11-3-2014

Iowa Engineer, Volume 2014, No. 2

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Reflections on four great years for the UI College of Engineering

It is hard to imagine that four years have passed since I began serving as the Dean of Engineering. In that time many great things have happened for the College, thanks to the energy, talents, and dedication of our faculty, staff, students, alumni, and friends. For example, our undergraduate enrollment has grown from 1,573 in the Fall of 2010 (a record at the time) to 2,120 this fall. And our research enterprise continues to grow in scope and impact as illustrated by the research funding that we have attracted and the journal articles that we have published. Our faculty and staff have garnered numerous prestigious awards and recognitions from around the country and across the world. It is inspiring to work with such talented people who are dedicated to making our college the best that it can be.

For the past four years, it has been an honor for me to meet so many of our alumni and friends, and to learn how you have made a difference in the world since graduation. It is obvious that our alumni are passionate about the College of Engineering and want to continue to be part of the great things happening in the college. As one example, this issue of Iowa Engineer features stories of how our alumni and friends are serving as mentors for our current students. There are so many ways that you are giving back to the College, and helping us to thrive in a dynamic and competitive environment. Thank you for your engagement!

Finally, I want to mention an exciting development that will be featured in a future issue of the Iowa Engineer. The sustained growth in the scope and impact of our teaching, research, and service activities hasn’t gone unnoticed, and it is clear that we need additional facilities for the college. Therefore, in September, the Iowa Board of Regents approved an approximately 68,000 square foot addition to the Seamans Center for the Engineering Arts and Sciences. About half of this state-of-the-art addition will provide new academic space, with the other devoted to new research space. The expansion will further inspire the hands-on collaborative learning approach that defines our college. There will be much more on the building addition in the future issue. For now, let’s celebrate together our current success, and imagine what we can achieve in the future.
Alumni Mentor Students

Tom Marriott

From Class to Counselor: Mentor Students

Marriott loves school. In fact, he loves it so much, the 1968 BSChE alumnus even attends engineering class when visiting the University of Iowa from his home in Allentown, PA. One thing that has changed since Marriott attended Iowa, however, is that the College of Engineering now offers a mentoring program for students majoring in chemical engineering—a program Marriott launched during the 2012-13 academic year. The safety and manufacturing/plant operations expert says that even though one of his former UI engineering professors, Arthur Vetter, served as a generous academic mentor to him, “looking back, I really could have used some advice from someone working in the profession.”
“I hope alumni from other departments will consider...”

“It’s really interesting to sit in on a couple of classes now and then,” says Marriott. “And I’m happy to report that since I was in school, the laws of thermodynamics apparently haven’t changed much.”

The idea to start a formal mentoring program for students came to Marriott when he chaired the Chemical and Biochemical Engineering Advisory Board.

“When talking with students,” he says, “I discovered that they really didn’t have a solid idea of what being a chemical or biochemical engineer was all about. Especially at the sophomore level, they were so focused on getting through the tough curriculum, they weren’t thinking about ‘Should I go into process engineering? HR? Production or product engineering? Become an entrepreneur?’ After 30 years in the profession, I thought I—and other professional engineers—might be able to pass along a few things that could help them make those decisions.”

Marriott adds that today’s engineering student at Iowa gets excellent career advice from an array of College resources, including faculty members and professional development staff members. The chemical engineering mentoring program simply provides one more facet to that array, enabling students to connect regularly with someone who currently works in the profession.

The program matches professional engineering mentors with student mentees who have expressed an interest in the same area of expertise. In a manuscript that will appear in the Proceedings of the 2014 ASEE North Midwest Section Conference held in Iowa City in October, Professor of Chemical and Biochemical Engineering, David Murhammer describes the goals of the program as “interactively supplementing the students’ formal education with the mentor’s knowledge, experience, and counsel. This includes individualized help with career planning, resume preparation, interviewing savvy, internships, networking opportunities, lasting relationships and more.”

Mentoring matches are made in students’ sophomore year, when they have completed most of their general engineering requirements and must choose an “Elective Focus Area.” Mentors are encouraged to connect with their mentees at least three times during the sophomore year and to continue the relationship until—and perhaps even after—students graduate. The program may also lead to an opportunity for successful internships for the students, and if students’ employment prospects also are enhanced through their involvement with the program—“Well,” Marriott says, “that would be a terrific bonus.”

Mariott’s own career began with Rohm and Haas, where he worked in a range of roles before joining Air Products in 1979. While gaining extensive international operations and engineering experience at Air Products he also graduated from the Advanced Executive Program at Northwestern University in 1989. His 25-year career at Air Products took him to jobs in 14 countries in Asia, the South Pacific, Central and South America, and north and south Africa. After retiring from the firm in 2005, he launched a private consulting firm, Hawkeye Consulting Services.
"It’s easy for students to focus only on their lives as students in Iowa City,” Marriott says. “But they can learn so much from their mentors about the life of an engineer beyond college and around the world.”

Although only two years old, the mentoring program already has fulfilled that goal for dozens of chemical engineering students. After gaining an enthusiastic go-ahead from then-department executive officer David Murhammer, Marriott invited advisory board members and alumni who had graduated at least ten years before to join the program. The initial invitation garnered 24 volunteers—fortuitously the same number of chemical engineering students who requested mentors. The following year, the program invited alumni who had graduated five or more years before, and an additional 20 engineers volunteered. So many new students wanted to join the program, however, some mentees, including Marriott, agreed to take on more than one student advisee. As the number of entering students continues to increase, Marriott is hoping even more alumni will join the mentoring team.

During past fall semester chemical and biochemical advisory board meetings, Marriott, fellow board member John Kessler, and a student in the program speak about the mentoring program to sophomores in the Process Calculations course taught by associate professor of chemical and biochemical engineering Julie Jessop. College of Engineering administrative services coordinator Katie Schnedler also lends her support to the program by maintaining the database of mentoring partners.

Fourth-year student leader Spencer Zook says Jessop’s strong encouragement helped him connect with retired Air Force colonel and Iowa City businessman Jerry Thorius (BSChE 1969). “I really enjoy our meetings,” says Zook, who will graduate in May. “Jerry has provided insight into the wide range of career paths that my major can open. I recommend the program to any student who wants to learn more about the real-world applications of engineering.”

