the award was established to identify and highlight exemplary leadership in the university's IT community. Associate Vice President and CIO Steve Fleagle presented the award to Eltoft during the annual UI Tech Forum, attended by about 300 campus IT professionals at the Iowa Memorial Union on May 30.

"Doug has engaged with the technology community on campus for decades, giving of his time to serve on a wide variety of committees and campus-wide initiatives," Fleagle says. "His ideas and efforts helped lay the foundation for models that today are essential to our daily operations."

Eltoft oversees the college's Engineering Computer Services, Electronics Shop and Machine Shop.



Chief Information Officer and Associate Vice President Steve Fleagle (right) presented the inaugural Information Technology Leadership Award to Doug Eltoft (left), chief technology officer for the College of Engineering, at the UI Tech Forum on May 30 at the Iowa Memorial Union. Photo: Mike Jenn

## Peeples Appointed Associate Dean for Diversity and Outreach

Tonya Peeples, professor of chemical and biochemical engineering and director of the Ethnic Inclusion Effort for Iowa Engineering, has been appointed to the new position of associate dean for diversity and outreach for the College of Engineering, effective June 1, 2013.



Peeples will provide creative leadership, direction, coordination and assessment of diversity and outreach initiatives throughout the College. This includes advancing and expanding an emphasis on diversity in the research, education, and service missions of the College; developing and implementing a comprehensive plan to enhance recruitment and retention of a diverse undergraduate and graduate student body; and providing leadership in

developing and implementing an effective strategy to recruit and retain a diverse faculty and staff, among other responsibilities.

Since she assumed the directorship for the College's Ethnic Inclusion Effort for Iowa Engineering, Peeples has successfully led a holistic approach to improve ethnic inclusion among our engineering graduates and provide a model for other institutions interested in eliminating the disparity in ethnicity in engineering.

### IOWASMARTSWITCH

#### Student Business Wins Storer Award

The University of Iowa College of Engineering announced that the student business plan for a company named "Iowa Smart Switch" is the winner of its 2012–13 Hubert E. Storer Engineering Student Entrepreneurial Start-up Award.

The company plans to improve the quality of life for individuals with disabilities by developing high technology devices such as an intelligent switch that can recognize a range of inputs from hospital patients with physical communication disabilities.

Iowa Smart Switch personnel include Blake Martinson, a senior UI mechanical engineering student; Ben Berkowitz, a doctoral student in biomedical engineering; Zihan Zhu, a senior UI biomedical engineering student; Vince Hahn, an MBA student at the UI Henry B. Tippie School of Management; and mentor, Professor Richard Hurtig from the Department of Communication Sciences and Disorders.

The annual award, established in 2002 and funded by an endowed gift from College of Engineering alumnus Hubert E. Storer (BS 1959 industrial engineering), currently provides \$10,000 of initial financial support for a College of Engineering student technological business plan. Storer is president, owner and founder of Storer Equipment Company, Shreveport, LA.

#### Schnoor Named Recipient of Einstein Professorship

The Chinese Academy of Sciences has named Jerald L. Schnoor, Allen S. Henry Chair in Engineering, a 2013 recipient of an Einstein Professorship.

As a condition of the award, Schnoor, a civil and environmental engineering professor, visited China May 13–23 to deliver three lectures:



- On May 15, "Water Sustainability in a Changing World," at the Chinese Academy of Sciences, Beijing, and on May 22 at the Hong Kong Polytechnic University
- May 17, "Phytoremediation—Using Plants to Help Clean the Environment," at Xian.
- May 20, "Intelligent Digital Watersheds," at Guiyang.

The academy annually awards Einstein Professorships worldwide to 20 distinguished international scientists actively working at the frontiers of science and technology for the purpose of lecturing, leading workshops, and interacting with faculty and students for one or two weeks in China. The goals of the program include strengthening ties between awardees and Chinese scientists and enhancing the training of future Chinese scientists.

A member of the National Academy of Engineering, Schnoor also serves as research engineer at IIHR-Hydroscience & Engineering, co-director of the UI Center for Global and Regional Environmental Research, and editor-in-chief of the journal Environmental Science & Technology.

In addition, he is a professor of occupational and environmental health in the College of Public Health and researcher in the Center for Biocatalysis and Bioprocessing.

An internationally recognized expert in the fields of water quality monitoring, aquatic chemistry, and climate change, Schnoor has testified before Congress on several occasions and currently leads the UI Initiative on Water Sustainability.

