Faces, places and changes of 2014
Dear Alumni and Friends,

2014 was a busy year for the department. Our centennial celebrations continued throughout last spring. I was hoping to keep the centennial banners up on the building and just update the number each year...101, 102, etc., but the folks in facilities vetoed that idea. I feel a bit sad that all the centennial events are now behind us, but it was a delight to be a part of it and meet so many wonderful alumni and friends as we celebrated 100 years of chemical engineering at Iowa State.

Our newsletter is coming out a bit later than usual this time, but thanks to the recent hiring of a new communications specialist in John Burnett-Larkins (pg. 13), it is now in your hands instead of still sitting on my desk. We have several other new faces in the department. Kathy McKown joined us as fiscal officer and Bellinda Hegelheimer as assistant for our graduate program (pg.13). We are also delighted to introduce three new faculty members who joined us last fall: Matthew Panthani, Wenzhen Li, and Yue Wu (pg. 5). They are bringing us exciting new research activities, teaching expertise, and energy. We have also said goodbye to several long time staff members (pg. 13) and faculty, including Pete Reilly, who retired in the spring of 2014 (pg. 19).

We continue to be very proud of our faculty and their successes (pp. 6-8). Laura Jarboe, the Karen and Denny Vaughn Faculty Fellow, was promoted to associate professor with tenure. Senior Lecturer Stephanie Loveland was awarded the Superior Engineering Teaching Award. Surya Mallapragada, former department chair and the Stanley Chair in Interdisciplinary Engineering, won the D.R. Boylan Eminent Faculty Award for Research. Several of our faculty members are leading exciting new research and educational ventures, including Eric Cochran’s work developing polymers from biorenewable feedstocks (pg. 7) and Balaji Narasimhan’s leadership of a Presidential Initiative that is developing new nanovaccines (pg.8).

The department is also delighted to celebrate in some of the accomplishments of our alumni (pp. 9-10). Once again, CBE made a strong showing among ISU awards, including the much deserved Order of the Knoll Campanile Award to Mike (B.S. ChE ’59) and Jean (B.S. Zool ’60) Steffenson, a Professional Achievement Citation in Engineering (PACE) award to John Kaiser (M.S. ChE ’87), and the Anson Marston Medal to Dale Fridley (B.S. ChE ’58). We also welcome two new members to the CBE Hall of Fame this year with Dr. Joe Cunning (Ph.D. ChE ’65) and Dr. Judson M. Harper (B.S. ChE ’58, M.S. and Ph.D. Food Tech ’60 and ’63). Dr. W. Mark Saltzman (B.S. ChE ’81) who won the 2013 PACE award, was elected into the Institute of Medicine, which is the health arm of the National Academy of Sciences. Congratulations all! Read more about these award winners and about other CBE alumni who are succeeding in graduate school, academics, and industry. Our advisory council continues to be an active and vital group of alumni. This year we see the departure of two long-serving members and the addition of four new faces (pg.12). Thanks to all of you for your commitment and service.

The theme for this year’s newsletter is “faces, places and changes of 2014.” It has indeed been an eventful year. We continue to see unprecedented enrollment growth in the department. Thanks to our largest freshman class ever (at nearly 220 students) our undergraduate enrollment is now just a few shy of 800 students. Our graduate population is increasing also, with nearly 70 M.S. and Ph.D. students in chemical engineering. This growth is exciting as it reflects the quality, desirability, and affordability of our program. These numbers, as well as other departmental metrics, are highlighted in our “By The Numbers” summary (pg.4).

The tremendous support we receive from our alumni impacts so many things that makes CBE at ISU a special place to work and learn. It has allowed us to renovate and add new facilities including the Mike and Jean Steffenson Student Services Center (pg. 18) and our Reginald R. and Jameson A. Baxter Computing and Collaboration Lab (pg. 11). Alumni giving allows us to support the research and teaching efforts of our new faculty, equip their research labs, and support them as they strive to bring in external funding to finance their research endeavors. As noted on our “By The Numbers” page, last year the department was able to provide over $105,000 in graduate fellowships and nearly $370,000 in undergraduate scholarships, the majority of which came from alumni giving. Our 2014 graduate fellowship awardees can be seen on pg.16, and a listing of our scholarship winners is given on pp. 20-21. Thanks to all of you who have contributed this year (pp. 22-23) and have given previously.

Let me conclude with a brief synopsis of one of the more memorable, and also harrowing, events of 2014. Early in the morning (around 5:30 a.m.) on May 30, 2014, I was sitting at my kitchen table at home enjoying a cup of coffee, when the phone rang. Let’s just say that my plans for the day (and the rest of the summer) were about to take a dramatic turn. On the line was an officer from the ISU police who said, “Dr. Hillier, Sweeney Hall is on fire.” I hopped up, jumped in my car, and rushed down to campus. Much of the rest of the story is highlighted on pg.17. Thankfully, no one was hurt and the extent of structural damage to the building was small. However, a fire on the roof, right near the air handling systems, makes quite a mess in the rooms below. Much of the 1994 wing of Sweeney Hall, which contains research labs, faculty and graduate student offices, and our undergraduate teaching labs, received a significant amount of water and a thick coating of heavy, black soot. Quite a number of the faculty, staff, and graduate students spent much of the summer helping to “right the ship.” Things were nearly back to normal by the time classes began again in August. I am thankful to have that episode behind us, and look forward to a “fire-free” 2015.

My best wishes to all of you for a happy, healthy and productive 2015. I hope you enjoy reading our belated 2014 version of ActiveSite. Please send me any comments or suggestions you have for future issues of our newsletter, or just to say hello. I would be delighted to hear from you. Go Cyclones!

Andrew C. Hillier
Wilkinson Professor and Chair
Department of Chemical and Biological Engineering
The generosity of Reginald and Jameson Baxter, strong supporters of Iowa State, makes CBE’s new Baxter Computing and Collaboration Lab possible. This major asset to CBE students is now open.

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CBE students and staff enjoy the new Mike & Jean Steffenson Student Services Center, another significant addition to Sweeney Hall, made by possible by a generous donation.

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Flames erupt at Sweeney Hall in a blaze that results in significant soot and water damage to the interior of CBE’s home.

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CBE’s Cochran is a key partner in constructing a bio-based polymers pilot plant.

Page 7

CBE professor Balaji Narasimhan, with the help of a scientific “dream team,” works to develop nanovaccines to fight disease.

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Two new members are inducted into the CBE Alumni Hall of Fame

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The CBE Advisory Council welcomes four new members.

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Andrew C. Hillier
Wilkinson Professor and Chair, Department of Chemical and Biological Engineering

John Burnett-Larkins
CBE Communication Specialist

Jessica Strawn
College of Engineering Communication Specialist

www.CBE.iastate.edu

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Facilities
Sweeney Hall:
- 42,721 sq. ft. total space
- 17,926 sq. ft. research labs
- 9,160 sq. ft. teaching space
- 1,044 sq. ft. computer labs
- 8,948 sq. ft. office space
- 1,615 sq. ft. conference space
Center for Biorenewable Chemicals (CBiRC):
- 18,853 sq. ft. (research labs and office space)

Enrollment (Fall 2014)
- Undergraduate: 794
- Graduate: 69

Scholastic Achievement
- Avg. comp. ACT Score (undergrad): 28
- Avg. GRE Score (graduate)
  - Verbal: 153 (out of 170)
  - Quantitative: 159 (out of 170)
  - Analytical: 3.71 (out of 6)

Degrees Awarded (2013-14 academic year)
- B.S.: 103
- M.S. & M.E.: 4
- Ph.D.: 13

Department Faculty
- 10 Professors
- 6 Associate Professors
- 5 Assistant Professors
- 2 Adjunct Professors
- 3 Senior Lecturers
- 1 Distinguished Professor
- 2 University Professors
- 1 Endowed Chair Holder
- 7 Endowed Professorships
- 3 Faculty Fellowships

Research
- Direct Research Expenditures: $8.85M (FY 2014)
- New Research Awards, FY 2014+FY 2015, to date: $2,417,902
- Referred Journal Publications: 134
- Invited Presentations: 59
- Contributed Presentations: 88

Scholarships & Fellowships
- Undergraduate scholarships (awarded in 2013-14): $369,000
- Graduate fellowships: $105,846

Rankings
(U.S. News & World Report)
- Undergraduate: 15th public, 22nd overall
- Graduate: 20th public, 31st overall
  (of 126 programs nationally)
Applying nanomaterials to solar technology

While he was earning his Ph.D., Matthew Panthani found a new way to use spray paint—to advance solar cell research.