Of the 53 alumni who have committed to be mentors, only a few work in the Iowa City area, so many of the mentoring relationships take place by phone, email, or even social media. Marriott encourages mentors who visit Iowa City for Homecoming, advisory board meetings, or business to arrange face-to-face meetings with their student mentees.

“I hope alumni from other departments will consider this mentoring program as a model for success,” Murhammer says. “Of course, we’ve been particularly fortunate that Tom has taken the initiative and been willing to organize and support the program.”

Marriott adds that he expects the program to continue for years to come. “I just signed up six more alumni as mentors,” he says. “And I really enjoy facilitating the program. I’m retired, I love the University of Iowa, and I wanted to give back. This is one way for me to do just that.”
Corporate Mentoring:

“What you need to know, not what you want to hear”

Bob Chiusano, retired executive vice president and chief operating officer of Rockwell Collins, Inc. and College of Engineering instructor, makes a point about students better preparing themselves for the working world.
"corporate mentoring" sounds formal and impersonal, Bob Chiusano and Dan Mineck will quickly dispel that notion.

These longtime veterans of two of eastern Iowa’s largest employers—Rockwell Collins and Alliant Energy—are utilizing their extensive corporate mentoring experience to benefit UI engineering students in highly personalized ways. And their efforts are paying off, both for students and their eventual employers.

**Lessons in leadership**

Chiusano, formerly executive vice president for Commercial Systems and Government Systems at Rockwell Collins, Inc., retired from the company in 2007 to launch a consulting firm devoted to executive coaching and organizational excellence. Today, he’s starting his second year of teaching a popular leadership seminar at the UI College of Engineering based on his new book, *Mediocrity is Not an Option*.

“I believe there’s a real need to better prepare young men and women for going out into the working world, in addition to just teaching them the hard skills necessary to accomplish a task,” Chiusano says. “You can learn how to be a great engineer, but to truly succeed, you have to acquire the soft skills of leadership, including how to communicate effectively, work collaboratively on teams, earn the respect of others, lead others to a place they would not go on their own and to pursue a path of lifelong learning.”

As a part of the seminar, Chiusano offers to meet with every student for one-on-one mentoring. “It’s incredibly fulfilling, particularly when I get notes saying, ‘you truly changed my life.’ That’s how a mentor-mentee relationship should work. These relationships help each of us learn and grow.”

Mentoring played a key role in Chiusano’s own career path. He grew up in Schenectady, New York, and after earning an associate’s degree, began working as a lab tech at General Electric. “One day, my boss, Jerry, pulled me aside and told me I was underutilizing my skills and should go back to school. ‘I don’t want to lose you,’ he said, ‘but I have to look at what’s best for my employees, and what’s best for you is to finish your education and reach your full potential.’

“I had every excuse in the world to not follow his advice,” Chiusano recalls. “I was 24 years old and helping to support my mother and four siblings. But then I started thinking about it and realized he was right.” Chiusano went on to earn a degree in industrial engineering from the State University of New York and, later, an MBA from the UI’s Tippie College of Business.

“Jerry’s encouragement planted the seed about how important it is to have people in your life who will tell you what you need to know, not what you want to hear.”

**Parlez-vous teamwork?**

Dan Mineck’s approach to mentoring involves plenty of encouragement as well—and sometimes in French. Mineck, who retired in 2004 as vice president of performance engineering and environment at Alliant Energy, is in his seventh year of leading the UI College of Engineering Virtual International Project Team (VIPT) program, in collaboration with colleagues at the Ecole Polytechnique Universitaire de Marseilles.

VIPT is a highly-sought option within the senior design course required for UI mechanical and industrial engineering majors. “Our students work closely with French engineering students over the internet to solve big, long-term problems,” Mineck explains. “Then French students come here for a week in February and our students travel to Marseilles in May. It’s a super way to get a truly meaningful international experience.”

“In this program, we’re sort of marrying mentoring with work experience and, to be honest, I’m not sure you can separate the two,” Mineck says. “As a young employee, you should be searching out opportunities to learn from others; not just how to do the job, but how to live within a new environment, whether it’s a corporation or foreign country.”

Like Chiusano, Mineck benefited from the guidance of mentors in his life. “I grew up in Cedar Rapids and worked at my uncle’s grocery story during high school,” Mineck recalls. “I had no idea what the term ‘work ethic’ meant until I saw how hard my uncle worked and what he expected of me. That experience had great value.”

After graduating from high school, Mineck was approached by a member of his church who worked for a local utility company. He urged Mineck to contact the company—the precursor to Alliant Energy—about working there as a co-op student while Mineck pursued his engineering degree at Iowa State University.

“I didn’t even know what a utility company was,” Mineck laughs. “This guy arranged several interviews and I agreed mostly to get him off my back. But I did the interviews, the executives got interested in the idea, and I got hired. And I stayed with that company my whole career.”

**The corporate ROI**

Both Mineck and Chiusano come from employers with formal mentoring programs, and the two men find their relationships with UI students to be mutually rewarding. But from a corporation’s perspective, why is mentoring—including student mentoring—so important?

“Most companies would say that the broader an employee’s range of experience, the better,” Mineck says. “Exposure to other cultures and ways of thinking expands your own view and leads to better decision making. Whether that exposure comes through a one-on-one relationship with a mentor who’s had lots of different corporate experience, or a program like VIPT, learning from others is key to your own success and the success of your employer.”

Chiusano agrees. “Any organization that can fill its ranks with people who are striving to reach their full potential will have a competitive advantage. Imagine an organization where people are motivated, challenged, and energized every day. If you’re doing mentoring well, then the entire organization becomes infused with the passion to learn, have fun, and make a difference each and every day. Those organizations tend to differentiate themselves and come out on top.”
MESA Reaches a Milestone

TEXT BY JEAN FLORMAN

It’s a banner year for members of the Multi-Ethnic Engineering and Science Association Tutoring Program, which begins its third decade this fall. The program connects UI engineering students in MESA with Iowa City Community School District (ICCSD) students who are interested in enhancing their academic experiences in science, technology, engineering, and math.

“MESA is about inspiring students, building their academic capacity, and continuing their connection to STEM activities through establishing a mentoring community,” says professor of chemical and biochemical engineering and associate dean for diversity and outreach Tonya Peeples.

The UI tutors help students between fifth and twelfth grades focus on academic achievement and dream big.