#### **College Hosts LinkedIn's John Hill**

John Hill, higher education evangelist for LinkedIn, conducted networking power seminars June 4 on the UI campus. The College of Engineering hosted the event.

Hill presented two seminars: one on the power of LinkedIn to help collegiate communications directors and others on campus connect with alumni, document success, and build a powerful network; the second focused on how to build and enhance an individual's professional brand, enhance the branding services of a career center, and attract more organizations to recruit student and alumni.

The University of Iowa College of Engineering LinkedIn group has 1,256 members. To join the group, go to www.engineering. uiowa.edu and click on the LinkedIn icon.

#### Eichinger Is Recipient of 2013 Hancher Finkbine Medallion

William E. Eichinger, William D. Ashton Professor of Civil Engineering, professor of civil and environmental engineering, and faculty research engineer at IIHR--Hydroscience & Engineering, was named the 2013 Faculty Hancher Finkbine Medallion recipient. Eichinger received the honor at the annual Finkbine Dinner April 9.

He is a leader in LIDAR/atmospheric pollutant research.

Eichinger holds a bachelor's degree in physics from the U.S. Military Academy at West Point; a master's in nuclear physics/ engineering from the Air Force Institute of Technology, Nuclear Engineering; and a doctorate in atmospheric science and hydrology from the University of California, Davis.

He was named William Ashton Professor of Civil Engineering in 2008 and was a 2003 M.L. Huit Faculty Award recipient. He has served on multiple College of Engineering committees, advised the Society of American Military Engineers, and assisted many dissertations and Ph.D. selection committees.

To recognize leadership, learning, and loyalty, the tradition of awarding Hancher-Finkbine Medallions was established in 1964. They are named for the founder of the Finkbine Dinner, William O. Finkbine, and for Virgil M. Hancher, a student guest at the first dinner who served for 24 years as president of the University, and who, to an unusual degree, exemplified the three characteristics for which the awards are given.



University of Iowa President Sally Mason presents William E. Eichinger, William D. Ashton Professor of Civil Engineering, with the 2013 Faculty Hancher Finkbine Medallion.

Photo: Chelsea Darter / Student Life Marketing + Design

#### Stern Appointed to George D. Ashton Professorship

Prof. Frederick Stern has been appointed the George D. Ashton Professor of Hydroscience and Engineering at the University of Iowa, effective July 1, 2013. He is world renowned for his teaching and research work in computational and experimental fluid dynamics and ship hydrodynamics is world renowned.

Stern, who also is professor of mechanical and industrial engineering and faculty research engineer at IIHR- Hydroscience



& Engineering, employs computer modeling and on-the-water testing in IIHR's state-ofthe-art Hydraulic Wave Basin Facility to create software codes that analyze the flow of water around hulls of ships.

Stern received a BSE degree (summa cum laude) in 1975, MSE degree in 1977, and a doctorate in 1980, all in Naval Architecture & Marine Engineering from the University of Michigan. He joined the University of Iowa in 1983 after the retirement of

Dr. Louis Landweber, professor of mechanical engineering and research engineer at IIHR, former head of the David Taylor Model Basin, Naval Surface Warfare Center; a member of the National Academy of Engineering; and one of the founding fathers of ship hydrodynamics. As a young researcher, Dr. Stern trained at SAIC, Inc., Annapolis, MD, where he developed strong ties with Dr. William Morgan, another UI Engineering alumnus and director of the David Taylor Model Basin.

Engineering alumnus Dr. George D. Ashton is an international expert on the study of ice jams, ice control, flooding, snow drifting, snow loads, and river ice. Now a resident of New Hampshire, Ashton was born in Davenport, Iowa in 1939, received a BSCE degree in civil engineering from the University of Iowa in 1961 an MSCE in civil engineering from the University of Arizona, Tucson, Arizona in 1963, and a PhD in mechanics and hydraulics from the University of Iowa, in 1971. From 1962 to 1964 he was a Lieutenant in the U.S. Army. From 1964 to 1967 he worked as a Structural Engineer for Bechtel Co. in San Francisco. After earning his PhD, he joined the U.S. Army Cold Regions Research and Engineering Laboratory (CRREL) in Hanover, New Hampshire and held various research and management positions with his research concentrating on river ice processes and problems. From 1990 to 1998, he was Chief Research and Engineering Directorate. He retired in 1998 and now works as a private consultant in Lebanon, New Hampshire, dealing primarily with river ice problems. Ashton has received the Straub Medal from the University of Minnesota, the Hilgard prize from ASCE, the Stevens Award from ASCE and most recently the 2002 Ice Research and Engineering Award by the International Association for Hydraulic Research. He is the author of numerous papers and book chapters dealing with ice problems. He was Editor of the Journal of Cold Regions Science and Technology from 1995 to 2006.