Panthani, who is now the Herbert L. Stiles Faculty Fellow in Chemical Engineering at Iowa State, attended the University of Texas at Austin for his Ph.D. in chemical engineering. Initially interested in nanomaterials, his adviser encouraged him to join a new project researching solar cells.

Solar cells, which are traditionally made from silicon, are an expensive renewable energy technology. “Silicon is great for a lot of applications, but if you want solar energy to be really widespread, you need to reduce the cost. So we are trying to make inexpensive solar cells using solution-based nanomaterials,” he said.

Panthani says solution-based nanomaterials are created during a chemical reaction in a beaker. The reaction, he explains, creates a stable “ink” of nanomaterials that could allow for inexpensive and rapid printing of solar cells compared to the slow, energy-intensive process used for silicon. Formerly a postdoctoral researcher, he says being a professor offers a rewarding career. “I have the opportunity to do things that are on the cutting edge of technology and fundamental science. I also get to teach, so that’s something that I’m looking forward to here.”

An interest in fuel cells and spreading knowledge

With parents who are a zeolite expert and a laser engineer, Wenzhen Li, CBE’s Richard Seagrave Associate Professor of Engineering, has been interested in research from a young age.

Unlike his parents, however, Li’s top research focus is how to advance biorenewable-powered fuel cells. Traditional fuel cells use hydrogen to deliver electrical energy, but Li plans to convert chemical energy in biorenewable fuels into electricity and chemicals via fuel cells. His work has been heavily cited by fuel cell and electrocatalysis researchers.

His interest in fuel cells came after learning more about using biomass to generate electricity. He said, “I think energy is very important to our modern society. We cannot only rely on nonrenewable fossil fuels and resources.” In the future, Li wants to see at least one of his discoveries from his lab in use in real-world products.

Prior to Iowa State University, Li was an associate professor of chemical engineering at Michigan Technological University. Li likes teaching chemical reaction engineering class for undergraduates and graduates because it’s very close to, and able to stimulate, his research.

Passing on knowledge to students is also gratifying for Li. “I am happy to see students learn classic kinetics knowledge and modern tools for chemical reactions from a senior chemical engineer, to see the important knowledge pass to the next generation of chemical engineers.”

Ignited by a passion in chemistry and nanomaterials

When Yue Wu was younger, he started a small fire on his apartment balcony, creating a spark in chemistry and research that has been burning since.

Wu has joined Iowa State as the Herbert Stiles Associate Professor of Chemical and Biological Engineering, and enjoys working with other faculty on a variety of projects. Prior to Iowa State, Wu was a tenured associate professor at Purdue University’s School of Chemical Engineering.

His research focuses on nanomaterials, which are nanometer-sized materials that exhibit unusual electrical properties compared to the regular sized material. Nanomaterials also have unique characteristics, such as significantly decreased thermal conductivity.

Wu breaks up his research into two goals: The first involves creating new semiconductor nanomaterials and molecules to convert waste heat into electricity (to reduce waste); and energy storage, specifically creating nanoparticles that can be used for advanced batteries. Wu explains that the anode electrode in a typical cell phone battery is made from graphite, which can be charged over and over. However, the capacity of the battery is fairly low.

“The material we have developed for the advanced battery has very high capacity, almost four to five times higher capacity than graphite. We actually can do a very fast charging/discharging,” he said, adding that the battery could be charged within four minutes.
Stephanie Loveland

Stephanie Loveland, senior lecturer, received the Iowa State University Superior Engineering Teaching Award in fall 2014. This award recognizes an engineering college faculty member for superior performance in undergraduate, graduate or extension teaching. Loveland oversees the undergraduate teaching labs, and she serves as the lab safety officer and chair of the safety committee for the department.

Qun Wang

Qun Wang, an adjunct assistant professor in CBE, received two awards to help establish the scientific foundation of intestinal stem cells (ISCs) research and change how ISCs are used in translational therapy for intestinal disorders. The first award is the Cyclone Research Partnership Award, which will support research that aims to characterize how various types of nanoparticles are transported across intestinal tissues grown from ISCs. The findings can help develop better drug/vaccine oral delivery systems. Wang was also selected for the McGee-Wagner Interdisciplinary Research Award to explore ways to reduce chronic intestinal inflammation through the use of ISCs.

James Hill

James Hill has been involved in several research projects recently, including analyzing the turbulent flow in a vortex reactor using stereoscopic particle-image velocimetry. Hill also serves as member of the governing board of the Council for Chemical Research and chair of the Fellows Council of AIChE. As chair, he organized a session at the AIChE annual meeting in San Francisco, prompting an NSF-funded workshop about the shift in faculty expertise in ChE departments.

Brent Shanks

Brent Shanks is a co-founder of Glucan Biorenewables, LLC, which received a SBIR (Small Business Innovation Research) Phase I grant as well as signed a joint development agreement with a major multinational chemical company. Shanks also served as a session leader for the DOE-BER Bioenergy Workshop in June 2014, and he was invited to speak to the Biomass Research and Development Technical Advisory Committee (DOE/USDA) in August 2014.

Laura Jarboe

Laura Jarboe was recently promoted from assistant to associate professor of chemical and biological engineering. Her research focuses on improving biorenewable fuel and chemical production through microbial biocatalysts. Jarboe also serves as faculty at the National Science Foundation Engineering Research Center for Biorenewable Chemicals (CBiRC).

Robert Brown

Anson Marston Distinguished Professor Robert Brown has been awarded patents for two new technologies. The first is a process for recovering bio-oil from the pyrolysis of biomass as fractions, increasing its usefulness in fuel manufacturing and other biobased products. The second technology uses one of the bio-oil fractions to produce an asphalt substitute from biomass, which is currently manufactured from petroleum. Brown serves as Gary and Donna Hoover Chair in Mechanical Engineering, director of Iowa State’s Bioeconomy Institute, and professor of chemical and biological engineering and of agricultural and biosystems engineering.

Surya Mallapragada

Surya Mallapragada was awarded the D.R. Boylan Eminent Faculty Award for Research from the College of Engineering for her academic excellence in research and exemplary contributions to understanding in a field of specialization. She researches smart polymeric biomaterials and bioinspired nanocomposites, as well as neural tissue engineering. Mallapragada serves as Stanley Chair in Interdisciplinary Engineering and professor of chemical and biological engineering.
Eric Cochran

Eric Cochran, associate professor of chemical and biological engineering, is working to make the future of pavement more sustainable by using biorenewable material.

His research involves scaling-up and commercializing Iowa State University patent-pending elastomeric materials using vegetable oils and other biorenewable feedstocks that can be used for a variety of applications.

In this case, he's teaming up with ISU civil engineering professor R. Chris Williams, who started a project in 2010 to create a biobased pavement using oils from the fast pyrolysis of biomass. Cochran's elastomeric materials are being used to help create a high-performance asphalt modifier made from biorenewable polymers.

He says the work is important from a number of perspectives, especially economically. “The materials we are making are cost competitive with petrochemical counterparts, and the feedstock materials are domestically sourced and could be produced anywhere in the country.”

In the future, Cochran plans to continue working with biorenewable polymers, as he believes there is a lot of opportunity to reinvent the field. Historically, many polymers were developed in the early 1900s, but now, very few oil-based polymers are discovered.