“We provide the kids with advice on how to approach problems in a range of subjects and how to incorporate good study habits in their daily routine,” says chemical and biochemical engineering graduate student Richard Gonzalez, who has participated in the program for five years, including one year as president of MESA. “We try to serve as role models for the kids since we tutors are still students as well. We tell them where we are from, what we have achieved, and what they can do with an engineering degree—both the “knowledge and the opportunities.”

As the umbrella organization of multiethnic and diversity student organizations, MESA’s mission is to encourage academic interactions across diverse disciplines, ethnicities, and nationalities. The impact of MESA extends beyond the academy to the interactions forged with local students during Tuesday evening tutoring sessions in the Seamans Center. The program serves around 90 students each year.

In recognition of its longtime efforts, the University awarded MESA the African-American Studies Community Service Award last spring.

Engineering students spread the word about the free tutoring through junior high resource fairs and a fall informational meeting for parents. The UI students are well prepared for their role as teacher-mentors; the ICCSD Equity Director, Johnson County Neighborhood Center staff members, custodial service staff members, the UI Director of Ethnic Inclusion, and College of Engineering Director of Diversity Programs and K-12 Outreach Tracy Peterson have all contributed to teaching the UI students about the School District’s behavior expectations and policies, as well as best practices to teach and positively encourage young people.

The success of the program is apparent in the success of the UI engineering students who themselves were mentees in their younger days. Mohammed Elkhair (BSE 2011 chemical engineering) is a program alumnus both as a MESA scholar when he attended Iowa City schools and later as a tutor when he pursued an engineering degree at Iowa. Elkhair now works as a production supervisor for Cargill in Sioux City, IA. Peeples says former MESA Scholars in particular “do a great job motivating MESA scholars to improve their performance in school and to enter the next level of rigor in their studies.”

“It makes me proud when I meet tutors now who were tutees years ago,” Gonzalez adds. “The program empowers minority students, including African Americans, Latinos, and children from Middle Eastern countries. I am a true believer in the effect of this program to raise awareness of STEM among minority students.”

The young MESA scholars aren’t the only beneficiaries of the mentoring experience, however.

“Iowa student leaders in MESA gain a connection to the community and build cross-cultural mentoring skills,” Peeples says. “Many of our UI tutors and mentors have had distinguished educational careers and move into work at companies such as Cargill, John Deere, and General Mills. One alumnus is an assistant professor of biomedical engineering at North Carolina A & T University.”

Gonzalez adds that he has polished his teaching skills by working one-on-one with younger students. “And I’ve learned that leadership is not only coordinating tasks but also honing the ability to communicate and motivate team members to enhance strategic goals.”
“I am a true believer in the effect of this program to raise awareness of STEM among minority students.”

Richard Gonzalez, chemical and biochemical engineering graduate student

Multi-Ethnic Engineering and Science Association student tutors (third photo from top) and (bottom photo) guide local elementary students on projects aimed at improving science, technology, engineering, and math (STEM) skills.
On April 4, 2014, the College of Engineering held an investiture ceremony at Old Capitol to recognize the generous contributors who have established some of the college’s most recent named, endowed professorships, and to honor the faculty who hold these distinguished positions. Although donors and faculty were the official honorees at the event, UI engineering students also benefit from these impactful gifts, which have led to the creation of more than a dozen named, endowed chairs and professorships throughout the college.

Among the donors honored at the April ceremony was Sharon Tinker (BSE 1980 chemical engineering), a longtime employee of ExxonMobil Corporation with a passion for chemical process safety. In 2012, she established the Sharon K. Tinker Process Safety Professorship in Chemical and Biochemical Engineering through a $1 million gift commitment to the college.

“I had been working in chemical plants for several years,” Tinker recalls, “and was troubled by the impact of major incidents like the Union Carbide toxic gas release in Bhopal, India, in the 1980s. My primary objectives in creating the professorship were to build on the college’s existing undergraduate process safety program to ensure that undergraduates receive a solid education in process safety concepts, and to spur graduate study in process safety topics.

“Ultimately, I would like the University of Iowa to be seen as a leader in chemical engineering process safety education and research by graduating students with process safety expertise and commitment to managing process safety risk.”

C. Allan Guymon, professor and departmental executive officer of chemical and biochemical engineering, who was named to the Tinker Professorship in 2013, says Tinker’s generosity is having precisely the impact she envisioned.

“Sharon has been a great friend to the department in so many ways,” he explains. “In addition to the professorship, which is funding various research projects, she also provides a copy of Trevor Kletz’s landmark book, What Went Wrong?, to each of our process safety undergrads. They all know Sharon and they value her perspective. We are one of the few colleges in the country with a process-safety class and lab, and Sharon’s support definitely is strengthening our program.”

A family whose generosity has strengthened many aspects of the college also was recognized at the April investiture. Through the Ashton Family Foundation, Dr. James D. Ashton (BSCE 1964) made gift commitments to create named professorships honoring his brothers, George and William, both of whom, like Jim, are highly accomplished UI engineering alumni.

George D. Ashton (BSCE 1961, PhD 1971) is an international expert on the study of ice jams, ice control, flooding, snow drifting, snow loads, and river ice. He retired in 1998 after a long career with the U.S. Army Cold Regions Research and
Engineering Laboratory and now works as a private consultant in New Hampshire. In 2013, Professor Frederick Stern was appointed to the George D. Ashton Professorship in Hydroscience and Engineering, which is furthering Stern’s work in fluid mechanics and ship hydrodynamics, including participation by UI undergraduate and graduate students in Naval Engineering Educational Center research projects.

“Being named as the George Ashton Professor is a major career milestone that is deeply appreciated, and also is meaningful on a more personal level,” Stern says. “My father was a professor who had always wanted to achieve a named professorship, but he died mid-career in a sailboat race. I have the additional satisfaction of knowing how pleased he would be that I’ve been awarded this honor.”

William D. Ashton (BSCE 1962, MS 1963 civil engineering) founded Ashton Engineering in Davenport, Iowa, and worked for many years for the Rock Island Corps of Engineers. Service with the Corps is something he shares with Williams E. Eichinger, professor of civil and environmental engineering and faculty research engineer at IIHR—Hydroscience & Engineering, who was named to the William D. Ashton Professorship in Civil Engineering in 2008.