#### **Promotions**

- Six College of Engineering faculty members have received promotions, effective July 1, 2013.
- Reinhard Beichel, from assistant professor to associate professor of electrical and computer engineering.
- Anton Kruger, from associate professor to professor of electrical and computer engineering.
- Jia Lu, from associate professor to professor of mechanical and industrial engineering.
- Punam Saha, from associate professor to professor of electrical and computer engineering.
- David Wilder, from associate professor to professor of biomedical engineering.
- Olesya Zhupanska, from assistant professor to associate professor of mechanical and industrial engineering.

#### **Appointments**

- Pavlo Krokhmal, associate professor of mechanical and industrial engineering and researcher at the Center for Computer-Aided Design, was appointed a Donald E. Bently Faculty Fellow of Engineering.
- Anton Kruger, professor of electrical and computer engineering and faculty research engineer at IIHR — Hydroscience & Engineering, was appointed a Donald E. Bently Faculty Fellow of Engineering.
- Madhavan Raghavan, professor of biomedical engineering and researcher at the Center for Computer-Aided Design, was appointed a Robert and Virginia Wheeler Faculty Fellow of Engineering.
- Olesya Zhupanska, associate professor of mechanical and industrial engineering and researcher at the Center for Computer-Aided Design, was appointed a Robert and Virginia Wheeler Faculty Fellow of Engineering.

#### Grants, Contracts, Patents

- Susan Chrysler, director of research at the UI National Advanced Driving Simulator and adjunct associate professor in the College of Public Health, received a three-year, driving safety-related contract from Toyota, North American Division for "Development of Driver Model for Driver Response and Crash Avoidance Behavior in Advanced Driver Assistance Systems (ADAS)."
- Jennifer Fiegel, assistant professor of pharmaceutics and translational therapeutics and chemical and biochemical engineering, received a \$405, 652 two-year R21 research award from the National Institutes of Health.
- Marcella Politano, adjunct assistant professor of civil and environmental engineering and associate research engineer at IIHR—Hydroscience & Engineering received a \$56,072 research grant from UT-Batelle, LLC. She will develop TDG representative equations for an integrated system-wide modeling framework for TDG spill management.
- Chris Schwarz, team leader, simulation software senior research engineer at the National Advanced Driving Simulator, received a U.S. Patent for an application using digital map data to adapt the performance of electronic stability control in a vehicle, particularly on banked or sloped roads. Schwarz and his collaborators developed the patented system to reduce vehicle lateral skidding.
- Tom Schnell, associate professor of mechanical and industrial engineering and director of the Operator Performance Laboratory at the UI Center for Computer-Aided Design, has received an \$8,190 research contract from Rockwell Collins, Inc., Cedar Rapids, IA, to conduct flight-testing of a radio navigation system for the company.
- Geb Thomas, associate professor of chemical and industrial engineering, received an \$84,352 research grant from the U.S. Department of Health

and Human Services, Agency for Healthcare Research and Quality. Thomas will study realtime, wireless, networked feedback for bed tilt compliance.

#### Recognition

- Ethan Budreau, senior in mechanical engineering, received a national Tau Beta Pi scholarship for the 2013–2014 academic year.
- Anton Gryshayev, senior in mechanical engineering and gymnast, earned All-America honors at the NCAA Event Finals held at Penn State on April 21. He is the Hawkeyes' first All-America honors on rings since Chris Camiscioli in 1998.
- Andrew Michalski is the university's Student Employee of the Year as well as the state of Iowa winner and regional honoree selected by the Midwest Association of Student Employment Administrators. Michalski works as a student research assistant in the Department of Internal Medicine, studying cystic fibrosis.
- Ian Nessler, received the Kenneth J. Cmiel Funded Human Rights Internship and a \$2,500 Stanley Award for International Research. Nessler, in association with Bridges to Prosperity, will spend the summer in Matagalpa, Nicaragua, managing the construction of a pedestrian bridge.
- Tonya Peeples, professor of chemical and biochemical engineering, received the University of Iowa Diversity Catalyst Award. She is a member of the Iowa NSF EPSCoR Broader Impacts team, serving on the diversity taskforce, and director of the Ethnic Inclusion Effort of Iowa Engineering.
- Joseph Tank, recent graduate in mechanical engineering received a Tau Beta Pi Fellowship for the 2013–14 school year. He will pursue a doctorate degree at the University of Southern California.
- Zihan Zhu, graduate student in the Departments of Molecular Physiology and Biophysics

and Biomedical Engineering was awarded a Certificate of Appreciation for her work as an undergraduate student researcher.