Cochran believes his research could change the field. “I saw a chemical process for dealing with biobased feedstocks that the rest of the community had overlooked. There was a great opportunity to be the first person to incorporate new feedstocks into high-performance formulations, such as block copolymers, that had not yet been accessible to the bioplastics field.”

Cochran's research is funded by a number of grants, each using his knowledge to meet certain demands. The USDA is working with Cochran to develop polymers that can be used as adhesives, including rubber cements, pressure sensitive adhesives and structural adhesives. The Regents’ Innovation Fund is supporting efforts to combine Cochran's process for polymerizing vegetable oils with other commercial processes; this work will greatly accelerate the rate at which the biopolymers can be developed to a 100,000 kiloton per year facility at full commercial scale.

Finally, Cochran is working with industry partners on research to be performed at the BioCentury Research Farm, in a new $5 million biopolymer demonstration facility that will produce up to 500 kilograms of polymers daily for an asphalt modifier.

In addition to research, Cochran also teaches several chemical engineering classes, including computational methods for chemical engineers, chemical engineering for thermodynamics, heat and mass transport, and polymers and polymer engineering.

In a partnership between Iowa State University’s Chemical and Biological Engineering (CBE) and Civil, Construction and Environmental Engineering (CCEE) Departments, an industrial scale pilot plant for bio-based polymers derived from vegetable oils has taken shape at ISU’s BioCentury Research Farm. Eric Cochran, CBE associate professor, teamed with CCEE’s Gerald and Audrey Olson Professor of Engineering R. Chris Williams to develop the plant, which is located on Iowa State University property between Ames and Boone.
Narasimhan, “Dream Team” battle disease with development of nanovaccines

With new diseases, the return of old diseases and disease epidemics all seeing a significant rise worldwide, the fight against them has become a significant battle; and an Iowa State Chemical and Biological Engineering professor is leading a group ready to charge into that battle, armed with new tools and a new philosophy.

Vlasta Klma Balloun Professor Balaji Narasimhan is heading up a project that is developing nanovaccines – with the goal of one day establishing a national nanovaccine research center. “The diseases we have vaccines for today are the low-hanging fruit. And so people get sick,” said Narasimhan. “But we can’t just keep treating these new and re-emerging diseases. That’s too expensive. We have to prevent them.” Nanovaccines are based on that very principle – that disease should be prevented from ever taking hold in the first place. They are based on tiny particles that can send pathogen-like signals to immune cells. They can boost a person’s immune system response to diseases and can therefore prevent disease.

Narasimhan has put together a broad team of university, medical school, research hospital, national laboratory and industry researchers to design nanovaccines that target such diseases as tuberculosis, malaria, biodefense pathogens and cancer. “This is truly one of the dream teams working on vaccine research anywhere in the world,” said Narasimhan.

The team’s research plans received a three-year $4.5 million grant from Iowa State’s Presidential Initiative for Interdisciplinary Research. University President Steven Leath established the initiative to build research teams capable of competing for large research grants and making major discoveries. Narasimhan’s group includes 21 researchers from Iowa State, along with officials from the National Animal Disease Center, NewLink Genetics Corp. and PK Biosciences Corp.

Working closely with the Iowa State College of Veterinary Medicine, the staff and students in Narasimhan’s lab are producing biodegradable polymer nanoparticles that mimic the size and chemistry of pathogens to trigger appropriate immune responses in the body. Nanoparticles can also be loaded with medicines and used to slowly deliver drugs to fight off diseases such as brain ailments, lung problems and cancer.

Robert “Bob” Cooper, oldest living CBE alum, passes away at age 96

Robert Hamilton “Bob” Cooper (BS, ChE ’39), the oldest living alumnus of the Iowa State University Chemical and Biological Engineering Department, passed away November 8, 2014 in Corpus Christi, Texas at the age of 96.

Bob was born in Boone, Iowa in 1917 and completed his degree in chemical engineering at Iowa State in 1939. While enrolled at Iowa State he was active with the student branch of AIChE and was a member of Sigma Alpha Epsilon fraternity.

Cooper was active in the American Society of Chemical Engineers and became a fellow in that organization, a distinct honor. In the 1960s Cooper was instrumental in establishing the Iowa Section of the American Institute of Chemical Engineers, and was an early chair of the Iowa Section.

In May of 2014 he attended his 75th graduation reunion at Iowa State.

Dr. George Burnet, Anson Marston Distinguished Professor Emeritus in CBE, said Cooper’s daughter played a significant role in getting her father here for the reunion activities, “because it’s something he had always wanted to do for some time and his daughter badly wanted to make it possible.”
**Ganesh Sriram (Ph.D. ChE ’04)**

Ganesh Sriram was promoted to the rank of Associate Professor with tenure in the Department of Chemical and Molecular Engineering, A. James Clark School of Engineering, at the University of Maryland. Sriram, who joined the department in 2008, is director of the school’s Metabolic Engineering Laboratory, which specializes in systems biology, metabolic flux analysis and gene regulatory network analysis, especially of eukaryotes.

The group’s work has many potential applications in commodity fields such as food, fiber, therapeutics, and renewable feedstocks, with an emphasis on sustainable resources.

Among many accomplishments at the Clark School are leading a collaboration to investigate carbon-concentrating mechanisms that make algal photosynthesis more efficient; being part of a collaboration that received a $3.2 million grant from the NSF to engineer popular trees into high-yield crops for biofuels; acting as the co-PI on a project that received a $1.9 million grant from the NSF to acquire a superconducting nuclear magnetic resonance (NMR) spectrometer for solving complex problems in biology and medicine; being named the 2011 Maryland Outstanding Young Engineer by the Maryland Science Center; and editing a book on plant metabolism. He is a Keystone Professor in the Clark School’s program of excellence in early engineering education and part of efforts to improve student retention.

After earning bachelor's and master's degrees in chemical engineering from the Indian Institute of Technology, Bombay, he earned his Ph.D. at Iowa State, working in the lab of Dr. Jacqueline Shanks.

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**John Kaiser (M.S. ChE ’87)**

John Kaiser received a 2014 Professional Achievement Citation in Engineering (PACE) award from the College of Engineering. The PACE award recognizes Kaiser’s superior and eminent technical and professional achievements and creativity. Kaiser is the global director of cocoa and chocolate process technology for Mars Chocolate, the leading chocolate manufacturer in the world. He leads a global, multi-cultural science and technology team, has produced 13 U.S. patents, and is the recognized subject matter expert for chocolate making within Mars.

**Mike (B.S.ChE ’59) and Jean (B.S.Zool ’60) Steffenson**

Mike and Jean Steffenson received the 2014 Order of the Knoll Campanile Award from the ISU Foundation. This award is the most prestigious for lifetime giving, recognizing the extraordinary, long-time support of an individual or couple who have had a significant and inspiring impact on Iowa State University. The Steffensons have extensively supported multiple facets of the university for decades, including the Mike and Jean Steffenson Professorship, the James L. and Katherine S. Melsa Professor of the College of Engineering, and the Sweeney Hall Renovation Fund, as well as scholarship support. They are members of the Cyclone Club, the Order of the Knoll, and life members of the Alumni Association, and have served as Iowa State University Foundation Governors since 1992. Read more about CBE’s Mike and Jean Steffenson Student Services Center on page 18.

**W. Mark Saltzman (B.S.ChE ’81)**

W. Mark Saltzman was recently elected to the Institute of Medicine, the health arm of the National Academy of Sciences. He was one of 70 new members and 10 foreign associates recognized for outstanding professional achievement and commitment to service. Saltzman works as a professor at Yale, serving as Goizueta Foundation Professor of Biomedical Engineering in the chemical and environmental engineering and physiology department. After getting his undergraduate degree at Iowa State, he attended Massachusetts Institute of Technology (S.M.) and Harvard (Ph.D.).