“I loved talking with Bill Ashton at the investiture ceremony this spring,” Eichinger says. “Besides both serving with the Corps of Engineers, we discovered that our first assignments were at the same base in Virginia.”

For Eichinger, the Ashton Professorship has meant one thing: additional resources for his very enterprising students. Much of Eichinger’s research deals with the interface between the atmosphere and the surface of the earth; for example, examining the effects of vehicle salt spray on highway bridges, or measuring the size, shape and velocity of raindrops to determine rainfall volume.

“I tend to have a lot of undergraduates working for me,” he says, “and when you present them with these sorts of problems, they have all kinds of ideas and solutions they want to try. Funds from the Ashton professorship enable me to buy parts and equipment for my students to use in the field, where a little money goes a long way. In cases where existing measurement tools are expensive or not very effective, the students will brainstorm and build their own instruments, which tend to be highly practical and cost-efficient.

“At first, they don’t believe they can do it,” Eichinger continues. “But then their concept works, and they stand back and suddenly realize what they’ve done. It’s really neat to see.”

Thanks to visionary donors like Sharon Tinker and the Ashton family, UI engineering faculty and students will be seeing—and shaping—the future for decades to come.
New Faculty

James Ankrum has been appointed assistant professor of biomedical engineering and researcher at the Fraternal Order of Eagles Diabetes Research Center. Ankrum earned his B.S.E. from the University of Iowa, an M.Phil. in engineering design from The University of Cambridge and his Ph.D. in medical engineering and medical physics from Harvard-MIT Division of Health Sciences & Technology. His special fields of knowledge are mesenchymal stem cells, drug delivery and biomimicry.

Syden Mubeen Jawahar Hussaini has been appointed assistant professor of chemical and biochemical engineering. He earned his B. Tech in chemical and electrochemical engineering from Central Electrochemical Research Institute, an M.E. in chemical engineering from Birla Institute of Technology and Science and a Ph.D. in chemical and environmental engineering from the University of California-Riverside. His present research interests: synthesis of new class of functional materials and nanostructures including plasmonic materials and devices for development of low-cost, high performance electrochemical energy conversion and storage systems.

Hans Johnson has been appointed associate professor of electrical and computer engineering. He is an alumnus of the University of Iowa and the College of Engineering (B.S.E. 1997 in biomedical engineering, M.S. 2000, Ph.D. 2002 in electrical and computer engineering. His special fields of interest include large scale, heterogeneous, multi-site data collections using modern High Performance Computing (HPC) resources.

Amaury Lendasse has been appointed associate professor in the Department of Mechanical and Industrial Engineering. He holds an M.S. in mechanics, an M.S. in Control and a Ph.D. in Applied Sciences from Université catholique de Louvain, Louvain-la-Neuve, Belgium. His special fields of knowledge include: machine learning, time series prediction, neural networks, environmental modeling, and corporate finance.

Ricardo Mantilla Gutierrez has been appointed assistant professor of civil and environmental engineering and assistant faculty research engineer at IIHR—Hydroscience & Engineering. He earned his B.S. and M.S. from Universidad Nacional de Colombia and his Ph.D. from the University of Colorado Boulder.

Corey Markfort has been appointed assistant professor of civil and environmental engineering and assistant faculty research engineer at IIHR—Hydroscience & Engineering. He earned a B.S. in civil engineering from the University of Evansville, and his M.S. and Ph.D. from the University of Minnesota. His present research interests include: environmental fluid mechanics, turbulence, atmospheric boundary layer, renewable energy and wind engineering, biosphere-atmosphere exchange, hydrology, water resources engineering, air-water and wetland hydrodynamics, earth systems dynamics and change.

Fatima Toor has been appointed assistant professor of electrical engineering and assistant professor of interdisciplinary graduate program in informatics. She earned a double major in physics and engineering science from Smith College, and an M.A. and Ph.D. from Princeton University. Her special fields of knowledge include: semiconductor optoelectronics, electromagnetic theory, solid state physics, quantum optics, nano/micro fabrication.

Kamran Samani has been appointed lecturer in the Department of Mechanical and Industrial Engineering. He earned a B.S., M.S. and Ph.D. in mechanical engineering from Shiraz University and a Ph.D. in mechanical engineering from Iowa State University.
Faculty and Staff Recognized at Awards Ceremony

Faculty and staff excellence awards were presented at a special ceremony on May 15.

David Rethwisch, professor of chemical and biochemical engineering, received the Faculty Excellence Award for Service. Rethwisch has distinguished himself for his service to communities throughout the state through STEM (Science Technology, Engineering and Math) outreach activities. He is the University of Iowa Affiliate Director for Project Lead the Way, and has overseen the growth of the program from 10 high schools in 2005 to 133 high schools and 86 middle schools today. He is also active in collaborations with Community colleges across the state.

George Constantinescu, associate professor of civil and environmental engineering and associate faculty research engineer at IIHR—Hydroscience & Engineering, received the Faculty Excellence Award for Research. He has established himself as one of the world’s leaders in the field of computational fluid mechanics, most notably for his work on the Large Eddy Simulation (LES) model. He is co-author of Large Eddy Simulation in Hydraulics, published in 2013. In recognition of his work, he was awarded the 2013 Arthur Ippen Award by the International Association for Hydro-Environmental Engineering and Research, a top international award in the area of hydraulics for researchers under the age of 45.

James Buchholz, assistant professor of mechanical engineering and assistant faculty research engineer at IIHR—Hydroscience & Engineering, received the Faculty Excellence Award for Teaching. Supporting nomination letters from faculty and students recognized his dedication to teaching excellence and his commitment to improve the student’s academic experience. Passionate about his subject matter and students, he has developed courses and laboratories to best present material.

The Staff Excellence Award for Research was presented to Radoslaw “Radek” Goska, design engineer at IIHR—Hydroscience & Engineering. Goska was recognized for his ability to problem solve, dedication to work, and willingness to stop what he is doing to support students, staff, and others as needed.

Megan Allen, registrar for the College of Engineering, received the Staff Excellence Award for Service. A dedicated staff member, she is readily available to undergraduate students to answer questions or lend a listening ear. Outside of the college, Allen is active in her community and has served on the board of the Highland Community School District. Since 2010, she has been the director of Camp Highland, a summer camp for school-aged children.