- The College of Engineering held its annual awards ceremony and reception May 16 at the Seamans Center for the Engineering Arts and Sciences. Engineering faculty and staff members were recognized in several award categories. Yong Chen, associate professor, mechanical and industrial engineering and researcher, Center for Computer-Aided Design, received the Faculty Excellence Award for Service. Keri Hornbuckle, professor, civil and environmental engineering, associate dean for academic programs, professor, occupational and environmental health, faculty research engineer, IIHR—Hydroscience & Engineering, and researcher, Center for Global & Regional Environmental Research, received the Faculty Excellence Award for Research. Mona Garvin, assistant professor, electrical and computer engineering, and Sarah Vigmostad, assistant professor, biomedical engineering, faculty assistant research engineer, IIHR-Hydroscience & Engineering, each received the Faculty Excellence Award for Teaching. Jianming Yang, associate research scientist, IIHR, received the Staff Excellence Award for Research. Dan Ceynar, engineer II, IIHR/ Iowa Flood Center, received the Staff Excellence Award for Service. Sarah Williams, manager, engineering help desk, Engineering Computer Services, was honored with the Mary Sheedy Staff Excellence Award.
  - Five Year Service Awards were presented to Kimberly Farrell, Tim Marler, Andrew Taylor, Meiji Zhang, Jenni Rumping, Dina Blanc, Kathy Kern, Travis Wendling, Scott Hanson, Brandon Barquist, Dingfei Hu, Doug Schnoebelen, and Greg Wagner.

Ten Year Service Awards went to **Barbara Booth** and **Carlton Richey**.

A Fifteen Year Service Award was presented to **Joel Steele**.

Twenty Year Service Awards were given to **Matt McLaughlin** and **Judy Holland**.

A Thirty-five Year Service Award was presented to **Doug Eltoft**.

#### **Publications**

Ibrahim Ozbolat, assistant professor of mechanical and industrial engineering and codirector of the new Advanced Manufacturing Technology Group and biomedical engineering doctoral student Yin Yu received the Industrial and Systems Engineering Research Conference Manufacturing and Design Track Best Paper Award at the Institute of Industrial Engineers Annual Conference and Expo 2013 in San Juan, Puerto Rico. The title of the paper was "Cell viability characterization of bioprintable bloodvessel-like cellular channels towards 3D organ fabrication."

#### Presentations

**Greg Carmichae**I, Karl Kammermeyer Professor of Chemical and Biochemical Engineering, associate dean for graduate programs and research, and co-director of the Center for Global and Regional Environmental Research, joined atmospheric researchers from around the globe in Kathmandu, Nepal, to discuss the connections between air pollution and the Asian summer monsoon during a four-day workshop from June 9–12.

#### 1970's

David Larson (BSIE 1977, MBA 1982) is vice president, corporate strategy and business development for Deere & Company.

Gary Seamans (BSEE 1971) delivered the charge to the graduates at the May 18 College of Engineering commencement ceremony.

#### 1980's

- Mark Bogue (BSCE 1982), and wife Jackie, attended a special College of Engineering reception June 9 at the UI Lakeside Laboratory, Milford, IA, for Engineering alumni, prospective students, current students, parents, and friends of the college. Mark serves as the chair of the Campaign Task Force Committee for the College.
- Kuang-Hua Chang (MS 1987, PhD 1990) has been named the David Boyd Ross Professor at the University of Oklahoma.
- Robert K. (Kelly) Ortberg (BSME 1984), president of Rockwell Collins, Inc. and member of the College of Engineering Advisory Board, has been appointed one of six new members to the FIRST Board of Directors. FIRST<sup>®</sup> (For Inspiration and Recognition of Science and Technology) is a not-for-profit organization founded by inventor Dean Kamen to inspire young people's interest and participation in science and technology.