Saltzman’s research focuses on creating safer and more effective medical and surgical therapy, specifically by inventing new methods for tissue engineering and drug-delivery. He has garnered more than 250 research papers, three textbooks, two edited books and 15 patents. He was awarded the Professional Achievement Citation in Engineering from Iowa State’s College of Engineering in 2013. The Institute of Medicine, which now has a total of 2,012 members, is both an honor organization and an advisory organization. Members of the institute are expected to volunteer on boards, committees and work on special projects. Being elected to the organization is considered one of the highest honors in the fields of health and medicine.
Luke Roling: Pursuing opportunities in chemical engineering

When Luke Roling, 2011 alumnus in chemical engineering, came to Iowa State for a campus tour in high school, he loved everything—from the green space to the College of Engineering’s excellent reputation. His mind was made up instantly as to where he would graduate.

His choice of major an easy one as well. He was always good at math and chemistry, making chemical engineering a natural fit. As he furthered his education, his decision was confirmed. “I realized how many opportunities are available in this field,” he said.

Outside the classroom, Roling was active in the Honors Program, Engineering Student Council and Freshman Leaders in Engineering. He adds that he’s still in contact with many of his friends from these groups today.

Roling also participated in the Government of the Student Body, serving as president during the 2010-2011 term. He says his time in office taught him many things about university administration and things not typically seen as an undergraduate student.

This knowledge, as well as the tough coursework in the chemical and biological engineering department, prepared him for his next adventure—earning his Ph.D. in chemical engineering at the University of Wisconsin-Madison. His research focuses on making fuel cells more viable for mainstream applications.

Roling graduates in 2016 and plans to teach and research at a university in the future. He added, “I would love to return to Iowa State!”

CBE Alumni Hall of Fame: Dr. Joe Cunning and Judson Harper

The CBE department inducted two new members into the CBE Alumni Hall of Fame, honoring their valuable contributions to the profession.

Energy and vision capture the essence of Dr. Joe D. Cunning’s career and commitment to exploratory, long-range fiber research. Cunning spent 28 years with DuPont, where he held worldwide responsibility for non-woven products; he also formed a consulting firm for the textiles research and development community in 1991.

Cunning graduated from Iowa State’s chemical engineering program with his Ph.D. in 1965. He continues his connection with Iowa State, from being awarded the College of Engineering’s Professional Achievement Citation in Engineering to serving on the Iowa State University Foundation’s Board of Governors.

Judson M. Harper completed all of his degrees at Iowa State, graduating with a B.S. in ChE in 1958 and an M.S. and Ph.D. in Food Technology in 1960 and 1963, respectively. He worked six years for General Mills before joining Colorado State University in 1970.

Colorado State honored Harper in 2002, when he was designated Emeritus Professor of Chemical and Biological Engineering. Harper retired from the university in 2004. During his time at CSU, he served as faculty and head of Agricultural Engineering. He then became Vice President of Research, where he oversaw 20 years of significant expansion in the university’s research programs. He was also interim president from 1998-99. Harper is an expert in the extrusion processing of foods, and he has authored two books, extensively published and internationally consulted on the subject.

Dr. Joe Cunning

Judson Harper

Dale Fridley (BSChE ’58)

Dale Fridley, retired technology vice president of basic chemicals and intermediates for ExxonMobil Chemical Company, received the Anson Marston Medal from the College of Engineering in 2014. The Marston Medal recognizes Fridley for outstanding achievement in advancing engineering science, technology or policy having national and international impact.

Fridley began his career at ExxonMobil as a technical support and operating supervisor and rose through the ranks to positions including refinery technical manager, feedstock and fuels manager, high-density polyethylene venture executive, and technology manager. During his tenure ExxonMobil grew into one of the largest and most profitable international chemical companies and became an industry leader in applying technical improvements and in integrating chemicals and refinery operations. At retirement Fridley managed almost 50 percent of ExxonMobil’s technology activities.

He received a PACE Award from Iowa State’s College of Engineering in 1994 as well as a proclamation and plaque from the mayor of Baton Rouge, LA for his contributions to the community. He was also an inductee in the Chemical and Biological Engineering Centennial Hall of Fame in 2013. Upon his retirement ExxonMobil named a street at a Baytown, TX complex “Fridley Drive.”
Reginald and Jamie Baxter: Acknowledging and supporting educational institutions

After Reginald Baxter graduated from the University of Arkansas with his undergraduate degree in 1948, getting a master's in chemical engineering was next on his to-do list. So, he began looking at the top chemical engineering universities in the country to find the right one to attend. He discovered what he was looking for at Iowa State and wrote to the head of the chemical engineering department, Grover Bridger, to inquire about the program and learn about available fellowships. Bridger promptly wrote back and offered Baxter a fellowship, which he eagerly accepted.

During his time at Iowa State, Baxter worked on a project involving phosphate ore deposits in South Africa for twelve months. His research, which focused on data analysis and how to optimize the ore mining of the deposit, would prove useful later in his career when he worked with fertilizer.

In 1949, Baxter earned his master's degree and headed into the oil business, where he spent twenty years spanning the globe in several positions, including project engineer, project manager, senior management and management consultant.

Baxter then switched gears and started working at First Nitrogen Corporation in Louisiana to build an ammonia plant. After the plant was built, his work was so impressive he was offered the position of vice president of manufacturing at CF Industries with instructions to establish the company as a fertilizer manufacturer. Baxter continued to climb the corporate ladder at CF Industries and ascended to the CEO position, where he stayed for 14 years until taking early retirement.

As time passed, it was clear he was not ready for retirement, so he founded Baxter Industries, Inc., with his wife, Jamie, who has a strong background in finance. The couple provided consulting services for companies that were experiencing financial difficulty and in need of turnaround assistance. They later bought a potassium products company, which they “turned around” and operated for 19 years. They sold the company in 2011.

After three tries, Baxter has finally retired and now actively supports the institutions he says have contributed to his success. In addition, he enjoys golf and painting landscapes.

Fond Memories: Reginald Baxter, who received his master's in chemical engineering in 1949, has many memories of Iowa State. He fondly remembers Sweeney Hall, where he spent most of his time during his studies. “It holds a warm place in my heart,” he said. “Dr. Sweeney was an enduring inspiration to me throughout my career, and I am forever grateful for having studied with him.”

Because of this, Reginald and his wife Jamie decided that supporting renovations to Sweeney Hall, specifically the computer lab, was a worthwhile endeavor. Jamie said, “I am proud to be able to support Iowa State. It's an extraordinarily fine institution that shapes the lives and future of young people in a very positive way.”

In addition to supporting these renovations, the couple also contributes to scholarships for out-of-state-graduate students studying in the College of Engineering.

Baxter Computer Lab is major addition for students

Reginald and Jamie Baxter's generosity toward Iowa State University has included funds to establish a large computer laboratory for chemical and biological engineering students.

Located in the remodeled portion of the Sweeney Hall basement, the Reginald R. and Jameson A. Baxter Computing and Collaboration Lab features a large array of computers, complete with software specifically designed for engineering courses. In addition to the computer workstations, which can accommodate more than 20 students at one time, the lab also includes collaboration areas for easy discussion of projects and assignments.

Reginald Baxter holds many fond memories of life in old Sweeney Hall (built in 1929) when he was pursuing his master's degree.

CBE students enjoy access to advanced computer systems and a comfortable space for work and study in the Baxter Computing and Collaboration Lab in Sweeney Hall.
CBE Advisory Council welcomes four members, bids farewell to two

The Chemical and Biological Engineering Department’s Advisory Council welcomes four new members. Two outgoing members are also honored for their service. The Advisory Council is composed of professionals from around the nation who contribute their expertise to the department.

 Incoming Members

Eric Fasnacht (B.S. ChE ‘89)

Eric Fasnacht joined the council in 2014. He currently holds the position of plant manager for Archer Daniels Midland (ADM) at one of the country’s largest corn processing facilities in Cedar Rapids, IA. He has served as ADM’s engineering school leader for Bradley University and now Iowa State. He continues to demonstrate a focus on team building and an interest in developing engineering leaders for the future.