The Mary Sheedy Staff Excellence Award was presented to Cathy Kern, secretary in the Department of Electrical and Computer Engineering. Kern was recognized for her dedication to graduate students from the application process to commencement. She is committed to recruiting and retaining minority students and has on several occasions persuaded undecided applicants that Iowa is the place to get a graduate education, and once they arrive, she provides the support needed for their success.

The following staff members celebrated five years of service to the College:

Kandace Munson, April Tippett, Melanie Laverman, Mathew Cover, Christine Jehle, Honghai Zhang, Ben Faga, Natalie Potter, Zhaoyuan Wang and Nathan Young.

Recognition of 10 years of service went to Jenny Simpson, Shawn Allen, Andreas Wahle, Megan Allen, Kelli Delfosse, and Rebecca Whitaker.

Diana Harris, Wendy Brentner, Mary Bender and Richard Hardin were recognized for 15 years of service.

Teresa Gaffey has been with the College for 20 years.

This photo Crystal cube service awards are on display during the May 15 Faculty and Staff Awards Ceremony.

Right, top: Megan Allen, Engineering registrar, displays her Staff Excellence Award for Service.

Right, bottom: Dave Rethwisch, professor of chemical and biochemical engineering, proudly shows of his Faculty Excellence Award for Service.
Avery Bang Honored with UIAA 2014 Distinguished Young Alumni Award

Avery Bang has used her skills to help transform rural communities in underserved nations by building bridges.

Bang began her globally significant work at the University of Iowa where she majored in civil engineering. In addition to working as an undergraduate research assistant at IIHR-Hydrosience & Engineering and as a structural engineering intern, Bang served as president of Engineers for a Sustainable World and as founding president of the UI student chapter of Engineers Without Borders. But it was a study-abroad trip to Fiji that she had a life- and career-changing experience.

The trip inspired Bang to form a branch of the nonprofit organization Bridges to Prosperity to raise funds and then build a bridge in a remote area of Peru. When and her team spent more than two full semesters—and 500 work hours—completing the bridge that enabled residents to access healthcare, education, and jobs on the other side of the river.

After graduation, Bang earned her master’s degree in geotechnical engineering at the University of Colorado at Boulder, conducting her graduate research with Bernard Amadei, an elected member of the U.S. National Academy of Engineering and National Academy of Construction. In 2008, she joined Bridges to Prosperity, eventually becoming the organization’s chief executive officer. Inspired by her passion and drive, the group has built 130 bridges in 14 countries; helped millions of people gain access to vital healthcare, educational, and commercial services; and grown its annual income to more than $2 million.

Bang not only teaches a course at the University of Colorado’s Mortenson Center for Engineering, she also helps researchers and students develop alternative-energy solutions for developing communities. She gave a presentation watched by 2,000 people at TEDx Boulder and has been a keynote speaker at dozens of other conferences and events.

Though she helps solve problems throughout the world, Bang also works to tackle issues at her alma mater as a member of the Civil and Environmental Engineering Advisory Board and the UI College of Liberal Arts and Sciences’ Young Alumni Advisory Board.

Such activism has earned Bang a number of prestigious and highly competitive awards, including being named in 2011 as one of the American Society of Civil Engineers’ New Faces of Civil Engineering, in 2012 as one of the Engineering-News Record’s (ENR) Top 25 Newsmakers, and in 2013 to the ENR Mountain Region’s Top 20 Under 40 list. Bang also earned the recent Distinguished Alumni Award from the UI Alumni Association and the University of Colorado at Boulder. She is a recipient of an honorary degree from Clarkson University.

By using her education, skills, and passion to build bridges throughout the world, Bang is helping countless people in poor communities step into a brighter, more promising future.
Weber Receives Board of Regents Faculty Excellence Award

Larry Weber, Edwin B. Green Chair in Hydraulics in the Department of Civil and Environmental Engineering and director of IIHR-Hydroscience and Engineering, is one of six University of Iowa faculty members who have received the 2014 Regents Award for Faculty Excellence.

Presented by the Iowa Board of Regents, the award honors faculty members for work representing a significant contribution to excellence in public education. Each honoree will receive $1,000.

Weber’s leadership of IIHR has advanced it to even greater prominence, almost doubling its number of graduate students and tripling its grant- and contract-supported research.

Weber has been one of the university leadership’s most important advisors during the campus renewal following the flood of 2008, serving as co-chair of the UI Flood Mitigation Task Force. In 2009 he co-founded the Iowa Flood Center, which has provided superb services to the state to help Iowans prepare for flooding events more effectively. The center has taken on a national profile, sharing valuable knowledge with communities and institutions across the country.

Recently, Weber led a collaborative process that brought the Iowa Geological Survey to IIHR, broadening its research, outreach, and educational programs to cover groundwater to surface water, studying conditions from drought to flood.

Real Property Intelligence Grabs Storer Entrepreneurial Award

The University of Iowa College of Engineering announced that the student business plan for a company named “Real Property Intelligence” is the winner of its 2013-14 Hubert E. Storer Engineering Student Entrepreneurial Start-up Award.

Real Property Intelligence’s flagship product is RP3, or Real Property Probability Prediction. RP3 wraps BIG data, artificial intelligence, and risk analysis into a powerful web interface to revolutionize the multi-billion dollar Automated Valuation Model (AVM) industry. AVM is a mathematical tool that can provide real estate valuations. Lending institutions, investment groups, and other real estate professionals run over one billion AVM’s per month worldwide at a rate of $10-25 per AVM run.

The Real Property Intelligence management team includes Lee Nicholson, CEO; John Nicholson, COO and CTO; and Bailey Smith, CFO. John Nicholson is a PhD candidate in Civil and Environmental Engineering.

The annual award, established in 2002 and funded by an endowed gift from the late College of Engineering alumnus Hubert E. Storer (BSIE 1959), currently provides $7,500 of initial financial support for a College of Engineering student technological business plan. Storer was president, owner and founder of Storer Equipment Company, Shreveport, LA.
Promotions

Pablo Carrica, from assistant professor to associate professor of industrial engineering.

David Cwiertny, from assistant professor to associate professor of civil and environmental engineering.

Jennifer Fiegel, from assistant professor to associate professor of chemical and biochemical engineering.

Mona Garvin, from assistant professor to associate professor of electrical and computer engineering.