#### 1990's

- **Steve Hartman** (BSE 1993), city engineer in Burlington, IA, and his son were in Iowa City for a college visit day May 8.
- Sheila (Schmidt) Stevens (BSE 1991) visited the college May 23. She is a medical device consultant with Clear Catheter Systems in Santa Clara, CA. Jerome Tonneson (BSE 1996) visited the college May 24. He is employed with Garmin International as a technical lead software engineer. He recently published a book titled Buttercup, the Legendary

Charm and Love of a Domestic Short-Haired Tabby Cat. To read a segment from the book, go to legendary buttercup.com

#### 2000's

#### Christina M. Freese-Decker

(MHA, 2002, MS 2002), president, Spectrum Health United Hospital and Spectrum Health Kelsey Hospital, won the American College of Healthcare Executives (ACHE) Robert S. Hudgens Memorial Award for Young Healthcare Executive of the Year. The honor is given for outstanding achievement in the field of healthcare management. Josh Gersten (BSE 2004) is manager, warehouse operations at Integrated DNA Technologies, Coralville, IA. Gersten also is a member of the College of Engineering's Young Alumni Advisory Board.



Timothy J. White (MS 2005, PhD 2006), US Air Force Research Laboratory, Wright-Patterson Air Force Base, OH, is the 2013 recipient of the SPIE Early Career Achievement Award in recognition of his innovative work in the development of light responsive materials and their employment as smart, remotely cued optically and mechanically adaptive devices.



The Johnson Controls, Inc. Florence (SC) Battery Recycling Center was honored at the American Academy of Environmental Engineers and Scientists (AAEES) Awards Luncheon for its on site integrated storm water and wastewater treatment facility. Timothy J. Lafond, P.E. (BS 1978, MS 1982), executive director, environmental engineering & risk management, co-designed the treatment systems. The facility was the first of its kind permitted and built in the United States in over 20 years. Lafond and the design team received the 2013 grand prize award from AAEES in Industrial Treatment and also the W.Wesley Eckenfelder, Jr. Industrial Waste Management Medal. Johnson Controls partnered with CDM Smith, who co-designed and built the treatment facilities, to ensure they protected the community. the environment and allowed for water reuse with reduced dependence on the municipal water supply, with unique zero discharge of storm water. Several alumni attended an informal reception at the Santa Clara, CA Marriott Hotel on March 25. Attending were:

March 25. Attending were: Sinan Sousan (PhD 2012); Kitty Zhang (MS 2007); Sheila Stevens (BSE 1991); Fan Yang; Jim Schallau (BSEE 1962), Mike (BSE 2003, BA 2003) and Kristi (Schmidt) Bauerly (BSE 2002) and Rhett Livengood (BSEE 1985).

#### 1940's

Frederic L. Blum (BSCE 1943) of Edison, NJ, February 22, 2013.

**Elwyn S. Brown** (BSChE 1942, MS 1947, MD 1950) of Kansas City, MO, May 4, 2013.

**Royal H. Burkhardt** (BSEE 1946, MS 1947, PhD 1950) of Springfield, VA, March 21, 2013.

Robert W. Crain (BSEE 1949) of Tucson, AZ, March 27, 2013. Alva A. Evans (BSChE 1949) of

Cedar Rapids, IA, November 25, 1991.

Sidney L. McDonough (BSEE 1948, MS 1949) of Bloomington, MN, November 23, 2006.

Floyd H. Meyer (BSME 1943, MS 1956) of Solon, IA, May 28, 2013.

Robert S. Nelson (BSChE 1942) of St. Louis, MO, December 2, 2012.

John W. Noe (BSChE 1943) of Midlothian, VA, April 24, 2013.

Richard E. Olson, Sr. (BSME 1947) of Springville, IA, May 16, 2013.

George S. Parks (BSME 1947) of Salina, KS, January 29, 2013.

Joe Sherman (BSCE 1942) of Dresher, PA, March 27, 2013.

Gerald A. Wilson (BSME 1947) of Madison, WI, March 7, 2013.

#### 1950's

John W. Acer (BSEE 1958, MA 1960) of Phoenix, AZ, June 24, 2012.

Marvin L. Brieske (BSEE 1958) of Kingman, AZ, February 2, 2013.

William G. Hall (MS 1953) of San Luis Obispo, CA, April 8, 2013.

Linford H. Keesey (BSME 1958) of Oakwood, GA, April 2, 2013.

**G. Kenneth Mathews** (BSEE 1950) of Keokuk, IA, February 25, 2013.

Paul J. Schneider (MS 1951, PhD 1954) of Los Altos, CA, March 1, 2013.

Donald Ray Wagner (BSME 1950) of Scottsdale, AZ, February 28, 2013.