Eric is an Iowa State alumnus and received his B.S. in Chemical Engineering in 1989. In 2011, he was selected to participate in ADMs CEO-led Harvard Business School Executive Development Program.

He began his career with ADM in 1989, working in the company’s oilseed division. While there he worked as a process engineer, maintenance engineer, project engineer and engineering manager. In addition to engineering, Eric has worked in the management side of ADM, serving as plant manager and regional manager for ADMs specialty oilseed processing of soft seeds.

John Kaiser (M.S. ChE ‘87)

John Kaiser received a 2014 Professional Achievement Citation in Engineering (PACE) award from the College of Engineering. The PACE award recognizes Kaiser’s superior and eminent technical and professional achievements and creativity. Kaiser is the global director of cocoa and chocolate process technology for Mars Chocolate, the leading chocolate manufacturer in the world. He leads a global, multi-cultural science and technology team, has produced 13 U.S. patents, and is the recognized subject matter expert for chocolate making within Mars.

He received an M.S. in Chemical Engineering from Iowa State in 1987.

Mark Lashier (B.S. ChE ’85, Ph.D. ChE ’89)

Mark Lashier, executive vice president of olefins and polyolefins for Chevron Phillips Chemical Company, received a B.S. and Ph.D. in Chemical Engineering from Iowa State in 1985 and 1989, respectively. In 2013 he received a Professional Achievement Citation in Engineering (PACE) Award from the ISU College of Engineering. The PACE Award recognizes Lashier’s superior and eminent technical and professional accomplishments and creativity. Lashier has produced 12 U.S. patents. He is especially noted for his economic development efforts in Singapore, where he was awarded by President S. R. Nathan.

Outgoing Members

Peter Hemken (B.S. ChE ‘64)

Kenneth L. Garrett had an exceptional 30 years with AT&T culminating in his position as senior vice president responsible for AT&T’s networks in a period of unprecedented growth and transformation. In mid-career he was selected by AT&T and Massachusetts Institute of Technology for a Sloan Fellowship at MIT. Following retirement from AT&T he established a successful consulting practice, provided leadership to three LLCs investing venture capital in start-ups, and made service to others a priority through significant volunteer leadership in non-profit organizations. With tremendous success in industry, the CBE department also honors Kenneth for his investment in Iowa State student success.

Robert A. (Bob) Lane (B.S. ChE ‘68)

After electing to retire from Shell, Bob became the chief operating officer of Sonat Exploration, a large independent exploration and production company located in Houston. He served in this role and other responsibilities involving both onshore and offshore operations until 2000, when Sonat Inc. was sold to El Paso.

He is former chairman of The Gus Archie Memorial Scholarship committee, which is affiliated with the Society of Petroleum Engineers, American Institute of Mining, Metallurgical and Petroleum Engineers. He also is former chairman of the Board of Directors of PushAmerica, the national service organization of Pi Kappa Phi Fraternity. He is chairman of the Shell Offshore Pioneers Reunion Committee and a member of Houston’s ARE (Active Retired Executives).
Bellinda Hegelheimer
Graduate Program Assistant

Bellinda Hegelheimer joined the department in January and is responsible for managing all aspects of the department’s graduate program. Hegelheimer received her bachelor’s in economics (1994) and master’s in higher education (1998) from the University of Illinois at Urbana-Champaign. She also has an ABD in curriculum and instruction (2009) and a bachelor’s in French (2012) from Iowa State University.

Kathy McKown
Program Coordinator

Kathy McKown joined CBE in July and is responsible for managing the department’s financial and operating affairs, including grants, post-award contracts and gifts. McKown graduated from Union University with a Bachelor of Science and from the University of Tennessee, Knoxville, with a Master of Library Science. Kathy previously worked for the University of Tennessee in collaboration with the Oak Ridge National Laboratory.

John Burnett-Larkins
Communication Specialist

John Burnett-Larkins became part of CBE in December, 2014 and will lead the department’s many communication functions, including writing and layout and design of publications; maintaining the department’s web page and social media communication; writing feature stories about CBE undergrads, graduates and faculty for department and university use; and department photography needs. This is John’s first job experience with Iowa State, after spending many years in various aspects of the communication business in the private sector, including marketing, public relations and broadcasting. He has also worked for Iowa State for many years as an announcer, lending his voice to the Cyclone Marching Band and Cyclone volleyball, gymnastics and softball. He also hosts the Ames Municipal band concerts each summer and works part-time at KASI radio in Ames.

CBE would like to recognize the following faculty and staff members who have recently left the department. We appreciate all their hard work and will miss them!

Jody Danielson left CBE in May 2014 and is now an assistant director with Facilities, Planning and Management at Iowa State.

Linda Edson took early retirement in December 2013. She is enjoying spending time with her family.

Chris Neary left CBE in April 2014 and is still on campus working as the communications specialist in civil, construction and environmental engineering.

Peter Reilly, Anson Marston Distinguished Professor Emeritus, retired in April 2014. See page 19 for a story about Reilly’s important contributions to the department.

CBE welcomed three new staff members in 2014

Fall 2014 CBE graduates enjoyed the Pre-Commencement Reception held at the Scheman Center. Joseph Arentson (top, center), contributed the senior address. A total of 31 undergraduate and nine Ph.D./M.S./M.E. degrees were conferred.
Continuing a family legacy

Andrew's father Jon Northrup continued the Iowa State tradition by studying at ISU for his animal science degree. Many of his relatives have also graduated from the university.

“You could say it's sort of the family's preferred school,” he grinned.

After high school, Andrew decided he, too, wanted to study at Iowa State, and taking after his Grandpa Jerry, become a chemical engineer.

Growing up, Andrew was naturally inquisitive—a trait both sides of his family encouraged, especially his Grandpa Jerry. “If I ever had a question, he always had an answer,” Andrew said.

Jerry worked for Hercules Powder Company, which produced chemicals and munitions during the Cold War.

Andrew's mom and grandpa often told him stories of their adventures traveling overseas, from Pakistan to Taiwan for example, to inspect plants and test products and equipment.

These stories, along with an affinity for chemistry and engineering, inspired Andrew's choice of major.

“My grandpa had a pretty interesting life and experiences, and I want to share in some of that.”

Andrew adds that he has always been more of a problem solver—a key trait found in engineers—than a problem maker.

Currently a sophomore at Iowa State, he has a full class load this semester, but he still finds time to relax and enjoy his life as a college student.

For chemical engineering sophomore Andrew Northrup, choosing a college after high school was simple. After all, he hails from a family of Cyclone graduates.

The Cyclone legacy goes back three generations, Andrew says, but with a few twists and turns, alternating on different sides of the family.

It starts with his great grandfather, John Northrup. John went to ISU where he received his chemical engineering degree in 1931. After graduation, Andrew says his great grandfather became an industrial chemist and managed a chemical production plant.

The legacy then skipped a generation in the Northrups, but started on his mother's side with her father, Jerry Loupee. Loupee received his degree in chemical engineering from Iowa State in 1962.

Student uses experiences of adapting to new environment to help others

As a first-generation Latina student, chemical engineering senior Alma Marquez came to Iowa State knowing she would have to adapt to a new environment. Thankfully, she says, learning communities gave her a network of peers and resources to make that transition a little easier.

Marquez shared her experiences at a national convention in Washington, D.C., on Sept. 16, 2014.

At the convention, 11 universities from across the country formed the University Innovation Alliance, an organization aimed at helping low-income and first-generation students graduate with college degrees.

University leaders and officials presented retention programs and discussed ways to better meet student needs.

Representing Iowa State with Senior Vice President and Provost Jonathan Wickert, Marquez talked about being a participant and peer mentor in ISU's learning communities.