Grants, Contracts, Patents

Eight College of Engineering faculty and staff members were recognized for attracting more than $1 million each in research funding during Fiscal Year 2014. They are Karim Abdel Malek, professor of biomedical engineering and director of the Center for Computer-Aided Design; Barry Butler, professor of mechanical and industrial engineering and university executive vice president and provost; Tom Schnell, associate professor of mechanical and industrial engineering and director of the Operator Performance Laboratory; Witold Krajewski, Rose & Joseph Summers Chair in Water Resources Engineering, professor of civil and environmental engineering and director of the Iowa Flood Center at IHRR—Hydroscience & Engineering; Frederick Stern, George D. Ashton Professor of Hydroscience and Engineering, professor of mechanical and industrial engineering, and faculty research engineer at IHHR, $1,994,628; Larry Weber, Edwin B. Green Chair in Water Resources Engineering, professor of civil and environmental engineering and director of IHHR, $1,890,252; Susan Chrysler director of research, National Advanced Driving Simulator, $1,146,100; Ching-Long Lin, professor of mechanical and industrial engineering, faculty research engineer at IHHR, and research at the Iowa Institute for Biomedical Engineering, $1,275,528.

The College of Engineering performed at record levels the past year. The college’s Fiscal Year external funding totaled $32,536,905, a 3.0 percent ($935,085) increase over the Fiscal Year 2013 figure of $31,601,820.

Appointments

Jacquie Albrecht joined the Department of Chemical and Biochemical Engineering as the new department administrator.

Er-Wei Bai, professor of electrical and computer engineering was named departmental executive officer effective July 1, 2014.

Kim Lebeck joined the Department of Civil and Environmental Engineering.

Sarah Lobb, joined the Department of Biomedical Engineering as the new department administrator.

Tonya Peeples, professor of chemical and biochemical engineering, associate dean for diversity and outreach, and researcher at the UI Center for Biocatalysis and Bioprocessing, has been appointed by Iowa Governor Terry Branstad to serve on the Southeast Regional Science, Technology, Engineering, and Math (STEM) Advisory Board, effective July 1, 2014.

Mona Garvin, from assistant professor to associate professor of electrical and computer engineering.

Reeceived an $112,730 subcontract from Caterpillar for “development of high-performance cast crankshafts.”

George Constantinescu, associate professor of civil and environmental engineering and associate research engineer at IHHR—Hydroscience and Engineering was awarded a subcontract in the amount of $159,335 from UChicago Argonne, LLC. He will develop an augmented sediment entrainment rate function for URANS Scour simulations.

David Cwiertny, associate professor of civil and environmental engineering, and associate research engineer at IHHR—Hydroscience & Engineering, received a grant in the amount of $141,308 from the National Science Foundation for “SusChEM: Collaborative Research: development and application of piezoelectric nanoheterostructures to reduce the chemical and energy demand of water treatment.”

Allan Guymon, Sharon K. Tinker Process Safety Professor of Chemical and Biochemical Engineering, professor and departmental executive officer of chemical and biochemical engineering and director of the Photopolymerization Center, received a $309,272 research grant from the National Science Foundation to study the control of photopolymerization kinetics and thermodynamics in self-assembled surfactant systems to direct polymer nanostructure.

Tim Mattes, associate professor of civil and environmental engineering and associate research engineer at IHHR—Hydroscience & Engineering, received a $159,232 research grant from the Army Corps of Engineers. He will conduct validation of biotechnology for quantifying the abundance and activity of vinyl-chloride oxidizers in contaminated groundwater.

Thomas Schnell, associate professor of mechanical and industrial engineering and director of the Operator Performance Laboratory, Center for Computer-Aided Design, received a $247,077 grant from the US Department of Defense, Department of the Navy, Office of Naval Research for “Binocular helmet display for live virtual constructive (LVC) research.”

Gabriele Villarini, assistant professor of civil and environmental engineering and assistant research engineer at IHHR—Hydroscience & Engineering was awarded the National Science Foundation (NSF) Faculty Early Career Development Award (CAREER). The award will bring more than $500,000 in funding to support his project, “Temporal clustering of hydrometeorological extremes” over the next five years.

Recognition

Ryan Adam, graduate student in biomedical engineering, was a North American Cystic Fibrosis Conference Junior Investigator finalist.

Dave Bein, a third-year mechanical engineering major originally from Silvis, Ill., was named the State of Iowa student employee of the year. Bein has worked with the UI College of Engineering’s Center for Computer Aided Design and the Virtual Soldier Research lab since 2011, parlaying his personal experience as a U.S. Marine into his role as resident military advisor. He helped create more than 100 detailed 3D models of Marine Corps weapons and gear, a key component in the lab’s successful bid for a contract to optimize the equipment loads soldiers carry. Bein has traveled to Quantico, Va., to meet with software end users and collect data for Marine equipment and procedures. He is liaison to program managers at the Quantico and coordinates much of the communication between the UI team.
and the base. Bein also was named the UI campus student employee of the year, based on criteria established by the National Student Employment Association. Supervisors nominate students for reliability, quality of work initiative, professionalism, and uniqueness of their contributions.

Mark Christopher, graduate student in biomedical engineering, received the Members-in-Training Outstanding Poster Award in the glaucoma section at the Association for Research in Vision and Ophthalmology 2014 annual meeting.

David Cwiertny, associate professor of civil and environmental engineering and associate research engineer at IIHR—Hydroscience & Engineering, received the Early Career Scholar of the Year Award presented by the UI Office of the Vice President for Research and Development. The award honors a UI faculty member for extraordinary leadership of a large collaborative and interactive team science grant.

Austin Kleinmeyer, a senior mechanical engineering major, was featured in a University of Iowa video that showcases his research at the Operator Performance Laboratory. In this video Kleinmeyer discussed challenges that aren’t always easy to solve, improvising solutions, and developing the skills that will shape his professional career.

Kathryn Langenfeld, civil engineering student, received a $2,500 Stanley Award for International Research. She will travel to Matagalpa, Nicaragua, to assess the feasibility of implementing a river monitoring system.

Hosin (David) Lee, professor of civil and environmental engineering, received an award from the Korean Federation of Science and Technology Societies (KOFST) for his contribution in strengthening the professional network among ethnic Korean Young Generation scientists and engineers and enhancing Korea-US cooperation in science and engineering. Lee was presented the award July 11 by KOFST president Boo-Sup Lee at the Presidents of Ethnic Korean Science and Engineering Association and Young Generation Forum (YGF) with attendees from 17 countries.