#### 1960's

Michael J. Dubisky (BS 1961) of Belvedere-Tiburon, CA, August 2, 2010.

Leonard James Fletcher, Jr. (MS 1961) of Lake Winnebago, MO, June 17, 2012.

David W. Gjerde (BSME 1960) of Cockeysville, MD, May 2, 2013.

George W. Heasley (BSME 1960) of Mesa, AZ, December 10, 2012.

Walter K. Johnston (BSEE 1964) of Shreveport, LA, May 21, 2013.

Clifford G. Mecklenburg (BSME 1960) of Longwood, FL, March 5, 2013.

Darrell A. Meyer (BSME 1962) of Orange, CA, January 29, 2012.

Richard A. Neff (BSME 1965) of Manchester, NH, June 16, 2010.

Tom F. Stouten (BSCE 1961), August 30, 2012. Marvin L. Thornton (BSCE 1960) of Ankeny, IA, April 25,

2013. John A. Tonkinson (BSME 1961) of Torrance, CA, May 11,

2013. **Marion L.Vink** (BSEE 1966) of Pella, IA, April 22, 2013. **Ben C.Yen** (MS 1959, MS 1965) of Urbana, IL, December 23, 2001.

#### 1980's

**Jay Shannon** (BSE 1984) of Ames, IA, April 25, 2013.

#### 1990's

Richard G. Jensen (BSE 1993) of Algona, IA, February 26, 2013. Thomas J. Knepp (BSE 1992) of lowa City, IA, April 8, 2013.

#### From the Foundation

"I give to the College of Engineering because I know private support is essential to funding the College's commitment to providing the highest quality educational experience for its students. Whether that means new facilities, new programs, scholarships or student travel opportunities, private support makes it happen. The knowledge that my support makes a positive difference in the education these students receive is highly gratifying." —Tom R. Hanson, 1960 BSME

On May 4th, the college hosted the **For Iowa. Forever More.** campaign kick-off with an open house to showcase their outstanding research and student projects. I watched in amazement at the creativity, innovation and motivation of our students, faculty and alumni! Professor's Joe Reinhardt and Karim Abdel-Malek even went the "extra mile" in preparing flap-jacks for breakfast for all in attendance.

The For Iowa. Forever More. campaign will help the college advance its priorities for students, faculty, programs, and facilities. The UI College of Engineering is ranked among the top 20 percent of engineering graduate and undergraduate programs nationally by U.S. News & World Report. Enrollment to the college has grown steadily over the past seven years-from 1,201 students in the fall of 2005 to 1,840 in the fall of 2012 and the college also has experienced tremendous growth in our research and outreach programs and teaching and service activities. To continue this impressive growth, impact, and success, a facility expansion and enhancements are necessary. We are bursting at the seams of our current facility and are planning for an addition to the Seamans Center for the Engineering Arts and Sciences. The campaign also hopes to increase support for undergraduate scholarships and graduate fellowships; unrestricted gifts for each of its five departments; faculty chairs and professorship endowments; the Grand Challenge Scholars and the water sustainability initiative funds as well as core support for the college.

To learn more about the campaign and how gifts from alumni and friends support the UI College of Engineering, please visit www.givetoiowa.org/engineering or contact me at amy-brainard@uiowa.edu, (319) 467-3790, or toll-free (800) 648-6973. It is a privilege for me to work in development for the UI College of Engineering. I look forward to hearing your own "Why I Give" story and being an integral part in the College's continued advancement and success.



Amy Brainard Director of Development College of Engineering

#### http://alumnimap.engr.uiowa.edu/





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# Where in the world are engineering alumni?

Ever wonder where fellow alumni ended up after graduation? Had a desire to reconnect with former fellow classmates for work? Want to see the widespread effect Iowa Engineers have on the world?

Engineering alumni can do all of these things with a new on-line, interactive world map, now available at http://alumnimap.engr.uiowa.edu/.

By clicking on Make Your Mark, you are able to tell fellow alumni who you are, where you're at, your email address, your degree information, and any other information about yourself you would like to share. You are free to add as much or a little information as you want.

By clicking on each Iowa "I," you can see where alumni reside and work around the globe. Also, there is a program "drop down" list that enables you to see all alumni posted or only those from a specific major.

You also can zoom into a particular state or country with the zoom bar, or zoom out to show the entire world.

We hope our new interactive world map can help loyal Engineering alumni connect even more with each other, as more and more graduates participate. Enjoy!