“One of the main challenges low-income and first-generation students face when entering college is the lack of academic preparation,” she said. “Students like myself have a lot of trouble adjusting to the class dynamics, performing well on exams and actually asking for help—and many of us do need the help.”

To address this issue, ISU has 80 learning communities designed to help students succeed.

The LEAD Living and Learning Community, for example, encourages participants to take advantage of college resources, such as career services. It also teaches skills on networking.

“One of my favorite assignments in LEAD required us to take a professor out to coffee,” Marquez said. “It taught me how to build relationships with my professors and get tips on how to be a better student.”

After returning from Washington, Marquez continues to work with university leaders and students who are involved with the University Innovation Alliance.

“I can see myself helping students from other universities further develop their existing retention programs through my own experience in ISU's learning communities,” she said.
UNDERGRADUATES

No excuses, no limitations for undergrad Ralston

With two kids and a ten-year career under her belt, Dianna Ralston is not like most college students. However, the senior in chemical engineering believes anyone can do what she did.

“For someone who feels like they can’t finish school because they’re divorced, there’s no money, they have kids to take care of—there’s always a way if you have the desire and drive,” Ralston said. Originally from Marshalltown, Iowa, Ralston came to Iowa State for a degree in biochemistry after graduating from high school. She also completed coursework in management information systems, but she left the university in her early twenties.

She's had many careers throughout her life, including a jewelry maker and supplier in Los Angeles, research technician in a biochemistry lab, and a factory worker in the manufacturing of air conditioning units. But she was still left feeling unfulfilled. That’s when she decided to go back to college.

“He says every aspect of the program provides valuable lessons and connections. “Even the application process was a professional development experience, as it encourages students to think about their future and goals,” he said. Being part of the Cargill Global Scholars program aligns well with Villa's career plans to work internationally, which is one big reason he was drawn to engineering.

“We had nothing but good things to say about the program. As I read more about it, more benefits and reasons to apply became evident to me, and I continued to get more excited,” he said.

The Cargill Global Scholars program introduces students to leadership through training modules as well as mentoring and coaching from Cargill employees. Scholars are also given the opportunity to network with Cargill businesses and employees, along with other undergraduate students.

Villa, along with Hieu Nguyen (economics) and Lissandra Villa Huerta (journalism, political science), were selected from Iowa State as 2014 Cargill Scholars.

He applied for the program after learning about it from Hillary Kletscher, a 2012-2013 Cargill Global Scholar and student in agricultural and biosystems engineering.

“Hillary had nothing but good things to say about the program. As I read more about it, more benefits and reasons to apply became evident to me, and I continued to get more excited,” he said.

Chemical engineering senior named Cargill Global Scholar
Congratulations to these Fall ‘14 graduate students who have received CBE fellowships; and thank you alumni for funding them!
May 30, 2014 started out like most summer days on the Iowa State campus; that is, until the fire alarms went off in Sweeney Hall. At 5 a.m. firefighters arrived at Sweeney, responding to a blaze that had broken out on the roof of the building.

The fire was concentrated near a mechanical penthouse containing an emergency generator on the roof of the 1994 wing of Sweeney Hall (pictured, left). A 100 x 50-foot section of roof was directly damaged from the flames; however, thanks to the quick work of emergency responders, the fire was extinguished within just an hour and a half. Thankfully, no one was in the building when the fire started, and no injuries occurred.

Although there was limited structural damage to the building, the heavy black smoke from the burning roofing material and the water used to extinguish it found its way down into the building, coating a large portion of the interior surfaces. This included faculty and student offices (pictured, right) conference rooms, and both teaching and research labs.

Clean up began immediately. Water removal was followed by five weeks of cleaning of soot, replacing carpet and ceiling tiles and cleaning of hallways, labs and offices. A company was brought in to clean and restore research equipment, although a number of instruments were damaged beyond repair.

Sweeney Hall was closed to the public for seven weeks. Many who occupied the building were displaced during the cleanup. The advising staff, 10 faculty, 30 graduate students and several postdoctoral researchers were moved to other campus locations. Research activities were relocated to other labs on campus, or delayed until cleaning was complete. Four classes being taught in Sweeney and their 62 students were also moved elsewhere for the summer.

By the end of July, Sweeney Hall was starting to look normal again, and the building was reopened to the public. According to Andrew Hillier, professor and chair of chemical and biological engineering, the price tag for recovery is approaching $2.5 million. Nevertheless, there were some positives to come out of the setback. “Everyone in the department really pulled together as we faced this crisis,” Hillier noted, “and Sweeney Hall is now nearly as clean as when it was first built.” The chemical and biological engineering department would like to thank all of the ISU teams from around campus for the assistance they provided during the cleanup process. Hillier added, “The university as a whole was extremely helpful and everyone worked very hard to get the building back in operation as quickly as possible.”
Chemical engineering enrollment across the nation is at an all-time high. Nowhere is this more evident than in the Department of Chemical and Biological Engineering at Iowa State, which has seen its undergraduate population grow to nearly 800 students in 2014.

“In order to provide the best possible experience for these students, we have made significant investments in building and facilities upgrades,” said Andy Hillier, CBE department chair. One recent example of these upgrades is the construction of the Mike and Jean Steffenson Student Services Center.

The new space, which opened in the last year, was made possible thanks to the generous support of Mike and Jean Steffenson. Mike, a ’59 graduate in chemical engineering, and Jean, a ’60 graduate from the zoology program, decided to sponsor the space upon the recommendation of former department chair, Surya Mallapragada. “We asked Surya what the department priority was that fit in our budget. She described the student services center as her highest priority, and we said, ‘Okay, let’s do it,’” Mike said.

Chemical and biological systems engineering academic adviser Shannon Grundmeier believes this project was necessary to enhance the advising experience for students. “We needed to improve communication and consistency within the academic advising experience,” she explained. “Students were underserved by the original space given the very limited seating and ineffective layout.”

The Mike and Jean Steffenson Student Services Center now houses all of the undergraduate and graduate support staff members as well as three academic advisers. The renovated center offers numerous benefits, including increased collaboration and support between students and advisers, a welcoming area for current and prospective students, and a centralized place for undergraduate and graduate students to receive advising-related information.

Chemical engineering students appreciate the change. Lucas Dunshee, senior in chemical engineering, commented, “The new student advising center has more capacity to help students at once and has a more welcoming environment.”

William McNamara, senior in chemical engineering, agreed with Dunshee, “The new student center means a step toward keeping Sweeney up to date. These types of renovations show the department cares about its students.”

Grundmeier believes the Mike and Jean Steffenson Student Services Center, “provides a ‘home’ to the staff members who support the students enrolled in our undergraduate and graduate programs. The environment is more welcoming to students, faculty, and staff members alike and is a very positive change for the CBE department.”

The generosity of Mike & Jean Steffenson made the new Student Services Center a reality. See more about the Steffensons and their ties to CBE on page 6.
Former chemical engineering professor celebrates 90th birthday

Colleagues, family and friends joined Anson Marston Distinguished Professor Emeritus George Burnet Feb. 3 in Sweeney Hall to celebrate his 90th birthday. A native Iowan, Burnet was born on Jan. 30, 1924.

Burnet started his Iowa State career as an undergraduate in 1942 and returned to Ames after military service in World War II to earn his B.S. in chemical engineering in 1948. He then earned M.S. and Ph.D. degrees from Iowa State in 1949 and 1951.

Burnet joined Iowa State’s faculty in 1956 after working at Commercial Solvents Corp. He served on the faculty for the next 39 years, advocating for research and education. He held various leadership posts, including national president of the American Society for Engineering Education from 1976-1977, as well as interim dean of Iowa State’s College of Engineering and department head of the university’s chemical engineering department from 1961-1978. He retired as Anson Marston Distinguished Professor Emeritus in 1995.