Ching-Long Lin, professor of mechanical engineering and research engineer at IIHR—Hydroscience & Engineering, was named a Fellow of the American Society of Mechanical Engineers.

Witold Krajewski, professor of civil and environmental engineering, researcher engineer at IIHR—Hydroscience & Engineering and director of the Iowa Flood Center, received a Leadership in Research Award presented by the UI Office of the Vice President for Research and Development. The award honors a UI faculty member for extraordinary leadership of a large collaborative and interactive team science grant.

Marian Muste was honored with the American Society of Civil Engineers’ Stevens Award for his discussion of “Uncertainty Model for In Situ Quality Control of Stational ADCP Open-Channel Discharge Measurement” in the Journal of Hydraulic Engineering, January 2013.

Three UI College of Engineering students were among 242 national scholars who received national Tau Beta Pi scholarships for the 2014-2015 academic year. They are Allison M. Kindig, industrial engineering; Jocelyn N. Todd, biomedical engineering and Sanam Zarei, biomedical engineering.

Ibrahim Ozbolat, assistant professor of mechanical and industrial engineering and co-director of the Advanced Manufacturing Technology Group in the UI Center for Computer-Aided Design, received the 2014 Chao & Trigger Young Manufacturing Engineer Award from the American Association of Mechanical Engineers. Ozbolat was recognized for this contributions to bio-printing of 3-D tissue and organ manufacturing. Ozbolat will also receive the 2014 Gold Medal from Pi Tau Sigma and the American Society of Mechanical Engineers.

A.N. Thanos Papanicolaou received the Hunter Rouse Hydraulic Engineering Award in recognition of his outstanding research and leadership in sediment transport dynamics and carbon sequestration, from the scale of a turbulent eddy to the scale of an entire watershed.

Priyadarshini Pennathur, assistant professor of industrial engineering, received the Liberty Mutual Medal in Occupational Safety and Ergonomics from the International Ergonomics Association (IEA) for her paper was titled “Technologies in the wild (TiW): human factors implications for patient safety in the cardiovascular operating room.” She will receive a $10,000 award for her research in health care.

Madhavan Raghavan, Robert and Virginia Wheeler Faculty Fellow of Engineering, professor of biomedical engineering, and researcher at the Center for Computer-Aided Design and Iowa Institute for Biomedical Imaging, is the recipient of the 2014 Bioengineering Distinguished Alumni Award from the Swanson School of Engineering at the University of Pittsburgh. Raghavan was also awarded the Fulbright Brazil Scientific Mobility Program Distinguished Chair Award. He will collaborate with Dr. Erasmo Simão da Silva, professor and vascular surgeon at the University of São Paulo, Brazil in spring 2015.

Jerry Schnoor, Allen S. Henry Chair in Engineering, professor of civil and environmental engineering, co-director of the Center for Global and Regional Environmental Research and research engineer at IIHR—Hydroscience & Engineering, was elected to the nomination committee for the National Academy of Engineering.

Sarah Vigmostad, assistant professor of biomedical engineering and assistant research engineer at IIHR—Hydroscience & Engineering, was presented the James N. Murray Faculty Award at the annual Hanche-Finkbine Dinner. The Murray Award is presented to a young faculty member who has demonstrated outstanding rapport with students and who creates an exemplary classroom atmosphere. Vigmostad uses inquiry-based learning to encourage students to ask challenging questions and engage in the process of discovering solutions.

IHR Director Larry Weber and his wife Michelle were recently honored with the Johnson County Heritage Trust Conservation Award for their grassroots conservation efforts.
Send us your personal and professional news.

E-mail
iowa-engineer@uiowa.edu

Mail
The University of Iowa
College of Engineering
3100 Seaman’s Center for the Engineering Arts and Sciences
Iowa City, Iowa
52242-1527

Phone:
319-335-5764

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Retirements
K.B. Chandran, professor of biomedical engineering.

Judith Holland, civil and environmental engineering.

Peter O’Grady, professor of industrial engineering.

Linda Wheatley, department administrator, chemical and bio-chemical engineering.

1960’s
Jon Reimer (BSChE 1968) was inducted August 29 into the National Iowa Varsity Club’s Athletics Hall of Fame. Reimer is an all-American in the 440-yard hurdles and mile relay, and a four-time Big Ten champion. He set both the NCAA and Big Ten mild relay records in 1967, and still holds the conference record in the 330-yard hurdles.

1970’s
Larry Vargus (BSME 1972) and his wife, Helen, of Sherman, TX, visited the College of Engineering April 3. It was Vargus’ first trip back to the college since graduation.

1980’s
Nicholas Bloom (BSE 1988), Jim Doty (MS 1994), and Scott Zogg (MS 1988) were named Fellows in the inaugural class of Fellows and Senior Fellows who have set a standard for technical excellence at Rockwell Collins, Inc., Cedar Rapids, IA. They were among 26 individuals were selected for being pioneers in their fields and for their contributions to the aviation and defense industry.

Greg Kirsch (BSE 1987), partner and head of the intellectual property practice of Smith Gambrell & Russell, was named to the 2014 Georgia Super Lawyers list.

Scott A. Spear (BSE 1986) has been named executive vice president and chief strategy officer of Amplifi Commerce, Dallas, TX.

1990’s
Brett H. Kessler (BSE 1991) has been named president of the Colorado Dental Association (CDA).

Matahel Ansar (MS 1993, PhD 1997) is a senior engineer with South Florida Water Management District.

2000’s
Amy Ashbacker (BA 2000, MS 2005) is a senior project engineer with ITC Transmission.

Avery Bang (BSE 2007, BA 2007), CEO of Bridges to Prosperity, received the Engineering Recent Alumni Award from the University of Colorado Boulder.

Josh Gersten (BSE 2004) was featured in a recent KCRG-TV story about citizens who volunteered with the Johnson County Sheriff’s Department. Gersten, full-time manager of warehouse operations at Integrated DNA Technologies, works 3-4 shifts a month for the county.

Nathan Horn (BSE 2002, MS 2004), presented the Mechanical and Industrial Engineering “Grabbing the Globe” lecture on April 24. The title of his presentation was, “Computer Aided Engineering in Racing.” Horn is associated with Vehicle Dynamics Engineer at Chip Ganassi Racing with Felix Sabates. He is a lead engineer in a group that develops simulations for use by race, performance, vehicle dynamics, and design engineers. The majority of his time is devoted to using various pieces of software to develop simulations. His specialties include creating kinematic models of mechanisms and vehicle dynamics simulations; validating and trouble-shooting solid mechanics simulations using physical data; and developing simulation methods for other non-standard components.