Burnet has long been a supporter of Iowa State University. Most recently, he played a key role in helping to organize the Department of Chemical and Biological Engineering (CBE) Centennial Celebration. In September 2013, he was inducted to the CBE Alumni Hall of Fame Inaugural Class. He also co-authored the centennial’s signature publication, “The First 100 Years of Chemical Engineering at Iowa State University.”

Burnet now lives in Ames, and he maintains an active presence in Sweeney Hall. He is a lifetime member of the Iowa State University Alumni Association and a member of the Iowa State University Foundation W. M. Beardshear Society.

Remembering ChE student Tong Shao

ISU student Tong Shao passed away September 26, 2014 after being reported missing September 17. She was studying chemical engineering and had accepted an internship with Dippin’ Dots. She was an excellent student with a 3.7 grade point average, a good friend, and a caring roommate, according to James Dorsett, director of International Students and Scholars at Iowa State University.

The Chinese Students and Scholars Association held a memorial service for 250 people on the south lawn of the campanile October 3. Shao’s roommate, Zhiyi Sun, remembered Shao as a “creative cook who cooked eggs in a mug” and “an expert League of Legends player.”

The end of one adventure and the beginning of another for retired professor Peter Reilly

Anson Marston Distinguished Professor Emeritus Peter Reilly may have retired from Iowa State, but his legacy continues to have a lasting impact.

Reilly received his A.B. in chemistry from Princeton University in 1960 and his Ph.D. in chemical engineering from the University of Pennsylvania in 1964.

After receiving his Ph.D., Reilly worked as a research engineer for DuPont for four years, and then he spent six years at University of Nebraska-Lincoln.

He came to Iowa State in the fall of 1974 to teach and research as a professor of chemical engineering.

At ISU, he studied enzymes—proteins produced by living organisms that accelerate chemical reactions. His research focused on amylases and cellulases, which are enzymes that can convert the starch and cellulose found in plants into glucose.

Reilly also played an important role in setting up two exchange programs at the university. One program partnered with the University of Glasgow in Scotland from 1984 to 2002. The second program collaborated with the Ecole Polytechnique Fédérale de Lausanne and the Université de Lausanne in Switzerland, which, 30 years later, continues to this day.

“I’ve been able to send many students from Iowa State to study abroad, and we’ve had many international students come study here,” he said. “It’s an eye-opening experience, for those going abroad in either direction, to see the differences from country to country.”

After serving 40 years at Iowa State, Reilly retired in the spring of 2014. However, he continues to publish papers and manage ISU’s exchange program with Lausanne.

Reilly is also spending more time abroad, serving on a number of doctoral committees in countries such as Sweden and India. He also gives presentations on his research at international conventions—most recently traveling to Colombia.

Even in retirement, Reilly continues to do his life’s work.
Undergraduate Scholarships

Congratulations to all our award-winning students!