Benjamin Ratcliff (BSE 2003) is director of strategic sales at Opower, San Francisco.

Nicole Schimpf (BSE 2007, MS 2009) is vice president and senior engineer, Caulfield Engineering, Naperville, IL.

Publications
Hans Albert Einstein: His Life as a Pioneering Engineer, written by Robert Ettema, a professor at the University of Wyoming, and Cornelia F. Mutel, senior science writer at IIHR—Hydroscience & Engineering. The book is published by the ASCE Press.

Engineering Professional Development has published a new brochure, “Our Engineers—Your Success. Putting Iowa’s Engineering to Work for You,” that illustrates the various services available to employers who are interested in hiring UI engineering students and graduates for co-ops, internships, and full-time positions.

Check out all of the latest College of Engineering electronic publications at: http://www.engineering.uiowa.edu/research/centers-institutes/electronic-publications-library

Presentations
Ralph Stephens, professor emeritus of mechanical and industrial engineering, presented the keynote lecture June 24 at the 2014 Fe-Safe Technology User Conference in Troy, MI. The title of his presentation is “A Half Century History of Fatigue and Fracture Mechanics.”
Oasis Falafel, owned by alumnus **Ofer Sivan** (BSE 2003) was named to the *Corridor Business Journal’s* 2014 Fastest Growing Companies list.

**Ori Sivan** (BSE 2004), senior associate at Alvarez & Marsal, Miami, earned his MBA from University of Florida – Warrington College of Business in May 2014.

**Kristopher Thornburg** (BSE 2005, MS 2006, PhD 2010) is an adjunct faculty member, Military Education Department at Vincennes University.

### 2010’s

**Ryan Anderson** (BSE 2013) is a control systems engineer with The ESCO Group, Marion, IA.

**Frank Attere** (BSE 2011) industrial engineering works for Accelerated Cooking Products, Cedar Rapids, IA.

**Alyxandra Averkamp** (BSE 2013) is a supply chain analyst with HNI Corporation, Muscatine.

**Elizabeth Anne Campbell** (BSE 2012) was awarded a 2014 National Science Foundation (NSF) Graduate Fellowship Award to pursue graduate studies at Georgia Institute of Technology.

**Kirk Cheyney** (BSE 2011), has opened the S.T.E.A.M. Room Fab Lab in Iowa City. Modeled after the Fabrication Laboratory model developed by MIT, it offers classes in electronics, programming, robotics and digital fabrication. Tools available include a 3D Carving machine, 3D printers, a full wood shop, metal shop, welding equipment and more.

**Rachel (Crome) Hahn** (BSE 2011) is maintenance and reliability training coordinator for General Mills, Cedar Rapids, IA. She was featured at the University of Iowa booth at the Iowa State Fair.

**Kelsey Kaufman** (BSE 2013, MS 2014) is employed with Raytheon Integrated Systems.

**Zac L. Latcham** (BSE 2012), is a medical device reporting specialist at Medtronic in Minneapolis.

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### Future Alumni

**Karsten Temme** (BSE 2002, MS 2004) and Lauren Lasak-Temme welcomed Bennett Anthony Temme on August 7, 2014.

**Katie Coates Selburg** (BSE 2003) and Michael Selburg welcomed Henry Michael Selburg on July 28, 2014.

**Amy McQueen Hruska** (BSE 2006) and **Chris Hruska** (BSE 2001) welcomed Isabella “Izzy” Josephine Hruska on October 9, 2013.

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### In Memoriam

#### 1930’s


#### 1940’s

**Herbert D. Grove, Jr.** (BSChE 1944, MS 1948, PhD 1949) of Austin, TX, May 13, 2014.

**George Francis Farrell** (BSE 1948) of Columbus, OH, June 7, 2014.

**D. Duane Hansen** (BSChE 1940) of Memphis, TN, July 2, 2014.

**John T. Hogle** (BSME 1947) of Fayetteville, AR, April 15, 2014

**Dwayne L. Mozev** (BSME 1954) of Albuquerque, NM, June 1, 2014.


**W. Lowell Quirk** (BSEE 1944) of Rochester, MN, June 27, 2014.

**Gail Lockerby Shaw** (MS 1941) of Chehalis, WA, June 6, 2014.

**Thomas M. Shoemaker** (BSE 1943) of Mason City, IA, April 6, 2014.

**Harry Zweifel** (BSChE 1940) of Richland, WA, April 15, 2014.

#### 1950’s

**Donald Arthur Adams, Sr.** (BSChE 1950) of Wenonah, NJ, April 14, 2014.


**D.T. Lundy** (BSChE 1951) of La Grange Park, IL, July 1, 2014

**Henry Maksoud** (MS 1954) of Sao Paulo, Brazil, April 17, 2014.

**John L. McComas** (BSE 1958, MS 1959) of Kokomo, IN, May 28, 2014.


**Robert M. Scanlon** (BSE 1958) of Fayetteville, NY, April 26, 2014


#### 1960’s


**Thomas C. Patrick** (BSChE 1965) of La Crosse, WI, March 11, 2014


#### 1970’s

**Henry Maksoud** (MS 1971, PhD 1975) of Cedar Rapids, IA, July 28, 2014.

**Wojciech Kornaga** (BSE 1972) of Mason City, IA, April 6, 2014.


**Leo J. Haman** (BSE 1984) of Cedar Rapids, IA, July 29, 2014.


#### 1980’s


#### 1990’s

**Phillip A. Frystak** (BSE 2009) of Ames, IA, June 18, 2014.

**Wojciech Kornaga** (BSE 2004) of Morrisville, NC, April 24, 2014.
The 2014 version of the famous Engineering Corn Monument was on display on the west side of the Pentacrest during Homecoming. Created by the student chapter of the American Society of Civil Engineers, the monument—made of hundreds of ears of Iowa corn—provided an excellent photo opportunity for the Homecoming crowd. This time-lapse photo was taken by Ching-Long Lin, professor of mechanical and industrial engineering, as he captured the corn monument, medical campus tower, and the moon.