Anthony Abbate
Ross White Engineering Scholarship
Jackson Achen
Engineering Student Program Support
Tina Akinyi
Engineering Bright Futures Scholarship
Reem Alkhalil
Lois and Manley Hoppe
Michelle Ampuero
Nicholas L. Reding/Monsanto Scholarship in Engineering
Austin Anderson
Chemical Engineering Scholarship Fund
Nathan Anderson
Engineering Student Program Support
Steven Anderson
Chemical Engineering Scholarship Fund
Laura Appelen
Chemical Engineering Scholarship Fund
Joseph Arentsen
Glenn A. and Mary Ellen
Antwood
Robert A. & Jacklyn R. Lane
Maria Arvelo
Chemical Engineering Scholarship Fund
Faye Assmann
Robert and Marie E. Diers
Mitchell Atteona
Larry J. McComber
Ian Baer
Koch Scholarship
Seth Baetzold
Chemical Engineering Scholarship Fund
Amanda Balaskovits
Engineering Student Program Support
Joshua Banen
Gratson L. Bruft
Gerald and Barbara Montgomery
Chemical and Biological Engineering
Carver Barnes
Engineering Student Program Support
Jordan Barr
OPPD Nuclear Engineering Scholarship
Kevin Basemann
Chemical Engineering Scholarship Fund
Andrew Berg
Chemical Engineering Scholarship Fund
Victoria Bartram
Engineering Student Program Support
William Black
Manley R. Hoppe
Mitchell Boge
Chemical Engineering Scholarship Fund
Kelsey Brandt
Ana and Ed McCracken
Engineering Student Program Support
Devan Brisdon
Engineering Student Program Support
Abigail Bruen
Marion and Andrew Pontius
Lucas Bruene
Chemical Engineering Scholarship Fund
Philip Bus
Dr. De Vries A. Heng Chemical and Biological Engineering Scholarship Fund
Kaitlin Burdick
Engineering Student Program Support
Kelsey Burt
Edward W. & Joyce C. Backhaus
Chemical Engineering Scholarship Fund
Moli Butcher
Chemical Engineering Scholarship Fund
John Caputo
Maureen and Helen Larson
Scholarship (Oviedo)
Chadwick M. Martin Memorial Scholarship (Oviedo)
Matthew Carroll
Alpha Chi Sigma
A. Douglas & Helen Stefenson
Joseph Cicchese
Skogen-Hagenson
Alison Clark
Los and Manley Hoppe
Erica Clark
Engineering Student Program Support
Logan Clark
Manley R. Hoppe
Ryan Clark
Los A. James David Waters
Joshua Clausen
Gretchen L. Bruft
Ivor Cleveland
Engineering Student Program Support
Kelci Coates
Robert D. and Marie E. Diers
Benjamin Cool
Engineering Student Program Support
Andrew Costic
Eugene Devore Travis Scholarship
Bryan Cotta
Chemical Engineering Scholarship Fund
Perrana Gurung
Tua Beta Pi Scholarship
Chemical Engineering Scholarship Fund
Tyrel Cradic
Roderick Seward, Flossie
Ratchcliffe & Helen M. Galloway
Paul Dettman
Nickolas L. Reding/Monsanto Scholarship
Shannon Devitte
Engineering Student Program Support
Nolan Dickson
TNA Millhorne Endowed Presidential Scholarship
National Merit Scholar
Jordan Donner
Nicholas L. Reding/Monsanto Scholarship in Engineering
Grace Elonen
Engineering Student Program Support
Joshua Evans
Engineering Student Program Support
Dakota Even
LyndellBasell Futures in the Chemisphere Scholarship
Paul Faranob
Stuart M. Totty
Kenneth R. Nimmo
Chelsee Heilman
Nicholas L. Reding/Monsanto Scholarship in Engineering
Ellie Hinner
Nicholas L. Reding/Monsanto Scholarship in Engineering
Andrew Fogerdy
Roderick Seward, Flossie
Ratchcliffe & Helen M. Galloway
Matthew Fontinalis
Edward H. Huhta
Joshua Francois
Nicholas L. Reding/Monsanto Scholarship in Engineering
Casey Frank
Building a World of Difference Renewable Energy Scholarship in Engineering
Elizabeth Frank
Engineering Student Program Support
James Frank
Edward W. & Joyce C. Backhaus
Chemical Engineering Scholarship
Matthew Frankenhoff
Van A. Mensing Memorial Scholarship
Ralph S. Millhorne Endowed Presidential Scholarship
Nathan Frick
Roderick Seward, Flossie
Ratchcliffe & Helen M. Galloway
Colin Fry
Koch Discovery Scholarship
Mackenzie Garlock
Skogen-Hagenson
Michael Garvey
Engineering Student Program Support
Brian Gates
Nicholas L. Reding/Monsanto Scholarship in Engineering
Jacob Gentile
Nicholas L. Reding/Monsanto Scholarship in Engineering
Stuart M. Totty
Justin Glasper
Engineering Undergraduate Scholarship
Christina Goeddel
TNA Millhorne Endowed Presidential Scholarship
Sam Grant
Mary and Axel Peterson
Amber Graves
Engineering Student Program Support
Mason Green
Engineering Student Program Support
Sandra Greenwood
Erwin and Deloris Whitney
Paul Gregory
Chemical Engineering Scholarship Fund
Alisa Gurner
Nicholas L. Reding/Monsanto Scholarship in Engineering
Andrew Gunzel
Roderick Seward, Flossie
Ratchcliffe & Helen M. Galloway
Matthew Hafiness
Michael Gunther
Chemical Engineering Scholarship Fund
Caterpillar Innovation
Jacob Haan
Jerrold S. & Mary R. Feroe
Nicholas L. Reding/Monsanto Scholarship in Engineering
Tristan Ingraffea
Building a World of Difference Renewable Energy Scholarship in Engineering
Alex Hal
Making a Difference in Engineering Scholarship
Cody Hancock
Roderick Seward, Flossie
Ratchcliffe & Helen M. Galloway
Mike and Jean Stefenson
Quinn Hanson-Pollock
Nicholas L. Reding/Monsanto Scholarship in Engineering
Jadey Hapgood
Roderick Seward, Flossie
Ratchcliffe & Helen M. Galloway
Leslie Harder
Nicholas L. Reding/Monsanto Scholarship in Engineering
John Harlow
Nicholas L. Reding/Monsanto Scholarship in Engineering
Rebecca Harmon
Griffen Family
Mike and Jean Stefenson
Nicholas L. Reding/Monsanto Scholarship in Engineering
Joseph Harper
Roderick Seward, Flossie
Ratchcliffe & Helen M. Galloway
Mayo Foundation
Nicholas L. Reding/Monsanto Scholarship in Engineering
Zechariah
Chemical Engineering Scholarship Fund
Matthew Hendrickson
Nicholas L. Reding/Monsanto Scholarship in Engineering
Clayton Herndon
Nicholas L. Reding/Monsanto Scholarship in Engineering
Eric Hesing
Chemical Engineering Scholarship Fund
Ryan Hill
Robert G. and Marie E. Diers
Mary and Axel Peterson
Rosa Hoffman
Larry J. McComber
Grant Hopkins
Engineering Student Program Support
Maia Hove
Engineering Student Program Support
Andrew Hughes
Nicholas L. Reding/Monsanto Scholarship in Engineering
Angela Iacobucci
Lawrence E. Burkhardt
Nicholas L. Reding/Monsanto Scholarship in Engineering
Joseph Koelbl
Nicholas L. Reding/Monsanto Scholarship in Engineering
Kayla Knipping
Ross White Engineering Scholarship
Brian Konopaz
Nicholas L. Reding/Monsanto Scholarship in Engineering
Georgia Koll
Nicholas L. Reding/Monsanto Scholarship in Engineering
Tristan Ingraffea
Building a World of Difference Renewable Energy Scholarship in Engineering
Mitchell Irimer
Nicholas L. Reding/Monsanto Scholarship in Engineering
Christopher Isely
Nicholas L. Reding/Monsanto Scholarship in Engineering
Edwin John Hull
Bradley Jackson
Tua Beta Pi Scholarship
Chemical Engineering Scholarship Fund
Jared Jaeger
Roderick Seward, Flossie
Ratchcliffe & Helen M. Galloway
Nicholas L. Reding/Monsanto Scholarship in Engineering
Akhshay Kulkarni
Chemical Engineering Scholarship Fund
Jordan Donner
Engineering Student Program Support
James Krouse
Engineering Collage Scholarship Fund
Nicholas L. Reding/Monsanto Scholarship in Engineering
Ralph S. Millhorne Endowed Presidential Scholarship
Alicia Kramer
Chemical Engineering Scholarship Fund
Emily Kramer
Engineering Student Program Support
Allison Kvam
Eugene Devore Travis Scholarship
Tiffany Lam
Kenneth L. Garrett Scholarship in Chemical and Biological Engineering
Veronica Lange
Roderick Seward, Flossie
Ratchcliffe & Helen M. Galloway
Jennie Larson
Jennings Outstanding Scholarship
Andrew Lasch
Maureen & Ruth Larson
Scholarship (Oviedo)
Chadwick Morris Memorial Scholarship (Oviedo)
Catherine Montgomery
Roderick Seward, Flossie
Ratchcliffe & Helen M. Galloway
Chantel Lott
Engineering Student Program Support
Christine Leise
Nicholas L. Reding/Monsanto Scholarship in Engineering
Matthew Lentner
Mary and Axel Peterson
James Lichly
Roderick Seward, Flossie
Ratchcliffe & Helen M. Galloway
Rachel Liese
Edwin John Hull
David Lombardo
Engineering Student Program Support
Jiong Da Low
Mike and Jean Stefenson
Daniel Mackey
Chemical Engineering Scholarship Fund
Paige Matess
Nicholas L. Reding/Monsanto Scholarship in Engineering
Jennifer Matz
Engineering Student Program Support
Max McDermott
Tua Beta Pi Scholarship
Patricia Werners Merten
Memorial Scholarship Fund
Nicholas McGuire
Roderick Seward, Flossie
Ratchcliffe & Helen M. Galloway
Ryan McSweeney
Nicholas L. Reding/Monsanto Scholarship in Engineering
Reggie Medcalf
Chemical Engineering Scholarship Fund
Emma Morris
Ross White Engineering Scholarship
Andrew Mettry
Nicholas L. Reding/Monsanto Scholarship in Engineering
UNDERGRADUATE SCHOLARSHIPS (continued)

Nicolás Miranda-Bartett
Engineering Student Program Support

Boniface Mkindi
Chemical Engineering Scholarship Fund

Megan Mohar
Nicholas L. Reding/Monsanto Scholarship in Engineering

Andrew Moon
Nicholas L. Reding/Monsanto Scholarship in Engineering

Michael Moreton
Mary and Axel Peterson Scholarship

Brandon Morris
Erwin and DeLoris Whitney Scholarship

Rachel Morris
Donald H. Beiser in Honor of Dr. Morton Smutz

Alexandria Mullally
Roderick Seward, Flossie Ratcliffe & Helen M. Galloway

Brett Naehlanaas
Roderick Seward, Flossie Ratcliffe & Helen M. Galloway

Alyssa Nease
Skogen-Hagenson

Alissa Nelson
Nicholas L. Reding/Monsanto Scholarship in Engineering

Kendall Neuberger
Nicholas L. Reding/Monsanto Scholarship in Engineering

David Nguyen
Maunce & Ruth Larson Scholarship (Oviedo)

Chadwick Morris Memorial Scholarship (Oviedo)

Blake Nichtig
Erwin and DeLoris Whitney

Russell Novotny
Chemical Engineering Scholarship Fund

Sittinon Nuethong
Chemical Engineering Scholarship Fund

Alicia O’Donnell
Lois and Manley Hoppe

Lucas Ogleby
Roderick Seward, Flossie Ratcliffe & Helen M. Galloway

Kelley Okoren
Chemical Engineering Scholarship Fund

Jason Pais
Chemical Engineering Scholarship Fund

Eastern Iowa American Society for Quality Control Scholarship

Molly Parsons
Ralph S. Millhone Endowed Presidential Scholarship

Sara Parupsky
Skogen-Hagenson

Adèle B. & Charles W. Irwin OPD Nuclear Engineering Scholarship

Cannon Pearson
Patricia Werner Merten Memorial Scholarship Fund

Megan Peters
Mary and Axel Peterson Scholarship

Erica Peterson
Marion and Andrew Pontius

Tammy Phillips
H. Stuart Kuyper Scholarship

Hannah Pinnt
Chemical Engineering Scholarship Fund

Eugene Devere Travis Scholarship

Madelin Plain
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Graduate students Ting Wei and Joseph Petefish received the Chemical and Biological Engineering Graduate Student Research (Wei) and Teaching (Petefish) Excellence Awards and were honored in early 2014. Ting Wei (top photo, center) is shown with department chair Dr. Andy Hiller and professor Dr. Jacqueline Shanks. Petefish is shown with Hillier in the bottom photo. See a story about Petefish on page 17.
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